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MEMORANDUM

13 July 2007

To	Angela Langdon		
Copy to			
From	Adrian Bateman	Tel	02 9239 7234
Subject	Springwood Town Centre Stage 2 Traffic Report	Job no.	21/15658

Dear Angela,

Please find attached the final Stage 2 Springwood Town Centre Traffic Report.

If you require any further information please do not hesitate to contact me.

Regards

Adrian Bateman

Senior Transport Planner

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MEMORANDUM

Springwood Town Centre Revitalisation
Stage 2 Traffic and Transport Advice

1 Introduction

GHD are commissioned by Blue Mountains City Council (BMCC) to provide traffic and transport advice in connection with the redevelopment options of three Council owned sites in Springwood Town Centre.

GHD completed a Stage 1 Traffic Study in March 2007. The Stage 1 study provided a review of existing transport conditions in Springwood Town Centre and identified a number of transport related constraints and opportunities for the redevelopment of the Northern Car Park, Southern Car Park and Civic Centre sites. The study also provided general travel characteristics of commercial, residential and retail land uses and examined the engineering feasibility of the provision of the David Road East Link Road.

This stage 2 traffic advice provides more detailed site specific advice in the context of BMCC identified development options and examines traffic circulation issues within Springwood Town Centre.

The advice is structured as follows:

» Section 2 calculates the parking requirement for each of the three potential development sites under a range of BMCC identified development options;

» Section 3 provides some cost rates for various types of parking facilities;

» Section 4 addresses some site specific infrastructure considerations requested by BMCC;

» Section 5 examines options to improve traffic circulation within the Town Centre and thereby provides improved vehicular access to the development sites; and,

» Section 6 considers other transport implications of the potential redevelopments.

For redevelopment on any of the sites a detailed traffic and parking report would need to be submitted in support of the development application. This advice contained herewith does not constitute a traffic impact assessment. Rather it is intended to inform the BMCC decision making process on the redevelopment issues surrounding the three identified sites.

2 Site Specific Parking Advice

Applicable car parking standards are provided in BMCC (LEP 2005) *Better Living DCP.*

The DCP provides the following rates for the land use options under consideration within this report:

»	Shops	1 space per 25m^2 gross floor area (GFA).
»	District supermarkets	1 space per 20m^2 gross leasable floor area (GLFA).
»	General stores	1 spaces per employee on duty at any one time.
»	Multi Dwelling Housing	1 space per dwelling with a GFA of less than 125m^2.
»	Multi Dwelling Housing	2 spaces per dwelling with a GFA equal to or greater than 125 m^2.
»	Multi Dwelling Housing	1 space per 5 dwellings for visitor parking.

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2.1 Northern Car Park

BMCC have stated that in all the redevelopment options for this site that Greenway Lane would remain open to vehicular traffic.

The following paragraphs outline the parking requirements for two main redevelopment options with a number of associated sub options.

2.1.1 Option 1 Extension of Existing Franklins Supermarket on Partial Site Area

An extension to the existing Franklins Supermarket of approximately 1,000 m^2 GFA is considered. The extension occupies the area to the west that currently accommodates a gravelled parking area, health care facility and playground. BMCC advise that this option would not provide additional car parking.

Parking Analysis

The existing gravelled parking area is estimated to provide parking for approximately 19 vehicles. These spaces would be lost by the redevelopment.

Application of the BMCC better living DCP parking rate for district supermarkets for an extension of 750 m^2 GLFA would require 38 parking spaces.

This option would therefore require the shortfall in parking of 57 spaces to be accommodated within the existing public parking within the Town Centre.

2.1.2 Option 2 Full Development of Northern Car Park

This option would provide a 4,000m^2 GFA anchor supermarket, 500m^2 GFA speciality stores and 30 two-bed units. All the existing parking on-site would be removed by the development.

Table 1 itemises the parking requirement for each element of the potential development.

Please note the existing number of car parking spaces shown in the table are taken from the BMCC (May 2007) *Analysis of the Current Supply and Peak Demand for Parking within the Springwood Town Centre.* This report is referred to as BMCC 2007 parking survey throughout for the remainder of this advice.

It should also be noted that the BMCC DCP parking rates for multi dwelling houses are based upon floorspace. For this assessment it is assumed that the 30 two-bed units provide a floorspace less than 125m^2.

