

25 June 2021

P2101 HPC Lochinvar Childcare Centre TIA

Lochinvar Child Care Pty Ltd ATF Lochinvar Child Care Unit Trust
C/- HPC Planning

Attn: Chris Lewis

Dear Chris,

Proposed Childcare Centre, Springfield Drive, Lochinvar, NSW.

We have now completed our site work and review of the documentation provided for the proposed childcare centre on Lot 1101 Springfield Drive, Lochinvar 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 on the corner of Springfield Drive and Gregory Road (Lot 1101) in a newly developed subdivision as shown below in Figure 1. A concept plan for the subdivision is included in Attachment A.



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

The subject site is a single lot yet to be developed and is therefore vacant. The surrounding land is also vacant forming part of the Hereford Hill Estate and shall be subject to low density residential development.

The site has frontages to Gregory Road and Springfield Drive. The subdivision initially has its only access to the broader road network via the New England Highway.

Road Hierarchy

New England Highway is the major road passing through the locality. It forms part of the state road network (SH9) and provides the primary link between Rutherford and Maitland to the east and Singleton and beyond to the west. Historically it carried all interstate and intrastate traffic between the M1 Pacific Motorway at Hexham through to Queensland via the northern tablelands. The opening of the Hunter Expressway in 2014 however removed heavy vehicle transport and significant light vehicle volumes from this corridor which in this location primarily provides for local movements between Branxton and Maitland. In the vicinity of the site, it operates under the posted speed limit of 80km/hr reducing to 60km/hr to the west of Wyndella Road. It generally has a 9-18m carriageway width, comprising two 3.5m width traffic flow lanes (one per direction) and narrow shoulders to the west of the site and four traffic flow 3.5m width lanes (two per direction) and narrow shoulders to the east of the site.

At the recently upgraded intersection with Wyndella Road there is provision for a cyclist lane with marking on the shoulders however no other cycling facilities are provided at this location. There is limited kerb and guttering in the vicinity of the site, reflective of its rural nature. Widening at key intersections provide additional capacity and the newly upgraded intersection with Wyndella Road and Springfield Drive provides a signalised intersection with turn lanes and pedestrian crossings.

Springfield Drive forms a new road within the Hereford Hill subdivision which connects with the New England Highway opposite Wyndella Road creating a four way signalised intersection. Springfield Drive will in the future operate as a collector road through the residential subdivision and is designed to provide a parking lane, cycling lane and traffic lane to each side with a central median providing separation and opportunities for turning lanes at key intersections. It has a kerb to kerb width in the order of 18 metres. This road is being developed in accordance with Council design guidelines and so provides kerb and guttering as well as a footpath on the eastern side and a shared pathway on the west. It is considered that as a residential road Springfield Drive shall have a posted speed limit of 50km/hr.

Gregory Road is to be a local road which connects with Springfield Drive via a T-intersection with Springfield Drive having priority. Due to a central median on Springfield Drive, Gregory Road is restricted to a left in left out only. To the south, the next intersection will provide a left turn lane off Springfield Drive and in the future Springfield Drive will have a roundabout further south of the subject site. It is anticipated that parking will be permitted along the length of Gregory Road. Kerb and guttering shall be provided with a footpath along at least the northern side of the road.

The surrounding local roads shall provide access to further residential development in the area and be under the care and control of Maitland City Council.

Current Road Network Operation

Traffic surveys were undertaken on the New England Highway in the vicinity of the subject site on Tuesday 8th June 2021 7.15-9.15AM.

The peak was determined as being 8-9am with two way flows of 1502 vehicles per hour (vph).

Flows were fairly equally split with a slight bias eastbound in the AM (55%).

The intersection of Springfield Drive/New England Highway has been designed to accommodate the future demands of the urban release area (URA) including background growth and extensive traffic modelling has been completed as part of this URA.

Car Parking

On-street carparking is expected to be available along the local roads in the vicinity of the site with typical restrictions associated with driveways and intersections.

Public Transport

The New England Highway is serviced by a number of bus services with routes 179 and 180 running from Maitland to Singleton, with two buses in both the weekday AM and weekday PM peak hourly periods.

Existing westbound bus stop is located on the New England Highway approximately 500m from the site, with bus stops for eastbound services approximately 700m from the site. These services are unlikely to appeal to parents and carers however may be suitable for staff.

As the surrounding residential development occurs with some 5,000 lots forming the Lochinvar Urban Release Area, access to public transport is expected to improve.

Proposed Development

The proposed development is for the construction of a childcare centre with capacity for up to 82 children and 13 staff/carers. 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 21 parking spaces on site.

