EVALUATION OF SHARED-USE MARKINGS FOR CYCLISTS IN AUCKLAND

Presented by:
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Research Objectives

- Determine whether the behavior of cyclists is influenced by the implementation of the sharrow marking.
  - Lateral positioning of cyclists.
  - Difference in Single and Group cyclists.

Analyse the video data provided by Auckland Transport to investigate behavior patterns of cyclists in a pre-marking and post-marking scenario.
What is a Sharrow?

- Short form for ‘shared lane marking arrow’.
- Consists of bicycle symbol and two chevrons.
- Creates a safer shared lane facility for cyclists in low volume, low speed environments.
Need for Sharrow

- Direct cyclists away from hazards such as open car doors.
- Increase the awareness of drivers to potential presence of a cyclist.
- Mark a route for cyclists to follow.
Study Locations

Pt. Chevalier Road
Elstree Avenue
Methodology

- Study area visit to obtain physical measurements.
- Screenshots captured from video at 2 second intervals. (Total of 130,000 screenshots)
Methodology - continued

- Digital grids created using AutoCAD with grid spacing of 0.5m. These grids were overlaid on screenshots.

- Entire process was repeated for post-marking footage.

- Analysis of Variance (ANOVA) carried out on data using Excel.
## Results

### SINGLE CYCLISTS

<table>
<thead>
<tr>
<th></th>
<th>Riddell Road</th>
<th>Elstree Avenue</th>
<th>Pt Chev Road</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weekend</td>
<td>Weekday</td>
<td>Weekend</td>
</tr>
<tr>
<td>Mean (m)</td>
<td>1.460</td>
<td>1.460</td>
<td>2.444</td>
</tr>
<tr>
<td>Diff (m)</td>
<td>1.491</td>
<td>1.900</td>
<td>2.780</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.519</td>
<td>0.615</td>
<td>0.860</td>
</tr>
</tbody>
</table>

### GROUP CYCLISTS

<table>
<thead>
<tr>
<th></th>
<th>Riddell Road</th>
<th>Elstree Avenue</th>
<th>Pt Chev Road</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weekend</td>
<td>Weekday</td>
<td>Weekend</td>
</tr>
<tr>
<td>Mean (m)</td>
<td>1.628</td>
<td>1.911</td>
<td>2.777</td>
</tr>
<tr>
<td>Diff (m)</td>
<td>1.891</td>
<td>2.153</td>
<td>3.096</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.704</td>
<td>0.865</td>
<td>0.926</td>
</tr>
</tbody>
</table>
Discussion

- General trend indicated that mean lateral positioning of single and group cyclists has moved closer to the sharrow.
- Strong evidence that the mean has moved closer to the sharrow marking for single cyclists in Riddell Road.

![Riddell Road - Single Cyclists (Weekday)](chart.png)
Discussion-continued

- Weak evidence that the mean has moved closer to the sharrow marking for group cyclists in Riddell Road and Elstree Avenue.

![Graphs showing lateral positioning for Riddell Road and Elstree Avenue group cyclists with different markings.](image)
Discussion – continued

- Standard Deviation for single cyclists has decreased after the implementation of sharrow.
- Meaning cyclists were riding in narrower distribution

![Graph of Elstree Ave - Single Cyclists (Weekday)]
Conclusion

- Sharrow markings were successful in influencing the riding behavior of cyclists.
- Elstree Avenue and Riddell Road had an increase in mean lateral positioning of the cyclists for both single and group cyclists.
- The spread of the distribution were also influenced.
Closing Statements

Acknowledgement:

- The University of Auckland
- Auckland Transport
- Flow Transportation
THANK YOU

Questions?