

## Appendix 5 – Option Development - Key

### **1960s-1970's full motorway (including tunnelling)**

While these early full motorway options are not readily available. It is known that such proposals, which included tunnelling through Lookout Point were considered sometime in the 1960's – 1970's. Such proposals did not form part of the scheme assessment development in more recent years, as it was clear that the cost and need could not justify a work of this scale. This view has been validated through the more recent scheme developments, where the concept of a motorway option (even without tunnelling through Lookout Point) could not be justified in terms of cost, need and affordability.

### **Option 1 and 2**

Options 1 and 2 were developed as part of the "2007 Transit New Zealand SH 1 Caversham Four Laning I&R Phase Stage 1 Scoping Report" and were described as follows:

#### ***Option 1 – A 'Partial Route' Improvement Option*** which includes:

- Four laning the existing bypass from King Edward Street Overpass to the existing traffic light controlled intersection at Barnes Drive;
- Widening the existing section of Caversham Valley Road between Barnes Drive and Lookout Point to provide a 3.5m parking lane along the eastern side of Caversham Valley Road, four 3.5m wide traffic lanes and a 2.5m wide flush median over the majority of the length.

The expected operating speed for the partial route improvement option is 80km/h for the Caversham Bypass Section (Andersons Bay Road to Barnes Drive) and 60km/h for the Caversham Valley Section (Barnes Drive through Lookout Point).

#### ***Option 2 - The 'Full Project'*** which includes:

- Four laning the existing bypass from King Edward Street Overpass to the Goodall Street footbridge;
- Grade separation of the Barnes Drive intersection to remove the traffic light controlled intersection;
- Widening the existing section of Caversham Valley Road between Burnett Street and Lookout Point and separating motorway and local traffic by means of a service lane(s) along the eastern side of Caversham Valley Road;
- Improving the vertical curvature of the crest curve at Lookout Point to achieve Safe Stopping Sight Distance < 75km/h and providing a link between Mornington and South Roads via a motorway underpass.

The expected operating speed for Option 2 was 80km/h.

**Option 3:** was developed from Option 2 as a result of a series of ideas raised at the DCC/ NZTA workshop (including road –user representatives) as an option mid-way between Option 1 and option 2. It optimised the lower cost of option 1 with the higher functionality of option 2. The premise was to determine a scheme from the perspective of a safe and functional urban arterial; as opposed to pursuing a scheme based akin to a motorway, for which the cost and need of such could not be justified. From these ideas option 3a and 3b were developed that were further assessed in the NZTA's "2009 Interim Scheme Assessment."

**Option 3a involved:**

- All the features for the four laning between Andersons Bay Road and Barnes Drive;
- Widening Caversham Valley Road by filling over the old railway tunnel entrance in a manner that allows its continued use as a services conduit and its future potential use as a cycling route.
- Modifying Barnes Drive intersection to provide a dedicated left turn lane to Barnes Drive and extending the stacking length of the right turn bay for traffic turning into Caversham.
- Providing a 5m wide parking shoulder between Burnett Street and Lookout Point for the properties fronting the uphill lanes on Caversham Valley Road. This will allow those residents room to park and manoeuvre clear of the through traffic lanes.
- Constructing four 3.5m traffic lanes (increased from the current 3 - 3.2m lanes) separated with a kerbed median but without a median barrier.
- Constructing a 2.5m sealed shoulder on the downhill lanes to provide for breakdowns. Currently there is no shoulder provision.
- Increasing the radius of the curve at Aberfeldy Street from 120m to 275m
- Constructing a bridge over Caversham Valley Road to link Mornington and Riselaw Roads thereby improving connectivity between suburban areas
- Linking South Road to the proposed bridge by passing under the bridge before looping around to join the new Mornington Road alignment
- Modifying Burnett Street to allow left-turn out only movements
- Retaining left-turn in and left-turn out movements at Aberfeldy Street
- Short Street access to the highway will be closed and the link between the fire station and Short Street re-established (for fire service use only)
- No access from Mornington Road, or Riselaw Rd, to the highway will not be physically possible

The inclusion of a south facing connection from South Road and to Mornington Road also remained in doubt for this option as the design effort at that time had been unable to demonstrate satisfactory key safety design criteria (particularly in regard to access to Mornington Road)

**Option 3b involved:**

The primary differences between Options 3b and 3a is at the lower end of the valley where the widening occurs along the eastern side of the existing highway to avoid interacting with the old rail tunnel. This would require the removal of 19 houses on the uphill side of Caversham Valley Road between Burnett Street and just beyond the Blue Stone wall.

## Option 4a

Option 4a represents the 'least change' option but still results in a significant improvement in safety and amenity. As with Option 3b, this option similarly avoids interaction with the old rail tunnel: its cross section standards are simpler than the previous options and as such it retains a higher level of direct property and side road access. There is no highway underpass at Lookout Point although it can include a grade separated pedestrian link across the highway at this location. In more detail this is described as:

- Widening Caversham Valley Road by removing 22 houses on the uphill side of Caversham Valley Road between Burnett Street and just beyond the Blue Stone wall and widening the highway through those properties thereby avoiding the old rail tunnel (As for Option 3b)
- Modifying Barnes Drive intersection to provide a dedicated left turn lane to Barnes Drive and extending the stacking length of the right turn bay for traffic turning into Caversham.
- Maintaining the existing layout between Barnes Drive and Burnett Street but with minor modifications
- Providing 4 x 3.5m traffic lanes without median separation between Burnett Street and Aberfeldy Street
- Providing 4 x 3.5m traffic lanes with a 3m flush median between Aberfeldy Street and Lookout Point
- Providing a 3m footpath and 2.5m sealed shoulder on the uphill side of Caversham Valley Road between Burnett Street and Aberfeldy Street
- Providing a 4m shoulder (2.2m parking, 1.8m shoulder) between Aberfeldy street and Lookout Point for the properties fronting Caversham Valley Road
- Providing a 2.1m shoulder on the downhill side between Barnes Drive and Lookout Point
- Aberfeldy Street to retain left turn in and left turn out movements including seagull island treatment
- Existing downhill footpath will be retained between Barnes Drive and Aberfeldy Street
- Providing a downhill footpath from Aberfeldy Street to the DCC reserve only
- Maintaining the at-grade intersection layout at Lookout Point but prohibiting right turn movements from South Road and Mornington Road

## Option 4b

Option 4b attempts to closely match Option 4a but with the inclusion of a highway underpass in a similar manner to that of Options 3a and 3b.

### **Option A, B and C**

The titles Option A, B and C were used for the options brought forward for public consultation to simplify the options for the public.

Option A and B are the two bridge options that resulted from Option 3b.

Option C is Option 4a.

### **Base Option:**

The base option is the preferred bridge option and plus any enhancements resulting from ongoing consultation will become the subject of the outline plan.