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

Access

The driveways will provide for separate entry and exit. These driveways exceed the required width of 3 metres for separated driveways under AS2890.1, for a car park with less than 25 spaces accessed off a local road. The carpark circulation will allow for one way movement clockwise through the site.

As the roads are not yet constructed sight lines cannot be confirmed however it is anticipated that suitable sight lines can be achieved along the frontage road. 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 the posted speed limit of 50 km/hr, with a desirable sight distance of 69 metres.

Allowing for the straight road alignment this minimum distance, and potentially the desirable distance, can be achieved to the right (west) of the driveways. To the left (east) of the exit driveway the distance will be less given that the subject site is on the corner. It would appear that a sight distance of 35m can be achieved to enable a driver exiting the site to have sufficient sight distance to a vehicle entering the frontage road from Springfield Drive. 35m is the minimum sight distance for a 40km/hr frontage road speed. A vehicle turning to enter this side road is likely to be travelling at less than 40km/hr. This should enable appropriate visibility for vehicles exiting the site or approaching along these roads.

Sight lines to the footpath across the driveways can also be achieved on the basis that there are no solid walls adjacent to the driveway.

A pedestrian pathway is proposed along the site frontage and so the centre will be able to connect with this from its internal path. There is also an entry into the reception area from the car park, utilising the shared space.

Parking

A total of 21 parking spaces are to be provided within the proposed carpark on site, one of which is accessible.

MDCP specifies a carparking requirement for a childcare centre of 1 car space for every four children in attendance. Allowing for illness and holidays it is assumed that 95% of children could be in attendance. This however makes no allowance for siblings travelling together which is particularly likely given the broad spread of ages allowed for

in centres such as this. Assuming that 95% of children are in attendance at any one time the parking requirement would be 19.5 (20) parking spaces.

The parking as proposed would provide for 100% of children to be in attendance and therefore is in accordance with the MDCP guidelines.

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.

This can be achieved with the design of the parking area for the subject site.

Servicing

Servicing for the site will be minimal with the main requirements being associated with waste collection.

This will occur within the site outside of the centre's peak drop off and pick up times to enable the garbage truck to enter and exit the site in a forward direction, using the carpark as required to manoeuvre within the site.

Deliveries to the site will typically be in a van size vehicle which can park within the site carpark in the loading space provided. Such vehicles can exit in a forward direction.

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 82 children attending the centre each day, the proposal could generate up to:

- 66 trips during the morning peak period
- 58 trips during the evening peak period.

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:

- 59 vehicle trips in the morning peak hour and
- 54 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 (upto 13 staff). Total daily trips for the childcare centre would be 322 (161 inbound 161 outbound).

Whilst the centre is likely to appeal to local residents within the subdivision, particularly as the area grows, a large percentage of the traffic generated by the proposal in the short term 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 daily commute. These vehicles would already be travelling in the locality of the site along the New England Highway 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.

To provide a robust assessment the majority of traffic associated with 90% attendance will be assessed as development traffic.

Traffic Distribution

Traffic is expected to be either travelling:

1. Within the immediate residential area
2. Heading north or south along Springfield Drive
3. Travelling east or west along the New England Highway

All traffic has been assessed with an origin/destination off Springfield Drive with 80% from the north and 20% the south with traffic then approaching/leaving the centre along Gregory Road.

Once local roads are developed there shall be opportunities for traffic approaching from the north to undertake a U-turn at a new roundabout to the south on Springfield Drive or turn right at Silo Street and approach by travelling clockwise around the block. The most direct route available however is undertaking a U-turn at the central median south of Gregory Road to then approach from the south to turn left into Gregory Road and left into the carpark. Exiting traffic will be able to turn left onto Springfield Drive to join the New England Highway or for subdivision traffic, turn right from the driveway to circulate around the subdivision roads to travel south.

The main intersections impacted by the flows will be:

1. signalised intersection of the New England Highway and Springfield Drive.
2. T-intersection of Gregory Road and Springfield Drive

Table 1 - Distribution of traffic in AM and PM

Origin / Destination	AM		PM	
	INBOUND	OUTBOUND	INBOUND	OUTBOUND
To / From the east	12	12	11	11
To / From the west	12	12	11	11
To/From the south	6	6	5	5
Total	30	30	27	27

