

## 11. AVONSIDE DRIVE/FITZGERALD AVENUE/KILMORE STREET INTERSECTION IMPROVEMENTS

<b>Officer responsible</b> Transport and City Streets Manager	<b>Author</b> Lee Kelly, Capital Programme Consultation Leader, DDI 941-8355
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The purpose of this report is to seek the support of the Committee to implement the improvements to the Avonside Drive/Fitzgerald Avenue/Kilmore Street intersection.

The improvements include the earthquake strengthening of the Fitzgerald Avenue Bridge over the Avon River, traffic safety works, maintenance of transport capacity and the addition of cycle lanes on the intersection approaches and departures.

It is also proposed to install cycle lanes on Kilmore Street from Fitzgerald Avenue to Dawson Street.

It is proposed to instigate an 'inform' consultation process only for this project (consultation plan attached). The aim of the consultation is to provide interested and effected groups in the community with information about the project and to ensure that due consideration is given to any concerns raised and that where possible concerns are addressed, albeit within a project that has set engineering requirements.

This report has also been submitted to the Hagley/Ferrymead Community Board for information.

### BACKGROUND

The Fitzgerald Avenue Bridges over the Avon River have been identified, through the Council's 'lifelines' project, as requiring earthquake strengthening. With budgetary funding available to implement the strengthening work the opportunity has also arisen to address transport issues at the intersection at the same time.

Fitzgerald Avenue is classified as a major arterial route and part of the inner orbital route of avenues and the CBD. Both Avonside Drive and Kilmore Street are minor arterials feeding traffic to and from the central City.

The intersection currently carries approximately 38,000 vehicles per day throughput and is an important part of the roading network in the City. Traffic flows through the intersection have been growing consistently at around 2% per annum of current flows.

In the five years between 1998 and 2002 38 crashes have been reported at this intersection in the Land Transport Safety Authority crash database. Of the crashes 33 were non-injury, four resulted in minor injuries and one crash resulted in a serious injury. The 38 reported crashes underestimate the actual number of crashes which could be in the order of 260 crashes over the last five year period (under reporting rates are 7.5 for non-injury, 2.5 for minor and 1.6 for serious crashes).

The reported crashes predominately involve right turning vehicles ie 13 crashes from Fitzgerald Avenue into Avonside Drive and 11 crashes from Fitzgerald Avenue north right turning into Kilmore Street. The remaining 14 crashes are of a random nature and don't follow any particular pattern.

The main causal factor in motorists misreading the intersection is that the right turners on both Fitzgerald approaches do not have sufficient visibility of oncoming traffic to safely execute the existing 'filter' right turn movement.

### AIMS AND OBJECTIVES OF THE SAFETY IMPROVEMENTS

- Improved bridge safety through earthquake strengthening.
- Increased road safety through a reduction in the number of vehicle crashes.
- Improved safety and level of service for cyclists.
- Improved pedestrian safety.
- Planning for future traffic growth.
- Maintaining public transport levels of service.
- Maintaining, where possible, on-street parking.

### THE PROPOSED IMPROVEMENTS

Investigations and research undertaken by staff of the intersection have identified the improvements necessary to achieve these objectives. These are:

### **Fitzgerald Avenue - Northern Approach**

A 'clip on' to the existing bridge to enable a separate left turn traffic lane and cycle lane to be provided. A realigned separate right turn lane with a 'filter' turn is proposed by adding a median island on the western side of the existing bridge.

### **Fitzgerald Avenue - Northern Departure**

A cycle lane would be added and a 'cut down' in the median provided for pedestrians crossing Fitzgerald Avenue opposite River Road. A 'U'-turn facility will be added for vehicles wanting to access River Road.

### **Fitzgerald Avenue - Southern Approach**

It is proposed to install a cycle lane, a separate left turn traffic lane and a protected right turn signal phase for motorists turning into Avonside Drive.

### **Fitzgerald Avenue - Southern Departure**

It is proposed to install a cycle lane. The three existing traffic lanes will be maintained.

### **Avonside Drive - Eastern Approach**

It is proposed to add a cycle lane and specifically mark the kerbside lane for left turning vehicles.

### **Avonside Drive - Eastern Departure**

It is proposed to formalise the cycle lane by installing cycle symbols.

### **Kilmore Street - Western Approach**

It is proposed to install a cycle lane on Kilmore Street from Dawson Street to the intersection.

### **Kilmore Street - Western Departure**

It is proposed to install a cycle lane on Kilmore Street from the intersection to Dawson Street. This will require the removal of the existing on street parks immediately adjacent to three businesses, namely Pomeroy's OBJ, Metro floors and Givenchy's.

### **Improved Bridge Safety through Earthquake Strengthening**

The Fitzgerald Avenue twin bridges have been assessed as susceptible to a moderate seismic event. They need to be strengthened.