Table 1 Northern Car Park Option 2 Parking Requirements for Development

Development	Unit	Parking Rate	Parking Spaces
Supermarket	3.000m^2 GLFA	1 space per 20m^2 GLFA	150
Speciality stores	500m^2 GFA	1 space per 25m^2 GFA	20
Two-bed multi dwelling houses	30 (less than 125m^2 floorspace)	1 space per dwelling with a GFA of less than 125m^2	30
Existing on-site parking to be removed	-	-	93

Car Parking Balance between the Northern and Southern Car Parks

BMCC identified sub options to provide the required parking provision on-site or in a combination of on-site and in the Southern Car Park.

The BMCC 2007 parking survey shows that during a Friday Lunch peak there were a total of 36 vacant public spaces located in the Southern Car Park. These assessments therefore only consider that this level of parking provision could be achieved in the Southern Car Park with the balance to be provided on-site.

GHD provide the following comments on the sub-options:

» Option 2a: Full replacement of existing spaces and 100% of additional spaces as required by BMCC DCP. This would require a total of 293 car parking spaces to be provided. BMCC 2007 parking survey identified a peak period availability of 39 spaces in the Southern Car Park. Therefore a minimum of about 260 spaces would need to be provided through the provision of basement or above ground parking on-site.

» Option 2b: Full replacement of existing spaces and 50% of additional spaces as required by BMCC DCP. This would require a total of 193 car parking spaces to be provided. BMCC 2007 parking survey identified a peak period availability of 39 spaces in the Southern Car Park. Therefore a minimum of about 155 spaces would need to be provided through the provision of basement or above ground parking on the Northern Car Park site.

» Option 2c: Full replacement of existing spaces and no additional spaces as required by BMCC DCP. This would require a total of 93 car parking spaces to be provided. BMCC 2007 parking survey identified a peak period availability of 39 spaces in the Southern Car Park. Therefore a minimum of about 55 spaces would need to be provided through the provision of basement or above ground parking on the Northern Car Park site.

2.2 Southern Car Park

BMCC have indicated that due to site constraints the redevelopment potential of this site is limited. BMCC consider the role of this site to provide deck parking to take advantage of the existing site topography. See comments in section 4 regarding the potential role of the Southern Car Park and potential connectivity with the Northern Car Park.

2.3 Civic Centre

2.3.1 Parking

BMCC advise the redevelopment options for this site are limited to the current car parking elements of the site. The redevelopment potential has been identified as providing an extension to the existing supermarket of 2,500 sqm GFA plus 20 two-bed residential units provided to the rear of the Library.

BMCC advise that the current Supa LGA provides approximately 1,000 m^2 GFA (which is consistent with the 38 parking spaces allocated). Therefore the redevelopment would essentially provide an additional 1,500m^2 GFA or 1,125m^2 GLFA.

Table 2 itemises the parking requirement for each element of the potential development. Note that the existing number of car parking spaces shown in the table are taken from the BMCC (May 2007) *Analysis of the Current Supply and Peak Demand for Parking within the Springwood Town Centre.*

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Table 2 Civic Site Parking Requirements for Development

Development	Unit	Parking Rate	Parking Spaces
Supermarket	1,125m^2 GLFA	1 space per 20m^2 GLFA	57
Two-bed multi dwelling houses	20 (less than 125m^2 floorspace)	1 space per dwelling with a GFA of less than 125m^2	20
Existing on-site parking to be removed (Supa LGA and Civic Centre)	-	-	38+80=118

GHD provide the following comments on the BMCC identified sub-options:

» Option a: Full replacement of existing spaces and 100% of additional spaces as required by BMCC DCP. This would require a total of 195 car parking spaces to be provided.

» Option b: Full replacement of existing spaces and 50% of additional spaces as required by BMCC DCP. This would require a total of 136 car parking spaces to be provided.

» Option c: Full replacement of existing spaces and no additional spaces as required by BMCC DCP. This would require a total of 118 car parking spaces to be provided.

3 Cost Rates for Parking

The Australian Institute of Quantity Surveyors produce the quarterly publication *The Building Economist*. The March 2007 edition provides the following building costs per square metre of gross floor area (exclusive of GST) for car parking in Sydney as follows:

» Undercover car park: $432 per m^2

» Basement car parking under office block (suburban): $908 per m^2

» Multistorey car park with low speed passenger lifts, minimum finish: $543 per m^2 or $15,731 per car space

It should be stressed that actual costs will vary dependant upon a range of site specific factors, availability of labour / materials etc. These rates should provide a ball park estimate of likely costs associated with the various parking options but should not be relied upon for detailed cost estimates. It is suggested that a suitably experience and qualified cost estimator provide suitable feasibility/cost considerations for the various options.

