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The Chairman and Councillors
Infrastructure Committee

TRANSPORT OPTIONS FOR THE WAIMEA ROAD CORRIDOR

1. Reason for report

1.1. To receive the Waimea Road traffic simulation model and from the model options determine an approach for managing traffic on Waimea Road.

2. Background

2.1. The Waimea Road model was commissioned to find the best way to reduce bus delays in the am and pm peaks as part of the proposed passenger transport improvements that were being considered with the Regional Land Transport Strategy. In doing so it was recognised that two intersections along the route ranked first and sixth according to the social cost of crashes at intersections in the city (refer Report 790201). It was also recognised that Target ED1 in the Regional Land Transport Strategy states: "*Reduce average peak hour travel delays by 10% by 2018 from values recorded in 2008*".

2.2. The New Zealand Transport Agency contributed 75% towards the model which was developed by BasePlus Ltd, who were subsequently bought by Aurecon Ltd. The model ties into Council's existing CBD model along Rutherford Street and extends to the State Highways Beatson Road roundabout.

2.3. Future scenarios have not been modelled as data to do this comes from the Nelson North to Brightwater Corridor Study model which is currently being updated. On completion of this update, future scenarios will be run and the outputs will feed into the Arterial Traffic Study.

3. Model options

3.1. The model options reports are provided in Attachment 1 (RAD 798279 & 798280). As part of the presentation of this report Aurecon Ltd. will be presenting a graphical representation of the model options. The first phase of the model options was to determine the optimum roading configuration for the route and the second phase was to determine how best to facilitate bus priority along the route.

3.2. Phase A of the modelling options assessed a combination of scenarios for intersection treatments at Motueka Street and Market Road/ Boundary Road and for removal of the pedestrian lights at Hampden Street. While developing the model it was found that providing traffic lights at the two main intersections would increase traffic delays dramatically unless two through lanes were provided at

Market Road and two lanes southbound were provided at Motueka Street. By installing traffic lights at the intersections uncertainty over vehicles accessing and crossing Waimea Road are removed, therefore safety is increased. The modelling also showed that intersection delays were generally improved by the introduction of traffic lights. In brief Phase A showed safety and congestion is improved by installing traffic lights at Motueka Street (in the pm peak) and Market Road/ Boundary Road (in the am peak) and by removal of the pedestrian lights at Hampden Street (in the 3pm inter-peak). This outcome supported further investigation of these options in combination with the enhanced passenger transport services proposed at that time, and with the option of providing priority bus lanes.

3.3. Between Phase A and B detailed measurements and lane layouts were carried out to ensure the additional bus lanes were feasible. At this time it was found that the modelled cross roads alignment of Gardiner Place (an extension of Market Road, between the service station and the bowling green) was out of alignment with Boundary Road. This meant a fully controlled intersection was not feasible as it would have to be staggered and the double lane approaches would have to be shortened. An alternative intersection design, restricting traffic at Boundary Road to left in/left out only was proposed. It is suggested that the geometry at this intersection is investigated and modelled further.

3.4. On completion of Phase A it was decided to proceed with modified options 4 and 7. Options 1, 3 and 6 were not considered acceptable because Motueka Street east is the main outlet onto Waimea Road for Campbell Street traffic. Option 2 was ruled out because there was clear travel time benefits of having both Motueka Street and Market Road controlled, as opposed to just Motueka Street, and because the level of service of the Market Road exit shows significant improvement by signalisation. The hazards to users of this exit have been highlighted by residents in this area for a number of years.

3.5. Phase B modelling showed that by installing traffic lights at Motueka Street and Market Road travel time savings in the am peak are around one minute and in the pm peak around four minutes, irrespective of if pedestrian lights at Hampden Street are removed, and additional savings of 3 minutes are available in the 3pm interpeak if the pedestrian lights are removed. Intersection levels of service are improved with the installation of traffic lights. The modelling also determined that bus lanes did not provide any significant overall improvement to bus journey times, provided signals are installed at Motueka Street and Market Road.

3.6. The outcome of the modelling contradicts the view that has been highlighted in previous discussions regarding congestion on Waimea Road – that the am and pm peak congestion is caused by the Hampden Street pedestrian lights. Option 5 of Phase A shows that removal of these lights makes little or no difference in the am and pm peaks, although there are improvements in the 3pm interpeak when the lights are used more frequently. As capacity on Waimea Road and Van Diemen Street grows it may be that this intersection requires traffic lights at some time in the future and it is suggested that a review of this intersection is looked at in more depth at that time.

3.7. The effect of improving the intersections along Waimea Road will improve pedestrian's ability to cross at the traffic lights, although it is unlikely to improve pedestrian or vehicular access mid block. The intersection improvements, by

increasing the number of traffic lanes, may mean that adjacent residences will not be able to right turn out of their properties at peak times.