Some work has already been carried out to tie the deck to the substructure. Further work needs to be done to overcome the threat from liquefaction and bilateral spreading. No particular method for doing this has been established, however, the benefit of maintaining these key bridges has been assessed at well over \$1,000,000. Additional investigation work will be undertaken in conjunction with the proposed traffic improvements.

### **Increased Traffic Safety**

The proposed safety improvements provides a protected right turn signal phase for motorist turning right from the southern Fitzgerald approach. This will address the high number of crashes associated with this movement.

On the northern Fitzgerald approach to the intersection, vehicles turning right into Kilmore Street would be catered for with a 'filtered' right turn, but supported by a major engineering realignment of the right turn traffic lane.

The realignment of the right turn lane will provide motorist with clear 'sight' lines of approaching straight through vehicles as this lane would line up with the opposing right turn lane into Avonside Drive.

## **Improved Level of Service for Cyclists**

There are no existing cycle lanes marked on the Fitzgerald Avenue legs of the intersection and only one advanced stop box on the Kilmore approach.

The proposed plan will see the installation of cycle lanes on all approaches to and departures from the intersection to improve safety for cyclists and to increase their level of service.

A 'clip on' installed on the east side of the bridge would allow for a cycle lane on the Fitzgerald north approach to the intersection as well as a separate left turn lane for traffic.

To ensure adequate road space is available for the cycle lane to be installed on the Fitzgerald south approach, some adjustment to the alignment of the kerb line adjacent to the footpath would be required. Consequently the width of the footpath in this section would be reduced, however, the footpath will retain a minimum width standard. An alternative to reducing the width of the footpath would be to set back the edge of the existing central median island but this option would require the removal of trees.

Cycle lanes would be installed on Avonside Drive on the west approach to the intersection and the cycle lane formalised on the river side of Avonside Drive.

Cycle lanes will have a red asphalt surface at specific potential conflict points and each cycle lane will have an advanced stop box in front of the vehicle limit lines at the intersection.

## **Improved Pedestrian Facilities**

There are existing signalised pedestrian crossings on all four legs of the intersection and these will be retained albeit with a minor alteration to the crossing on the south side of the intersection.

The front edge of the centre median island where currently a 'cut down' is provided to allow pedestrians to cross over Fitzgerald Avenue from Kilmore Street to Avonside Drive will be removed. Pedestrians will now cross in front of the median island rather than through it. The rationale for this change is that the removal of the 'cut-down' more clearly indicates to motorists that the crossing is one crossing rather than two separate ones and motorists must give way to all pedestrians on any section of the crossing.

The realignment of the right turn lane, on the south approach, would see a median island, including a pedestrian 'cut-down', for pedestrians exiting River Road, installed on the south approach to the intersection so that the turning lane could be positioned on the west side of the existing river bridge.

## **Maintaining Current Traffic Capacity While Ensuring Room for Future Growth**

The Canterbury Regional Land Transport Strategy 2002 defines Avonside Drive, Fitzgerald Avenue and Kilmore Street as part of the Christchurch arterial network, and recommends a maximum level of service up to, but not exceeding capacity, (LOS E). With the removal of the state highway through the CBD, Fitzgerald Avenue is likely to become part of the strategic network in the future with a maximum recommended level of service (LOS D) which is approximately 90% of capacity.

Traffic modelling indicates that the existing intersection layout and phasing will exceed capacity, or LOS E, in the design critical morning peak in 2010 and in 2021 in the evening peak. If protected right turn phases were provided with the existing intersection configuration for safety reasons alone, capacity would be exceeded as early as 2007 and 2015 respectively.

The proposed changes will provide the same level of service as the existing intersection layout, but with the additional safety for right turning vehicles. That is, capacity will not be exceeded until approximately 2013 in the morning peak and 2021 in the evening peak.

During the morning peak there are only 45 vehicles turning right from Fitzgerald south into Avonside Drive. If, in around 2013, this movement is banned in the morning peak and the 45 vehicles either use the 'U'-turn bay or another street in the vicinity to turn right, then the intersection will operate below capacity through to 2021.

## **Maintaining Local Street Accessibility**

Left turn movements into and out of River Road would be maintained, however, to accommodate the proposed right turn lane and the pedestrian crossing on the northern approach, the existing right turn movement from River Road into Fitzgerald Avenue will be banned. The right turn in would be available via the 'U'-turn bay proposed to be located just north of the River Road/Fitzgerald Avenue intersection. North bound travel for River Road traffic will still be available via Harvey Terrace; or Stanmore Road; or along Kilmore Street to Madras Street.

## **Public Transport Objective**

The proposed improvement to intersection capacity would maintain the same level of service currently provided to the No. 70 Queenspark and No. 48 Kainga services that travel along Fitzgerald Avenue.