4 Site Specific Infrastructure Considerations

BMCC have requested comments on a number of site specific issues. This section provides comments on those issues for each of the sites.

4.1 At Grade Connectivity Options between the Northern and Southern Car Park Sites

Currently there is good at grade pedestrian connectivity between the Northern and Southern Car Park sites by means of a raised platform pedestrian crossing. However, to further improve at-grade pedestrian interconnectivity the existing crossing could be upgraded to remove any vertical upstand, subject to road drainage considerations, to provide an entirely flat profile between any store entrance and the car park. This would assist mobility impaired users and people with shopping trolleys / prams.

The walkway would preferably be covered, lit, provide an appropriate level of slip resistance and provide suitable signage.

Additional traffic management techniques could be installed on Macquarie Road upon approach to the pedestrian crossing to assist in the control of vehicle approach speeds.

4.2 Underground Connectivity Options between the Northern and Southern Car Park Sites

BMCC have identified the potential for an underground linkage between the Northern and Southern Car Park sites. This linkage could provide vehicular and pedestrian access. A vehicular linkage would provide direct convenient access to basement car parking levels from the Southern Car Park and could reduce traffic flows along Macquarie Road in the vicinity of the sites. A pedestrian linkage would be a preferred option to remove the pedestrian-vehicle conflict potential of intensified usage of the at grade pedestrian crossing.

There are likely to be numerous services located under the existing Macquarie Road road reserve. To avoid disruptions to supply and the likely costs of service relocation any underground tunnel would need to be sufficiently below the required easements to existing services. It is suggested that a civil engineer be approached to provide suitable feasibility / cost considerations for such an option.

4.3 Civic Centre Site

BMCC have indicated that following:

» The existing driveway from Macquarie Road to the library and civic centre will be closed.

» The current laneway on the eastern site boundary will be upgraded to serve the proposed car parking area at the rear of the Civic Centre site.

» The existing pedestrian crossing to the west of Greenway Lane will be relocated to the east of Greenway Lane to improve pedestrian accessibility to the site.

» A lay by drop off area will be formed on the southern side of Macquarie Road

GHD provide the following comments:

» The closure of the existing driveway would provide benefits to the pedestrian environment on the footpath to the south of Macquarie Road.

» The eastern boundary laneway is currently one way in the southbound direction. It provides a width of 3.5m at its narrowest point widening to 4.0m at its southern end. Access to a loading area on the east of Braemar House is provided midway along its length.

» The eastern boundary laneway would be suitable to provide a one-way entry access to a car park. Its intersection with Macquarie Road could be upgraded with some on-street parking removed to improve

its operation and to reflect the likely intensification in vehicular usage. An improved pedestrian crossing across the driveway would be required.

» Egress from the redeveloped area could be provided on Springwood Avenue or Raymond Lane.

» The relocation of the pedestrian crossing may require the removal of existing on street parking spaces. However any spaces lost could be offset by the provision of parking at the location of the existing crossing.

» Current pedestrian desire lines between the site and the northern portion of the town centre would be at the location of the existing pedestrian crossing. If the intersection were to be relocated to the east all pedestrian movements from the northern portion of the town centre to the site would have to cross the wide intersection of Greenway Lane. To provide mitigation an additional pedestrian crossing could be provided across the Greenway Lane intersection.

» The proposed lay-by & drop off area would serve vehicles approaching the town centre from the east. A further lay-by and drop off should be provided on the opposite side of the road, upon exit from the relocated pedestrian crossing, to cater for vehicle movements from the west.

5 Town Centre Traffic Circulation Options

BMCC have identified that if the Northern Car Park is redeveloped with no additional parking provided the main car parking focus in the town would be the Southern Car Park. Traffic circulation routes to the Southern Car Park have been identified as an issue by BMCC on the basis of the following concerns:

» Lack of direct access off Macquarie Road to the Southern Car Park.

» Current limited access via Raymond Rd then Springwood Avenue to the Southern Car Park.

» Lack of signposting to car parks.

