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**Mona Vale Town Centre - Balancing Place Making and Traffic Engineering**

The project is to study the traffic and parking demands within Mona Vale Town Centre, however, Council is approaching the entire project from the perspective of place making, i.e. putting people first and letting the transport system respond, rather than being the driver for change. In this regard the entire town centre road network has been surveyed and modelled in order to assess various scenarios, which have been developed primarily to increase the pedestrian experience (safety, level of service, outdoor activities (dining etc.), convenience and connectivity between two distinct parts of the Town centre. This exercise has led directly to proposed changes to the urban design including major proposals to reduce road space, the dominance of intersections and the placement of shared zones within one block of the town centre.

The parking demand study is complete and confirms that on-street parking is in high demand within the Town centre, but that a high turnover of space occurs, which is ideal for a commercial centre. The strategy is to adopt a variety of parking controls to enable easy short term parking, (to increase visitations) and cater for the needs of workers in the area. A proposal by Transport for NSW to improve the city bound bus services will increase the demand for commuter parking and the strategy deals with balancing this need, with the goal of maintaining a vibrant, accessible town centre.

**1. Introduction**

The Mona Vale Traffic Study and Parking Strategy has been prepared as an outcome of the Place Planning project being undertaken by Pittwater Council for Mona Vale Town Centre. Parking and Traffic Consultants Pty Ltd (PTC) was engaged by Council to undertake an assessment of traffic conditions and road network performance under existing and future scenarios and to develop a parking strategy to manage the existing and future parking supply.

The study involved the collection of traffic and parking data through surveys and open forums with the public and local business community.

**2. Place Planning**

Between January 2014 and July 2015 Council undertook a Place Planning process, which involved public consultation and the documentation of ideas relating to the future planning of Mona Vale Town Centre. The primary goals of the process were to assist Council to:

- Create places designed for people,
- Attract the right uses to the right places,
- Provide a focal point for employment and a choice of affordable housing typology,

- Improve connectivity in and around the centre, especially for pedestrians,
- Recognise the importance of streets as community spaces and destinations.

### **3. Aims of Study**

This study has been prepared to inform the Place Planning project being undertaken by Council as described above. Putting people rather than vehicles at the centre of Place Planning requires a change in focus towards connectivity for pedestrians, cyclists and public transport, a de-emphasis of vehicle access and the road network and a change to the management and priority of parking.

In this regard it is important to establish a balance between place making (an environment that is attractive for people to work, shop and live) and the transport network (the movement of vehicles around and through an area and the ability to accommodate parking).

The aims for the study included:

- The production of a traffic model, that:
  - Assessed the long-term traffic implications from the potential growth of the Mona Vale Town Centre
  - Provided a base line model to inform development assessment, traffic and transport strategy development in Mona Vale Town Centre
  - Reviewed the performance of the existing public transport networks, especially to support the planned strategic bus corridors (BRT), and provide recommendations for improvements to cater for future growth and demands.
  - Tested the role and function of the proposed new finer grain road network, including possibility/feasibility of potential future connections.
  - Tested scenarios for reduction of traffic i.e. “pedestrian focussed” environment on central streets such as Pittwater Road, Bungan and Park Streets.
  - Was used as a community engagement tool that was adapted to local traffic characteristic
- A review of the existing parking capacity and real demand for parking including commuter parking, in terms of current population and future growth of population
- Provision of a strategy for providing parking which promotes more active mode of transport and efficient land use.

### **4. Study Area**

The Mona Vale Town Centre comprises a well-defined commercial centre, with an adjoining light industrial area to the north and low density residential areas to the west and south. Barrenjoey Road forms the south-eastern edge of the Town Centre with the Mona Vale Golf Course and Hospital abutting the coast.

The project defined the Town Centre in terms of two radii from a central location within the Town Centre, being the 'Study Area = 400m Radius' and the 'Zone of Influence = 800m Radius' as illustrated in Figure 1.

