

1 June 2023

P2619 Lang Drive Bolwarra Residential

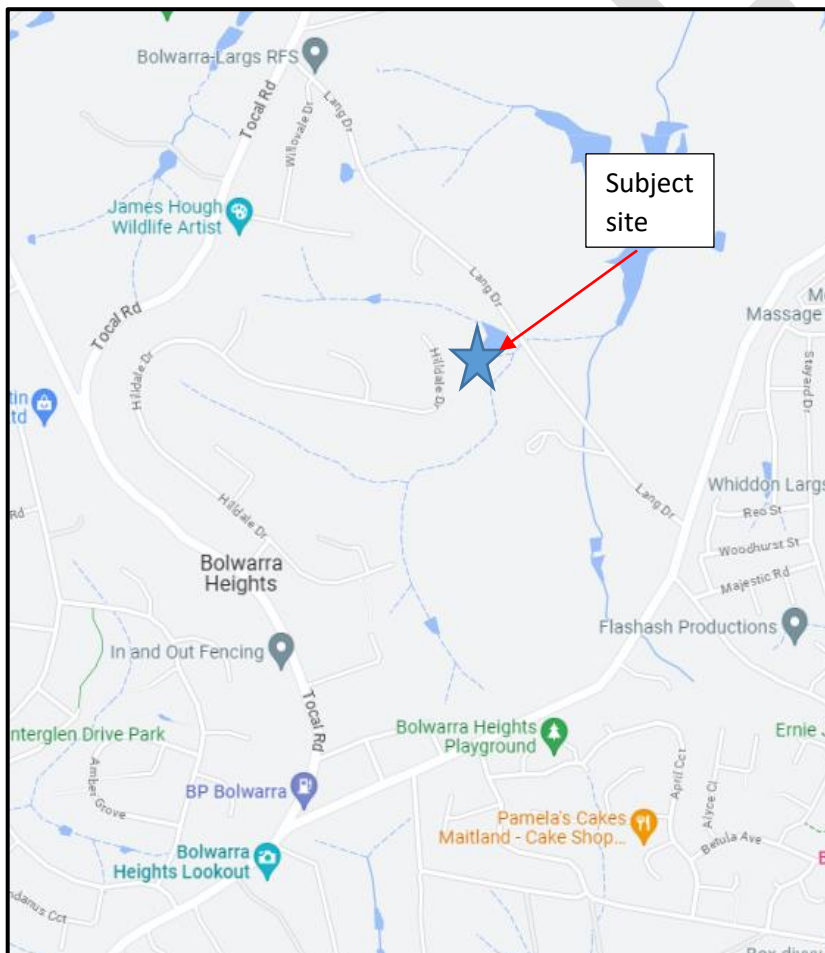
SNL Building
2 Edge Street,
Boolaroo NSW 2284

Attn: Rebekah Hogan

Dear Rebekah,

Review of traffic and access for proposed 14 lot residential subdivision, Lang Drive, Bolwarra Heights

Further to your email, we have now completed our site assessment for the above project and provide the following summary with regards to traffic and access for the proposed 14 lot residential subdivision located on Lang Drive, Bolwarra Heights.



Existing situation

The subject site is located on the northern side of Bolwarra Heights with access off Lang Drive. **Lang Drive** is a local rural road providing a connection for local traffic between Tocal Road to the west and Paterson Road to the east. It provides a single lane of travel in both directions with a grass verge. The posted speed limit is 80 km/h and whilst there is a length of sealed shoulder on each side of the road near the site there is no parking with the grass verge allowing for vehicles to pull off the road in an emergency. Lang Drive has a carriageway width in the order of 7 metres with narrow shoulders and narrows slightly near the site at a creek crossing. There are no pedestrian facilities nor street lighting consistent with the rural setting.

Lang Drive connects with both Tocal Road and Paterson Road at give way controlled T-intersections. **Paterson Road** provides a channelised right turn lane to allow for traffic turning into Lang Drive and shoulder widening to provide for left turns. Paterson Road in this location is a local rural road with a north south orientation providing a single lane of travel in each direction connecting Woodville and on to Seaham in the north with Bolwarra and Maitland to the south. It carries a mix of local and rural traffic including truck and dog combinations associated with local extraction industries.

The subject site also connects with an existing large lot rural-residential subdivision which in turn connects with Tocal Road. Hilldale Drive, the spine road through this subdivision provides access to various rural- residential lots. It has a width in the order of 7 metres with kerb and guttering which is inconsistent along its length. The intersection onto Tocal Road has a channelised left turn and auxiliary right turn treatments on Tocal Road into Hilldale Drive. Tocal Road is a state classified road carrying a mix of local and rural traffic including heavy vehicles associated with rural holdings and extraction industries.

Traffic surveys undertaken at the intersection of Lang Drive and Paterson Road shows that peak hour flows in the morning (7.45-8.45AM) see 351 vph two way on Paterson Road south of Lang Drive with flows on Lang Drive lower at 114 vph. Flows are dominant southbound reflecting commuter demands towards Maitland. It was noted that right turns from Lang Drive had a high percentage of left turns into Largs Avenue being a route for traffic travelling towards East Maitland and Thornton.