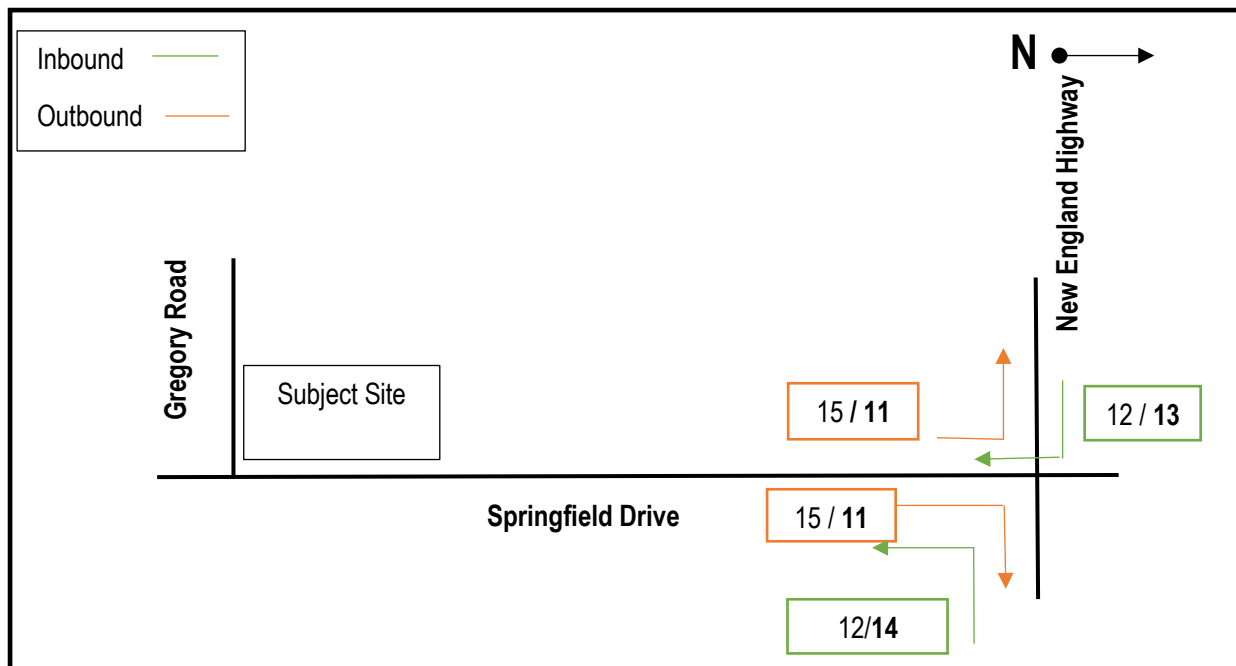


Figure 3 – Distribution of development traffic including diverted trip (AM/PM)

Impact on Road Network

The development could result in an increase in peak hour flows along Springfield Drive with some additional traffic west along Gregory Road and other local streets once built. Traffic flows on Springfield Drive could increase by an additional 48 trips two way in the AM and 44 trips two way in the PM being traffic diverted from the New England Highway. Springfield Drive has been designed as a primary collector road with adequate capacity to accommodate flows associated with the childcare centre along with the subdivision demands.

On the New England Highway, the majority of these motorists are expected to already be travelling along this route however if these trips were additional then flows on the New England Highway could increase by 24 trips two way to either the east or west of the Springfield Drive intersection in the morning and 22 two way in the afternoon. Thus, flows eastbound would increase to 834vph and westbound to 692 vph. The New England Highway would therefore continue to operate at Level of Service D west of Springfield Drive being between 600 and 900 vph per direction in a single lane.

The intersection of Wyndella Road/New England Highway/Springfield Drive has recently been upgraded by Transport for New South Wales to accommodate traffic demands associated with the Lochinvar Urban Release Area and it is assumed to have been designed with sufficient capacity to serve the surrounding subdivision of which the proposed childcare centre forms a part. The proposed childcare centre is therefore supported in terms of traffic impact to the surrounding road network and associated intersections.

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 parking is provided in accordance with the DCP.

The proposed access and circulation through the car park can be provided in a manner consistent with the requirements of AS2890 with separate entry and exit driveways.

Traffic demands in the short term will consist of mostly diverted traffic from the surrounding areas, primarily using Springfield Drive to divert from the New England Highway. The signalised intersection of Springfield Drive and the New England Highway has been designed to accommodate the demands associated with the residential subdivisions associated with the Lochinvar URA with adequate capacity to provide for these diverted trips. Springfield Drive in turn has adequate capacity for these additional two way trips whilst Gregory Road and other locals streets will be able to accommodate some additional demands from trips within the subdivision.

Access to the site in the short term will see drivers undertaking a u-turn at the central median on Springfield Drive which is acceptable given low traffic flows. As the subdivision develops to the south the road is proposed to include a roundabout and other local streets which shall provide a range of access options.

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

Yours sincerely



Sean Morgan

Director

Attachment A – Subdivision Plan