To address these concerns BMCC have requested the investigation of four improvement options as follows:

» New road on private land adjacent to Royal Hotel from Macquarie Road to Springwood Avenue.

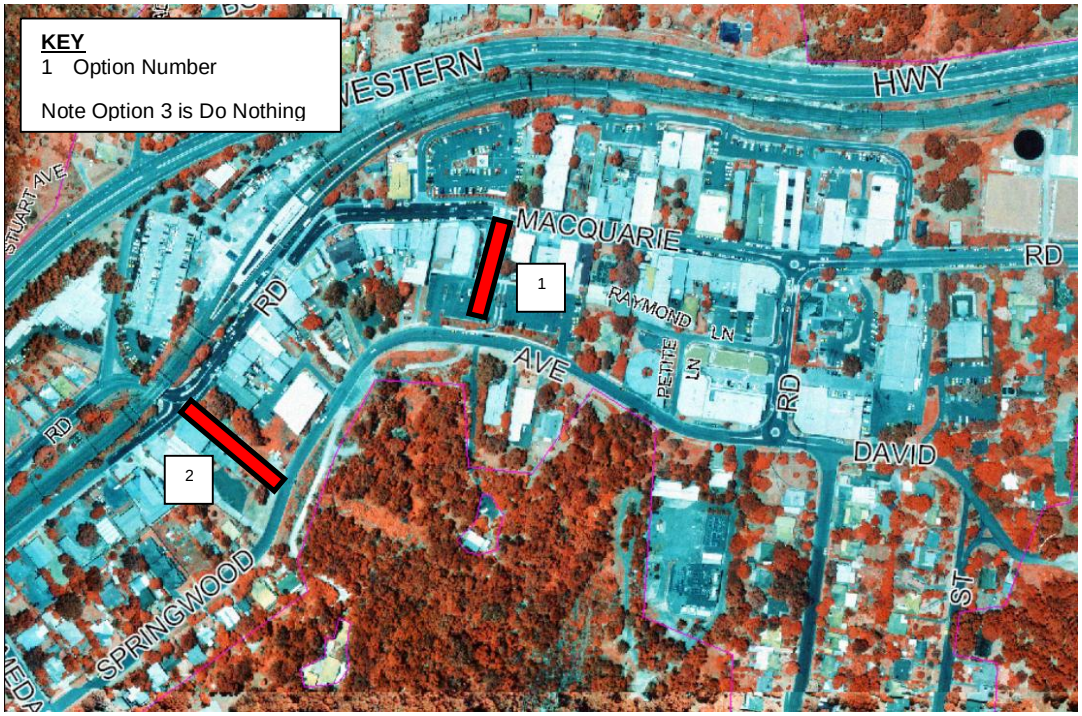
» Direct access via Town Square to Southern Car Park.

» New road via Rest Park or adjacent private land from Macquarie Road to Springwood Avenue close to the Macquarie Road /Ferguson Rd intersection.

» No new road link (access to Southern Car Park remains via Raymond Road and Springwood Avenue).

The potential road link options considered are shown in Figure 1.

Figure 1 – Potential Road Link Options Considered



General comments on the feasibility and potential benefits resulting from these options are presented in the following paragraphs.

5.1 Option 1 - Direct access via Town Square to Southern Car Park

GHD comments include:

- This option would provide vehicular access directly into a deck parking structure on the site. It would provide the most direct means of access to the Southern Car Park. However, it would funnel all associated traffic movements along Macquarie Road.
- A new driveway from Macquarie Road through the Town Square would be required.
- The driveway providing access to the off street car parking would need to provided in accordance with AS2890.1:2004.
- A new driveway in any location along the Town Square frontage to Macquarie Road would require the relocation of the existing pedestrian crossing.
- For a two way driveway (in and out) the crossing should be located at a suitable distance from the driveway to maximize sightlines for drivers turning out of the access toward the crossing and to ensure drivers have sufficient time to react to pedestrians using the crossing.
- For a one-way driveway ingress in the southbound direction would be preferable. Again a suitable distance should be provided between the driveway and any relocated pedestrian crossing to ensure road safety.

» Some on-street parking along the south of Macquarie Road could be lost to accommodate a new driveway.