Photo 1 – View along Lang Drive showing typical cross section east of the site



Photo 2 – View south along Hilldale Drive showing typical cross section

Proposed development

The proposal allows for a residential subdivision to be developed, with 14 lots and a connection to Lang Drive to the north-east and to Hilldale Drive to the south-west. A single spine road will be provided down the centre of the site. The access onto Hilldale Drive is on the outside of a 90 degree bend whilst the access onto Lang Drive is on a straight length of road.

The individual lots will have access to this spine road with two lots (10 and 11) having frontage to Lang Drive.

The lots shall provide for residential development in accordance with the Council DCP and shall allow suitable access and off street parking within each lot. These will be subject to individual development applications.

Impact at site access

The site access onto Hilldale Drive will be via a simple T-intersection control and allow for all movements. The access is located on the outside of a 90 degree bend ensuring suitable visibility in both directions. Based on Austroads Guidelines, for the posted speed limit of 50 km/h the sight distance requirement is 90 metres minimum, 97 metres desirable. The sight distance to the left for a driver exiting the site is approximately 145 metres, which is in excess of the requirement from Austroads. To the right the visibility is available across the curve with the site opposite sculpted to ensure the verge does not inhibit visibility, with the road reserve in this location providing a clear line of sight for drivers. Subject to detailed design the distance available is in the order of 100 metres which meets both the minimum and desirable distance requirements under Austroads Guidelines. The bend on Hilldale Drive also sees motorists slowing to negotiate the bend, reducing the speed of an approaching vehicle in this location.

On Lang Drive the access is located on a straight section of road with the road rising to both the east and west, allowing for good visibility in both directions. For the posted speed limit of 80 km/h the Austroads Guideline sight distance requirement is 170 metre minimum, 181 metres desirable. The sight distance to the left for a driver exiting the site exceeds 250 metres, assisted by a slight down hill gradient. There is a slight dip in the road at 180 metres



however observations on site show that vehicles are still visible as they move through this short section of road. To the right for a driver exiting the site, the sight distance is in the order of 190 metres and exceeds the requirement under Austroads Guidelines.

It is considered that the site access shall operate in a safe and appropriate manner.

A review of crash statistics shows no crashes in this location in the five year period 2017-2021.



Photo 3 – View to left for a driver exiting the subject site onto Lang Drive



Photo 4 – View to right for a driver exiting the subject site onto Lang Drive

Traffic demands and impact

The project allows for the development of 14 lots. Based on the updated traffic surveys from TfNSW, the site could generate 7.4 trips per dwelling per day and 0.71 trips per lot in the AM peak and 0.78 trips per lot in the PM. This would give 104 trips per day, 10 trips in the AM peak and 11 trips in the PM peak.

The vast majority of these trips are expected to have an origin to the south (90%) with the balance travelling north either along either Paterson Road or Tocal Road. For the south bound traffic this will turn right onto Lang Drive to then turn right onto Paterson Road. A small number, consistent with the survey results, may turn left to travel north along Paterson Road whilst a similar small number may turn left to travel to Tocal Road to turn right to travel north. Given the circuitous route and speed limit within the existing subdivision it is not anticipated that this route will appeal to traffic to travel through the subdivision to exit southbound onto Tocal Road.

The new link may however appeal to some existing residents of the estate, who with a destination north may use this route to connect to either Tocal Road or Paterson Road. Similarly, for those who have a destination east via Largs this route may offer an alternate route compared with exiting the subdivision onto Tocal Road. The number of these additional trips is considered to be low as it is most likely to appeal to those residents living at the northern end of Hilldale Drive being in the order of 25 dwellings.

Existing traffic demands on Lang Drive are low, being 114 vph two way. The site access will operate very well with minor delays and no congestion.

The following table may be used as an initial guide to determine the need for a detailed traffic analysis in accordance with the procedure provided in Part 3 of the Guide to Traffic Management from Austroads Guidelines. When the volumes at an intersection are less than those shown, a detailed analysis to demonstrate that adequate capacity is available is unlikely to be necessary. Furthermore, flaring of the approaches is unlikely to be needed based on capacity. However, separate lanes for left or right-turning vehicles may be desirable on the major road for safety reasons.

Major road type ¹	Major road flow (vph) ²	Minor road flow (vph) ³
Two-lane	400	250
	500	200
	650	100
Four-lane	1000	100
	1500	50
	2000	25

Notes:

1. Major road is through road (i.e. has priority)
2. Major over flow includes all major road traffic with priority over minor road traffic
3. Minor road design volumes include through and turning volumes

For the current situation, the 2-way flows on Lang Drive are 324 in the AM peak and expected to be similar in the PM. Based on the above table, the minor road traffic flows could be upto 250 vehicles per hour before an assessment using Sidra modelling is required. With the development traffic flows (10-11 trips), the side road flows could be a further 240 vehicles per hour which is unlikely to occur from the adjacent residential subdivision. Applying the above flows, the 2-way flows on Lang Drive could be approaching 650 vehicles per hour before a Sidra type assessment is required.

Given that the main turn demands are left in and right out there is no queuing anticipated at the access with free flow into the site. There is therefore no requirement for turn treatments with this intersection able to be designed in accordance with Council and Austroads design requirements.



Conclusions

From the review of the site plans and our work on site it is considered that the proposal shall have a minor and acceptable impact upon the local road network. The site access is located on a straight section of Lang Drive and allows for safe traffic movements in and out of the site whilst the internal connection to Hilldale Drive can be provided in a suitable location on the outside of a bend towards the end of this street.

Yours sincerely,



Sean Morgan
Director

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