3.8. The intersection improvements will increase the vehicular capacity of the arterial which conversely may have some impact on the parallel state highway, and also may be important when assessing the impacts of potential development in the Enner Glynn and Poormans Valleys.

3.9. Any increased capacity on Waimea Road and The Ridgeway is likely to put greater pressure on improving that intersection, even though its safety hazards are more perceived than evidenced by crash statistics at this time. Initial thinking to improve this intersection has been around reversing the traffic flow on Chings Road to reduce the turning conflict at The Ridgeway intersection. In light of the outcome of the Waimea Road modelling, and taking into consideration the completion of the Ridgeway link and potential future developments upstream of The Ridgeway intersection it may be that this thinking is incorrect, in which case the funding provided in the Community Plan for this intersection may require some adjustment.

3.10. The intersection improvements, in reducing congestion along Waimea Road, may shift some congestion onto the Beatson Road roundabout which is part of the State highway network.

4. Consultation

4.1. There has been no consultation on the model. Consultation on individual projects will be undertaken with residents adjacent to the intersections. Information about the proposals will be made available through Live Nelson.

5. Funding

5.1. In anticipation of the model outcome the 2009-19 Community Plan has allocated funding to relevant projects as shown in Table 1 below.

Project	**Investigation & design**		**Construction**	
	Year	**Value ($)**	**Year**	**Value ($)**
Waimea / Ridgeway Intersection	09/10	20,000	11/12	300,000
Waimea / Motueka Intersection	09/10	65,000	10/11	750,000
Waimea / Market / Boundary Intersection	12/13	75,000	14/15	750,000
Waimea / Van Diemen Intersection	14/15	60,000	16/17	600,000
Waimea bus priority	10/11	15,000	11/12	285,000
Beatson - Waimea to Wakatu bus priority	10/11	5,000	11/12	115,000

Table 1. Waimea Road projects from the 2009-19 Community Plan

6. Significance of Decision

6.1. The decision is not significant in terms of Council's significance policy but it is significant to most residents of Nelson as it is one of the two key transport linkages to the south of the city.

6.2. The decision is significant to residents along Waimea Road as it has the potential to increase the vehicular capacity of this arterial.

7. Relevant Council policies

7.1. The Regional Land Transport Strategy specifically targets improvements in safety and reductions in congestion, although some may consider that by reducing congestion and increasing vehicular capacity, incentives for modal shift to more sustainable forms of transport are reduced.

8. Options

8.1. Option 1

- proceed with the design for Waimea Road / Motueka Street traffic lights as scheduled in the 2009-19 Community Plan
- bring forward the Waimea / Market / Boundary traffic lights design to commence in 09/10 with a view to investigating the intersection alignment further and carrying out further modelling refinements as necessary
- bring forward the Waimea / Market / Boundary traffic lights installation to 2010/11 (subject to successful modelling and design)
- delete the Waimea Road bus priority project and consider the Beatson Road bus priority improvements when a subsidised Nelson to Richmond bus service has funding approved

(i) Advantages

- Improves intersection safety, reduces congestion along Waimea Road (particularly in the pm peak), and improves the performance of the intersections
- Increases the vehicular capacity of the arterial road

(ii) Disadvantages

- Will not improve Waimea Road travel times in the 3pm interpeak
- Will increase journey distance for those travelling from the Kawai Street south and Boundary Road area wanting to access Waimea Road southbound (although this requires further investigation)

8.2. Option 2 – Do nothing

(i) Advantages

- Will naturally limit the capacity of the arterial routes and spread the time that the route is congested in the peaks thereby encouraging commuters to transfer to more sustainable forms of transport
- Will not increase travel distances for residents from the Kawai Street south and Boundary Road area wishing to access Waimea Road southbound

(ii) Disadvantages

- Will not improve intersection safety, reduce congestion along Waimea Road (particularly in the pm peak), or improve the performance of the intersections.

9. Staff recommendation

9.1. Option 1 – That Council bring forward the Waimea / Market / Boundary traffic lights design to commence in 09/10 with a view to investigating the intersection alignment further and carrying out further modelling refinements as necessary, bring forward the Waimea / Market / Boundary traffic lights installation to 2010/11 (subject to successful modelling and design), and delete the Waimea Road bus priority project and consider the Beatson Road bus priority improvements when a subsidised Nelson to Richmond bus service has funding approved.

10. Recommendation

***THAT** Council bring forward the Waimea / Market / Boundary traffic lights design to commence in 09/10 with a view to investigating the intersection alignment further and carrying out further modelling refinements as necessary,*

***THAT** Council bring forward the Waimea / Market / Boundary traffic lights installation to 2010/11 (subject to successful modelling and design),*

***AND THAT** Council delete the Waimea Road bus priority project and consider the Beatson Road bus priority improvements when a subsidised Nelson to Richmond bus service has funding approved.*

Keith Marshall
Chief Executive
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