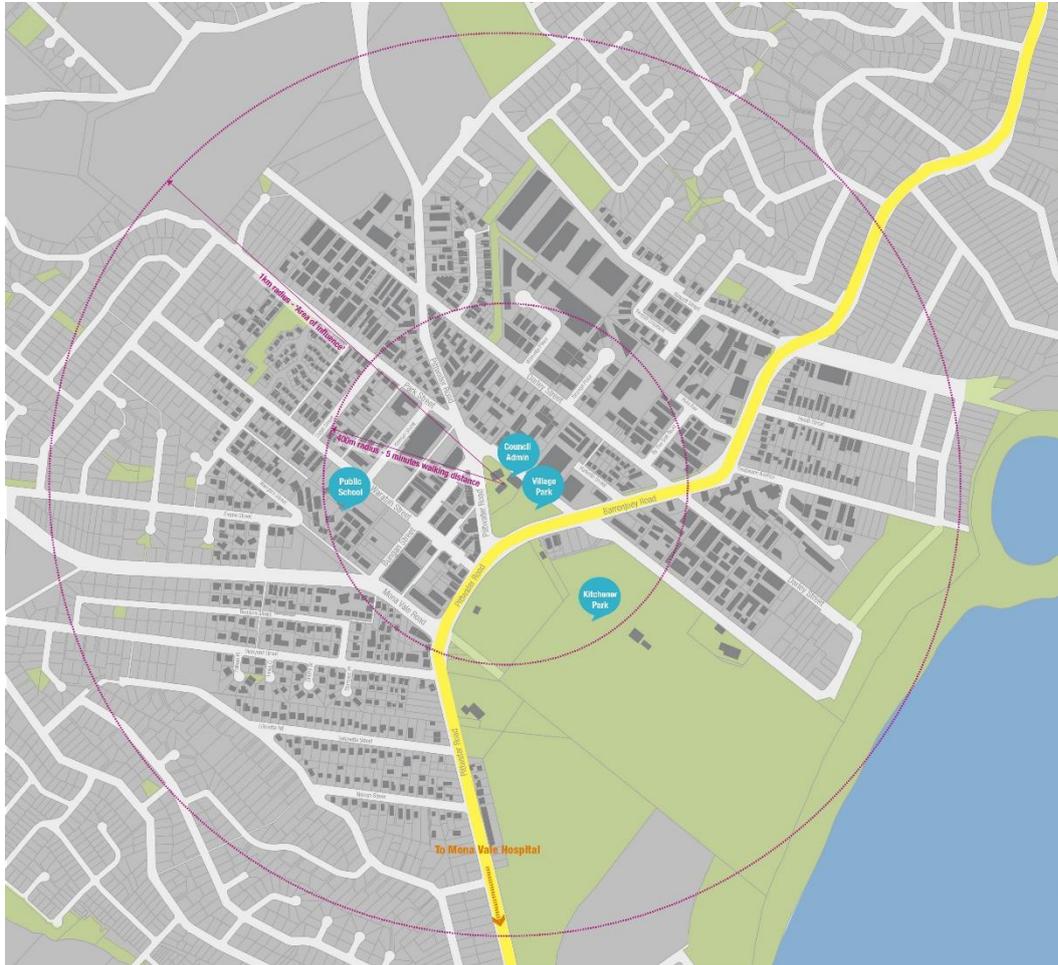


Figure 1 - Study Area

The Study Area comprises three distinct land use categorisations, which is evidenced by the type of parking activity observed during the study. The three areas are illustrated in Figure 2 and comprise:

- Commercial Area (including schools and Council administration),
- Light Industrial Area,
- Residential Area.



Figure 2 - Land Use Areas

## 5. Research and Data

To collect the data required to undertake the study a number of collection methods and surveys were undertaken including

- Intersection surveys (17 intersections as shown in Figure 3 )
- Automated traffic counts
- Public intercept surveys
- Online questionnaires
- Information events
- Parking inventory and usage surveys
- Travel time surveys
- Origin and destination gates

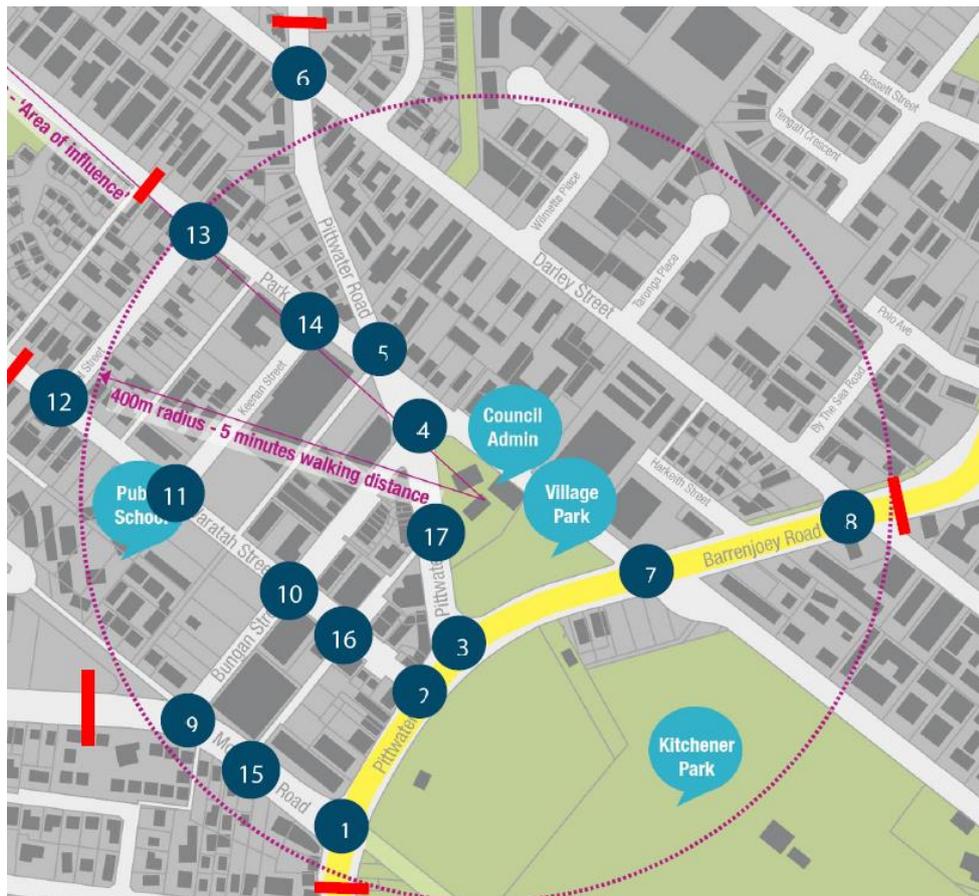


Figure 3 - Surveyed Intersections

Having collected all data relating to the Town Centre, this enabled us to build the traffic model (undertaken by Transport Modellers Alliance (TMA)), commence on the parking strategy and determine the constraints presented by the road network and the needs of the community.

