



14 September 2007

Hussam Abdul-Rassol  
Transport Planning and Design Manager  
Waitakere City Council  
6 Henderson Valley Road  
Henderson  
Waitakere City

Dear Hussam

## **PROGRESS REPORT OF SIGNAGE ON PIHA ROAD, HUIA ROAD AND SCENIC DRIVE**

### **Introduction & Background**

In April 2007 Traffic Engineering Solutions (TES) presented a report to Waitakere City Council that reviewed signage on Piha Road, Huia Road and Scenic Drive. This followed some concerns expressed by the Waitakere Community Board regarding a perceived proliferation of chevron signboards.

Apart from a relatively small number of misleading or otherwise inappropriate signs, it was found that the number of signs appeared to be justifiable on the basis of reported crashes on these routes. Accident data to date does appear to indicate that some crash savings are being achieved since their introduction, which was the intention of their installation.

Following a meeting with Community Board representatives it was requested to:

- a) Review advisory curve speeds on bends, as it was perceived some were erroneous.
- b) Investigate the feasibility of reducing the number of chevron signs, and also the use of a less-reflective type due to a perceived glare problem.
- c) Review signage for the Slow Vehicle Bays on Piha Road.

### **Curve Speed Survey**

All existing curve advisory signs were re-tested on the basis of a side-thrust gauge survey as outlined in Appendix 3 of the Manual of Traffic Signs and Markings (MOTSAM). These tests showed the following:

- Seven of the 17 advisory speed signs on Piha Road are posted with a speed value too high, and 3 too low. One of these signs has a disparity greater than 10 kph.

- Eleven of the 36 advisory speed signs on Huia Road are posted with a speed value too high, and one too low. One of these signs has a disparity greater than 10 kph.
- Twelve of the 106 advisory speed signs on Scenic Drive are posted with a speed value too high, and 19 too low. Eight of these signs have a disparity greater than 10 kph.

Signs posted with values lower than specified, whilst still delivering a cautionary message at the site, can overall diminish the credibility of the signs. Drivers can then be caught unawares at other sites where the value is more realistic.

Signs posted with values too high can compromise the safety of the sites, particularly for those where the posted speed is in excess of what is comfortable for that curve.

It is recommended that the above signage (at a total of 53 curves) be revised to the values as measured by the survey undertaken by TES. In addition, a total of 32 signs (one on Huia Road and the remainder on Scenic Drive), are posted with speeds rounded to the nearest 10kph (eg '60') rather than the MOTSAM specified 5 kph (eg '55'). Though not a significant safety issue, this would be an opportune time to revise these also.

#### **Number of Chevron Signs and Glare at Night**

Chevron signs need to be aligned so that they do not directly reflect car headlights back at the driver, and if this not done properly then glare issues can result. In addition, a less reflective sign material can be used (engineering grade as opposed to the most recently installed high intensity grade) that will reduce glare (and hence visibility of the sign). However a drive-through at night was undertaken for all three routes and it was found that there is no substantial glare problem that warrants any changes. In addition during foggy conditions (that are well known to occur in the Waitakere Ranges), it is expected that high intensity type will be of more benefit.

Whilst it is acknowledged that some bends do appear to have more chevron indicators than absolutely necessary, the expense to revise their arrangement is considered to be unjustified. However it has been identified that some chevron indicators may be conveniently removed without compromising delineation at several of the bends, and this can be arranged when a final site visit is undertaken with the signs contractor. In addition around six advance curve warning signs (five on Scenic Drive and one on Huia Road) are considered superfluous, and their removal can also be confirmed upon a final site visit with the signs contractor.

#### **Slow Vehicle Bays Piha Road**

Signage here is confirmed to be less than that recommended by MOTSAM for the several Slow Vehicle Bays on Piha Road. Improvements can be arranged when a final site visit is undertaken with the signs contractor.

## Recommendation

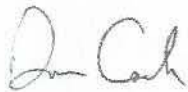
Based on the above investigations the following is recommended:

- Posted advisory speed values for bends on Piha Road, Huia Road and Scenic Drive are revised as described above.
- Some chevron indicators can be removed at several bends without compromising delineation, and several advance curve warning signs are superfluous.
- The Slow Vehicle Bays on Piha Road be provided with improved signage.

The above measures are best arranged on-site with the Waitakere City signs maintenance contractor, and it is expected this can occur in the immediate future.

If you have any questions regarding this letter, please contact the undersigned on 0800 837 583.

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30 April 2007

Hussam Abdul-Rassol  
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Waitakere City

Dear Hussam

## **REVIEW OF SIGNAGE ON PIHA ROAD, HUIA ROAD AND SCENIC DRIVE**

### **Introduction & Background**

As requested, Traffic Engineering Solutions Limited (TES) has undertaken a review of the signage on Piha Road, Huia Road and Scenic Drive. The purpose of this review was to assess the overall appropriateness of the signage, particularly curve warning signage, along the routes. The review involved two traffic engineers driving the roads to obtain an overall impression of signage along the routes. The review was not a detailed assessment of the location and appropriateness of every sign as this would require a more detailed study. Advisory speeds of curves on the roads were also not checked as part of this review.

It is understood the review was commissioned because of concerns regarding the proliferation of warning signs that are present on Piha Road, Huia Road and Scenic Drive. We understand that safety improvements were implemented on these three roads between April and June 2006, and at this time a number of additional curve warning signs were installed.

### **Crash History**

The crash history on the three roads was reviewed using the Land Transport New Zealand Crash Analysis System (CAS). The following table summarises the five year crash history (2002 to 2006) for the roads reviewed:

Road	Injury Crashes	Non-injury Crashes	Total Crashes	Wet Road Crashes	Dark Crashes	Loss of Control Crashes
Huia Road	30	51	81	53%	43%	77%
Scenic Drive	42	89	131	44%	47%	85%
Piha Road	39	67	106	50%	50%	90%