

Appendix 4

Preliminary Traffic Assessment

P0400 Rezoning at lot 240 DP 1027965

Attn: Rob Dwyer

Proposed rezoning, Lot 240 DP 1027965

We refer to the proposed rezoning of Lot 240 DP 1027965 at Medowie Road, Medowie.

This letter reviews the potential impact of a proposed rezoning on the operation of the surrounding road network in the Medowvie area, and makes comment on the suitability of previously identified road network improvements to cater for the impacts of the rezoning. A number of options have been reviewed with regard to possible land use types and the ability for the road network to accommodate the proposed land uses.

The following options have been examined as part of the rezoning process:

- Option 1 – 4 hectares of residential land;
Option 2 – mixed use of 2 hectares of residential land and 2 hectares of commercial land; and
Option 3 – 4 hectares of commercial land.



Figure 1 Location Plan

Review of Traffic and Transport Study for Medowie 2012

The Traffic and Transport Study for Medowie 2012 carried out by URaP consultants has identified traffic and transport needs required for the future development of Medowie based on a future land use strategy for the Medowie area. The study has assessed the cumulative impacts of the traffic generated by the potential land release areas on key intersections in the Medowie area, and has made recommendations on improvements to intersections, road hierarchy and road geometry based on the impact.

The Study does not provide an individual breakdown of land assumptions made for the specific subject location (Lot 240 DP 1027965) but does provide the estimated land use mix for the Medowie wide region. In relation to the subject site, the Medowie Land Use plan (Figure 2.2) indicates that the subject land is a mix of commercial use and residential use, with areas set aside for park / overland flow path. As such, it is not known what values have been used in the future traffic assignment in direct relation to the subject location. It is assumed that the assessment has considered an area of equal commercial and residential use, and would be similar to Option 2 with a mixed use of 2 hectares of residential land and 2 hectares of commercial land.

In relation to the area around Medowie Town Centre precinct, the study makes recommendations including intersection improvements and new roads to cater for the additional traffic growth. The study recommends the following upgrades:

Location	Description	Priority
Ferodale Road, Kirrang Drive to Medowie Road	Road realignment to create village main street (divided carriageway with parking / cycle lane)	Medium
Ferodale Road at Peppertree Road	Roundabout with potential 4 th leg for future development	High
Peppertree Road	Widen existing carriageway and extend to Medowie Road	Low
Peppertree Road / future road	Roundabout intersection	Low
Medowie Road at future extension of Peppertree Road	Roundabout at intersection	Low
Medowie Road at Ferodale Road	Remove roundabout and replace with traffic signals	Medium

With these improvements, the road network will operate at the following level of service in the future:

Location	Future Level of Service	Volume / Delay
Medowie Road north of Ferodale Road	C	1,000 veh/hr
Ferodale Road west of Medowie Road	B	2000 veh/hr
Peppertree Road	C	1,200 veh/hr
Medowie Road / Ferodale Road signals	B	27.2 sec/veh
Ferodale Road / Peppertree Road roundabout	A	7.1 sec/veh

An extract from the report is provided below showing the extent of road upgrades proposed in the immediate locality of the subject site.