5.2 Option 2 - New road via Rest Park or adjacent private land from Macquarie Road to Springwood Avenue close to the Macquarie Road /Ferguson Rd intersection

GHD comments include:

» This option would provide a roadway to assist in traffic recirculation and would provide more direct link for vehicle wishing to access Springwood Avenue from Ferguson Road. It would provide limited recirculation benefit for vehicles from the east on Macquarie Road.

» The rest park and commercial premises to the west appear to provide a single land ownership capable of accommodating a two-way road way with appropriate pedestrian provision.

» An appropriate intersection with the Macquarie Road /Ferguson Rd intersection would need to be provided. Traffic signals or a small roundabout would seem appropriate intersection controls subject to design feasibility, operational and safety considerations.

» The provision of this road link could assist in a redistribution of usage between the Great Western Highway/Ferguson Road intersection and the Hawkesbury Road/Macquarie Road intersection for vehicles using the Great western Highway.

5.3 Option 3 - No new road link

GHD comments include:

» Essentially a do nothing option.

» Current vehicular access routes to the Southern Car Park would continue to be via Raymond Road and Springwood Lane.

» This route could be reinforced through an appropriate parking signage strategy.

6 Other Transport Considerations

6.1 Potential Off-Site Improvement Works

The current peak hour operation of the Hawkesbury Road/Macquarie Road intersection is characterized by significant traffic queues and vehicle delays at the intersection. Treatment for pedestrian and cyclists is unsatisfactory.

In recognition the RTA have investigated potential improvements to the intersection. An option for conversion of the intersection to traffic signal control has been identified. However, it is understood that no funding mechanism to implement the proposal has been identified.

As Road authority the RTA will expect that a traffic impact assessment (TIA) will be undertaken in support of the proposed redevelopment. The TIA will be expected to examine the potential traffic increases on the local and state road network. If the potential traffic increases result in unacceptable level of intersection operation the applicant will need to provide mitigating measures.

In this instance traffic flows increases resulting from the redevelopment of the Springwood sites would impact upon the operation of the Hawkesbury Road/Macquarie Road intersection. The RTA are likely to seek financial contributions in accordance with the identified traffic impacts.

6.2 Delivery Vehicles Access

Supermarket operators will want flexibility in the ability of any site to accommodate the type and size of delivery vehicles upon which their business depends. Larger supermarkets operators may require rear development access by 19m semi-trailer vehicles. Accordingly the road network which provides access to the site should be of sufficient dimensions to accommodate the geometric requirements of such large vehicles. However where site constraints do not permit such movements operators will often consider smaller vehicle movements although this may place limitations upon their operations and potentially rental/land values may reduce to reflect this.

It is noted that for the Northern Car Park site the rear access lane (Greenway Street) is approximately 6m wide. Any TIA would need to examine the suitability of this route for large vehicle access.

6.3 Benefits of David Road East Link Road

Previous advice considered that there would be limited traffic circulation benefits in the provision of the link road between David Road East and David Road. However, now that the likely scale of the redevelopment potential of the sites is becoming more apparent BMCC have requested that the provision of the David Road East Link Road be reassessed.

Obviously there is still some fluidity on the development proposal and how best to accommodate the parking demands of new development. However if the main parking focus within the town centre becomes the Southern Car Park, with little parking provided on the Northern Car Park site, and additional car parking provided on the Civic Centre site there could potentially be a significant intensification in vehicle demands along Springwood Avenue.

Of key relevance to the provision of the Link Road is the likely origin / destination of trips which would use the parking facilities and the likely resultant operational and safety performance of the existing road network under the additional traffic demands both with and without the link road.

The link Road would be attractive to drivers with origins / destination in the east. The Hill PDA stage 1 economic advice identified primary trade area (PTA), east secondary trade area (ESTA) and west secondary trade area (WSTA).

The significant majority of population within the PTA are located to the north and west. There would be little benefit, and hence use, of the link road.

The link road route is considered to be attractive only to those in the ESTA.

The economic advice forecasts that Springwood would have the potential to capture only 10% of the ESTA but 20% of the WSTA supermarket expenditure. On this basis it would seem that the significant majority of additional trips are likely to come from the west and for which there would be no benefit provided by the creation of the link road.

However it is considered outside of the scope of this advice to provide any more detailed quantification of the likely link road benefits. Retail and traffic impact assessments would provide a greater understanding of the likely road network benefits of the provision of such a link. These documents will be required for

the development application. It may be possible to assess the likely impacts in the provision of the link road as an option within the traffic impact assessment work for redevelopment.