## 6. Road Network Model

A network model was developed to assess the existing operation of the road network and enable us to test various growth and road change scenarios. The models comprised the following scenarios for the AM and PM peaks:

- Existing Arrangement and volumes
- 2021 with existing arrangement and growth at 1% per annum
- 2021 with proposed road changes and growth at 1% per annum

From the model, we were able to determine that the background growth in traffic would cause some notable delays at key intersections, requiring changes such as the lengthening or fight turn lanes etc. The various road change ideas (shared zones, lane removals, intersection adjustments) were all applied to the network, which caused a redistribution of trips around the Town Centre and concluded that the works could take place with little impact on the performance of the network.



Figure 4 - Screenshot of the road network model

## 7. Parking Strategy

The surveys found that the Town Centre has a high turnover of vehicles, mainly resulting from the 1 hour parking restrictions, but that the surrounding roads were used for all day parking where no parking restriction apply. This means that visitors are provided with a choice of waiting for a short-term space within the constrained town centre, or parking beyond the band of all-day parking around the edge of the town centre. This in turn produces a perception that parking is difficult and this was reflected through the community consultations.

The perception that parking is not available may be due to the following:

- Drivers prefer to on-street close to their destination rather than off street and walk;
- Drivers are unaware that there is parking available;
- Drivers wish to find parking for a time period longer than that available; and
- Drivers expect to find parking close to their desired location.

The key to the parking strategy is to improve the management of the existing supply.

- Adopt a general principle that where occupancy exceeds 85% (practical capacity) on a consistent basis, consideration is given to changing time restrictions and/or implementing paid parking to

manage parking demand. Introduce time restrictions into the residential and industrial zones (Darley Street) adjoining commercial zone (e.g. 2P).

- Consider converting off street car parks in the commercial zone (car parks A and B and Bungan Lane car park Levels 1 and 2) to 2P weekdays. The time restrictions will still be greater than on street (1P). Similarly 8P parking in the Bungan Lane car park could be converted to 3P parking.

## 8. Constraints and Opportunities

The assessment of the town centre and the public consultations provided a large list of existing issues faced by the population, and visitors to the town centre. In conjunction with the team at Council we were able to compile a number of changes to the road network that would resolve existing issues, but also incorporate the aims of the Place Plan.

The options recognise the need to manage the road network and the volumes of traffic using the network now and in the future, while improving the environment for pedestrians and other road users. In this regard, the arterial road network, comprising Barrenjoey Road and Mona Vale Road remain largely unchanged, although improvements to the intersection of Pittwater Road and Barrenjoey Road are proposed.

Each of the improvement options has been assessed using traffic modelling to ascertain the impacts on the performance of the road network, and to assist with ascertaining mitigation options (e.g. promoting alternative routes).

- Intersection Reduction, Pittwater Road / Barrenjoey Road
- Pittwater Road (between Barrenjoey Road and Bungan Street)
- Bungan Street / Pittwater Road Intersection
- Bungan Street and Bungan Lane Shared Zone
- Arterial and Regional Road Signage
- Parking Restrictions, Bungan Street
- Split Phase Signal Operation at Pittwater Road / Darley Street.

## 9. Conclusion

The operational capacity of the road network was assessed through modelling, based on peak hour traffic surveys, traffic signal data and a simulation of the road layout and traffic controls. The model confirms that the existing road network operates within capacity during the daily peak periods and that there is spare capacity to accommodate future growth in traffic activity.

The model tested a future scenario whereby the existing traffic activity was increased by 1% per annum (accumulatively) to 2021. This scenario confirms that the road network can accommodate this level of growth, although there are indications that certain intersections will require adjustments to the traffic signal timing or some physical works (primarily within the state roads).

The proposed works were applied to the road network model to assess the impacts on the road network. The results indicate that the works can be undertaken with some relatively minor mitigate works required. The primary impact results from redirecting traffic along Darley Street, whereby the right turn movement from Barrenjoey Road generates a queue that extends beyond the existing right turn lane, which then blocks a southbound lane. This will likely require an adjustment to the traffic signal timing and an extension to the right turn lane. It is evident that natural traffic growth will require these changes regardless of the works.

What this essentially means is that there is sufficient spare capacity in the surrounding road network to allow the Town Centre to be modified to achieve the goals of the Place Plan, i.e. putting people before cars.

The results are documented in the Place Plan, now available of Council's website, which are due to be adopted by Council in coming months.

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