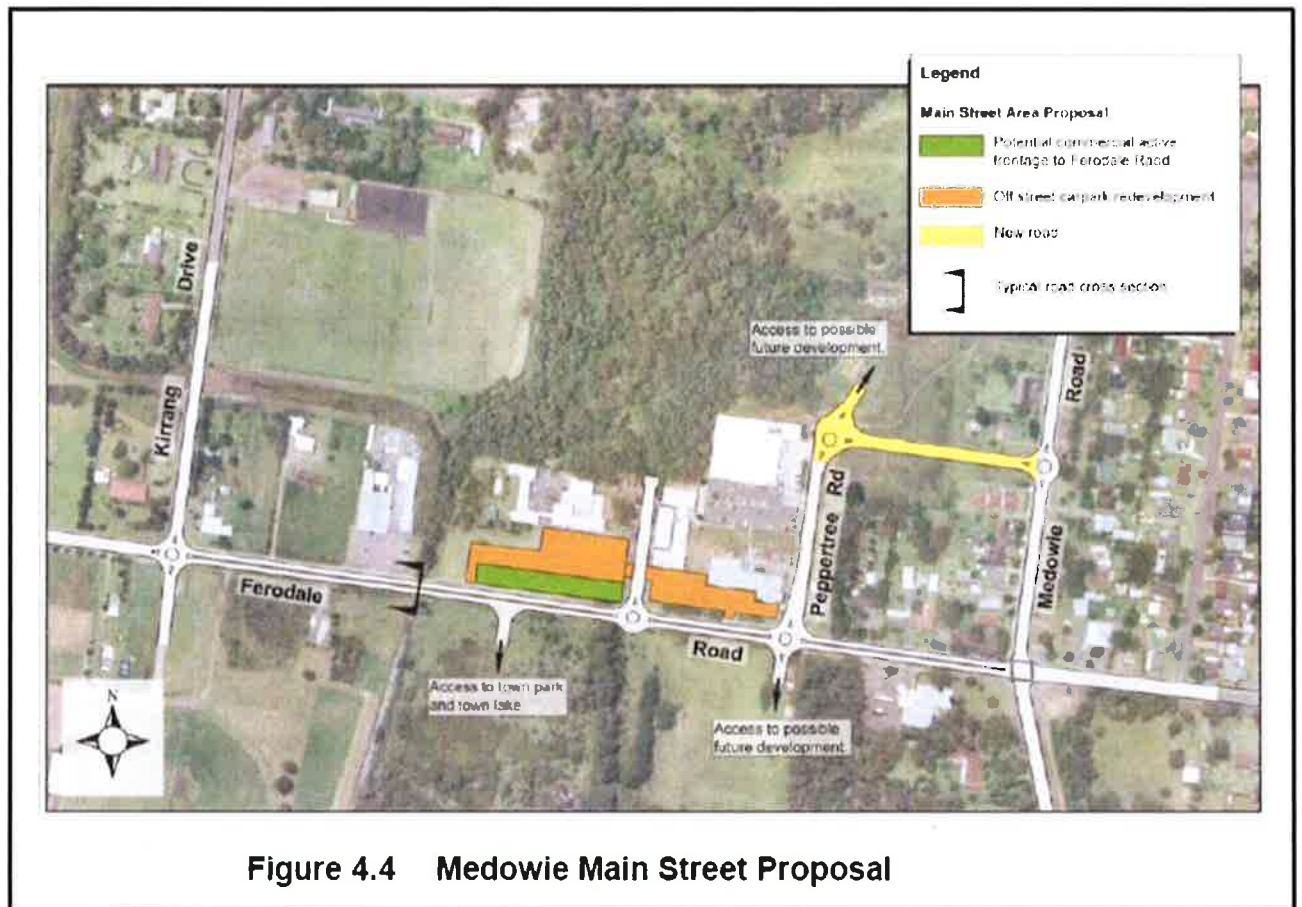


Figure 4.4 Medowie Main Street Proposal

Figure 2 Extract from Medowie Traffic and Transport Study 2012

Traffic Generation rates from potential land use

The options examined are for a majority residential development (Option 1), a mixed use development (Option 2) and a majority commercial development (Option 3).

In relation to a majority residential development, it is noted that the trip rate would be in the order of 0.71 morning peak trips per dwelling (RMS Guide to Traffic Generating Developments Updated Traffic Surveys). With the assumption of 15 lots per hectare, this would be 60 lots and 43 peak hour trips. With a trip rate of 0.78 in the afternoon peak this would give 47 peak hour trips during the afternoon.

In relation to a majority commercial development, it is noted that the trip rate would be different depending on the intended use. Office blocks, business parks and bulky good retail generate at different rates but an average rate would be 2 morning peak (and similar or lower in the afternoon peak) trips per 100m². With the assumption of a 60% yield for commercial land, this would be 24,000m² and 480 peak hour trips.

In relation to a mixed development and the assumptions above, the development would generate 240 peak hour trips commercial and 22 peak hour trips residential with a total of 262 peak hour trips. This is similar to what has been assessed as part of the study for council.

In relation to the study, an option that is mainly residential (Option 1) would generate less traffic than what has been assessed and as such no further analysis is required to determine the network capability if the recommendations made in the Study are implemented. A mixed use development of residential and commercial (Option 2) has been assessed as part of the Study, with recommendations made for network improvement.

A commercial use development (Option 3) will generate additional traffic than what was assessed as part of the Study. The commercial development could generate approximately 218 additional trips onto the network during the peak hours, which will be reasonably evenly split between the two access points. As such, it is estimated that the mainly commercial development will increase traffic volumes at the proposed roundabout at Medowie Road / Peppertree Road of 100 vehicles per hour, and Ferodale Road / Peppertree Road of 100 peak vehicles.

Intersection capacity

The study has made initial assumptions on the development lot yield and mix of residential and commercial zoning for the subject development site and as such has estimated the traffic volumes generated from the site. The refinement of the development mix as a part of the rezoning application will result in minor changes to the traffic volumes and the traffic assignment for the Medowie area. A development of mainly residential (Option 1) will generate lower traffic volumes, where as a development of mainly commercial (Option 3) will generate additional traffic volumes.

The study has indicated that with the proposed network improvements (roundabout, traffic signals and road widening), the surrounding road network will operate at good levels of service. Level of Service A/B for the future operation of the intersection points indicate that they have good operation due to traffic volumes not approaching the capacity of the intersection. As such, the proposed network improvements will result in spare capacity at each intersection access point at the subject development site.

Given that the future road network will have spare capacity, increases in traffic associated with a new development mix that differs to the original assumptions could be catered for. Intersections with a Level of Service A or B could accommodate the additional traffic associated with the commercial development (Option 3) and still operate at an acceptable level of service and delay. An increase of approximately 100 peak hour vehicles at each intersection will result in similar levels of service and these levels will remain under the desirable Level of Service C for network operations. As such, it is considered that the proposed modifications to the road network as identified in the Study could accommodate a mainly commercial development if that is the land use chosen.

Conclusion

The Traffic and Transport Study for Medowie 2012 carried out by URaP has assessed the impact on the road network in Medowie associated with land use changes. The study has identified road improvements required to facilitate the land use changes. The intersection improvements result in an acceptable Level of Service at the proposed roundabouts and traffic signals.

Although the assumptions of the zoning of the subject development site (Lot 240 DP 1027965) were not known for the study, it appears that it has been assessed as a mix of commercial and residential land uses. As such, the following observations are made:

- If a rezoning option to create a predominantly residential land use is made, this would generate lower traffic volumes than what has been assessed in the study and as such the network improvements identified would be sufficient;
- If a rezoning option to create a mixed of commercial and residential land is made, this would generate similar traffic volumes to what has been assessed in the study and as such the network improvements identified would be sufficient; and
- If a rezoning option to create a predominantly commercial land use is made, this would generate higher traffic volumes than what has been assessed in the study. The study has recommended network improvements that will have considerable spare capacity to cater for the increase in traffic volumes from the two differing land uses and as such the network improvements would be sufficient.

Please feel free to contact me on 4925 7795, should you have any queries.

Yours sincerely



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Senior Traffic Engineer