## **Parking Objective**

It is proposed to maintain as much on-street parking as possible. However, for safety reasons the existing on-street parking adjacent to the three businesses on the south side of Kilmore Street just west of the intersection will need to be removed. There is some flexibility, however, to provide a section of time limited parking, specifically for these businesses, immediately west of the proposed 'no stopping' area.

## **Environment**

The proposed bridge strengthening work will be undertaken with due consideration to the flora and fauna under and around the bridge and staff who have a speciality in this area will be consulted and involved with the process.

The adjustment to the front edge of the central median island to improve pedestrian safety will require the removal of two trees. The Council's arborist has inspected the trees within the central island and has advised that the two trees affected adjacent to the front edge, one is diseased and should be removed and the other is young enough to be transplanted elsewhere.

## **Consultation**

The consultation thus far has proceeded in accordance with the consultation plan attached. The 'inform' stage of the consultation process will also follow the plan.

Essentially, three businesses on the south side of Kilmore Street, just west of the intersection have been identified as being disadvantaged by the proposal. This is because currently these businesses have on-street parking adjacent to their premises and the proposed plan will require the removal of these parks. However, to mitigate this it is proposed to install time restricted parking, specifically for these businesses, immediately west of the proposed no stopping area. In addition, the existing on-street parking opposite them on the north side of Kilmore Street, will be retained.

On site visits have been made to the business owners/operators and the proposed 'no stopping' restriction discussed with them.

While, the businesses would prefer to maintain the on-street parks directly outside, they have acknowledged that they do have some parking available off-street and along with the possibility of time restricted parking, and, the retention of the on-street parks opposite their businesses, the owners of the Carpet Store and Harrington's Boutique Brewery are reasonably comfortable with the proposal.

## **BUDGET**

A total of \$1,077,927 is available over the 2004/05 and the 2005/06 financial years for this project.

## **CONCLUSION**

The proposed bridge strengthening work along with the traffic safety improvements at the intersection and beyond will ensure that a significant City asset will be protected and enhanced as well as improving safety for all road users and ensuring that capacity through the intersection is assured through to 2021.

While the proposed work may take several months to complete it is anticipated that any major disruption to road users could be contained within a one month period. At this stage the proposed work could start as early as June 2005.

Attached to this report is a copy of the proposed 'inform' consultation plan for this project.

**Staff**

**Recommendation:**

1. That the Sustainable Transport and Utilities Committee recommend to Council the implementation of the improvements to the Avonside Drive/Fitzgerald Avenue/Kilmore Street intersection.
2. That the Council revoke all the existing 'no stopping' restrictions in relation to the Fitzgerald Avenue/Kilmore Street intersection.
3. That the Council prohibit the parking of vehicles at any time in the following areas:
  - (a) On the north side of Kilmore Street commencing at its intersection with Fitzgerald Avenue and extending in a westerly direction for a distance of 29 metres.
  - (b) On the north side of Kilmore Street commencing at its intersection with Oxford Terrace and extending in a westerly direction for a distance of 13 metres.
  - (c) On the south side of Kilmore Street commencing at its intersection with Fitzgerald Avenue and extending in a westerly direction for a distance on 38 metres.
  - (d) On the west side of Fitzgerald Avenue commencing at its intersection with Kilmore Street and extending in a southerly direction for a distance of 63 metres.
  - (e) On the east side of Fitzgerald Avenue commencing at its intersection with Avonside Drive and extending in a southerly direction for a distance of 18 metres.
  - (f) On the east side of Fitzgerald Avenue commencing at its intersection with River Road and extending in a southerly direction for a distance of 40 metres.
  - (g) On the south side of River Road commencing at its intersection with Fitzgerald Avenue and extending in an easterly direction for a distance of 20 metres.
  - (h) On the north side of River Road commencing at its intersection with Fitzgerald Avenue and extending in an easterly direction for a distance of 22 metres.
  - (i) On the east side of Fitzgerald Avenue commencing at its intersection with River Road and extending in a northerly direction for a distance of 38 metres.
  - (j) On the west side of Fitzgerald Avenue commencing at its intersection with Kilmore Street and extending in a northerly direction for a distance of 56 metres.
  - (k) On the north side of Kilmore Street commencing at its intersection with Fitzgerald Avenue and extending in a westerly direction for a distance of 29 metres.
  - (l) On the east side of Oxford Terrace commencing at its intersection with Kilmore Street and extending in a northerly direction for a distance of 18 metres.

- (m) On the west side of Oxford Terrace commencing at its intersection with Kilmore Street and extending in a northerly direction for a distance of 20 metres.

**Chairman's**

**Recommendation:** That the above recommendation be adopted.