

# EVALUATION OF SHARED-USE MARKINGS FOR CYCLISTS IN AUCKLAND



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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 Sharrows

- 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

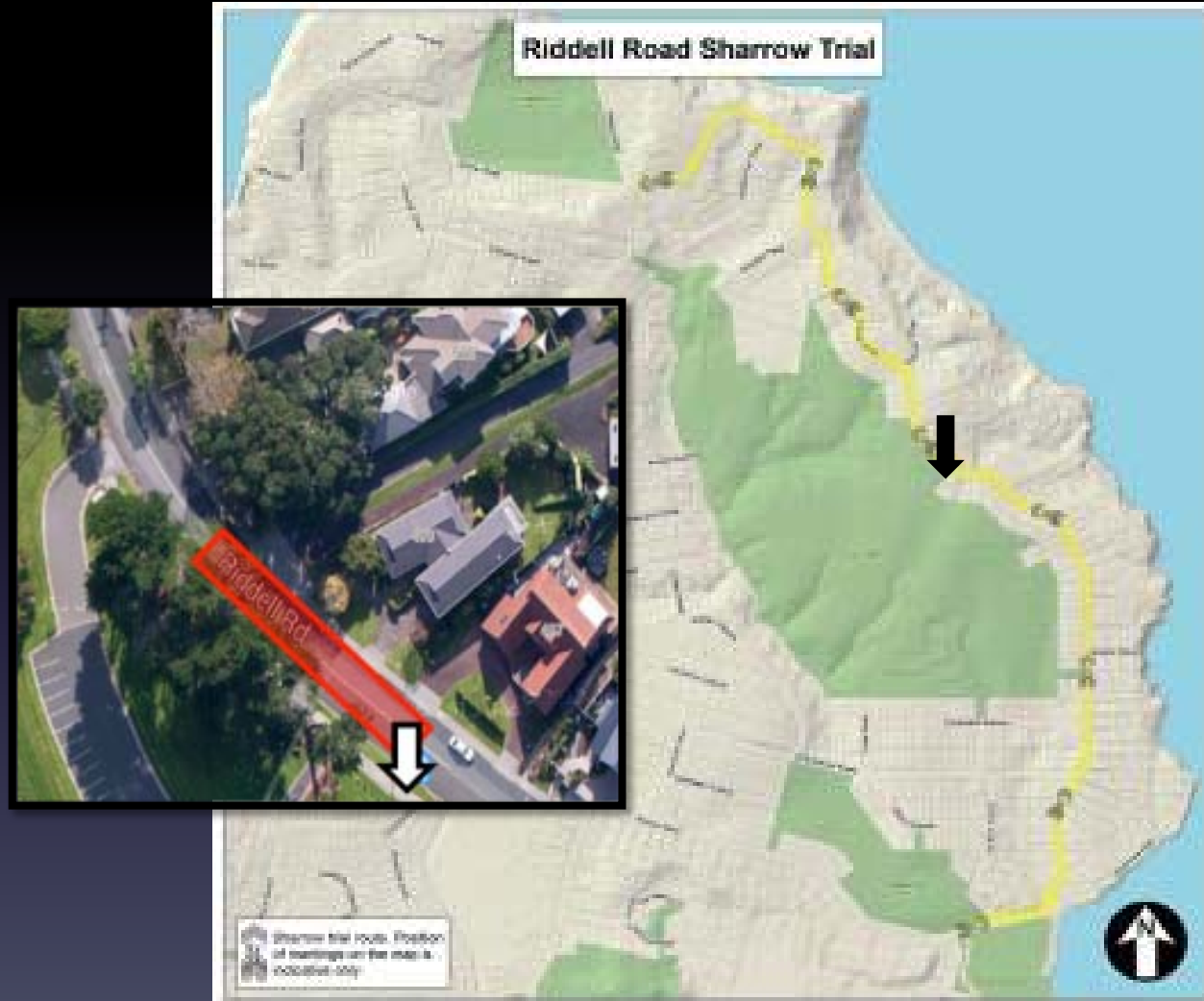


# Elstree Avenue





# Riddell Road



# 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.

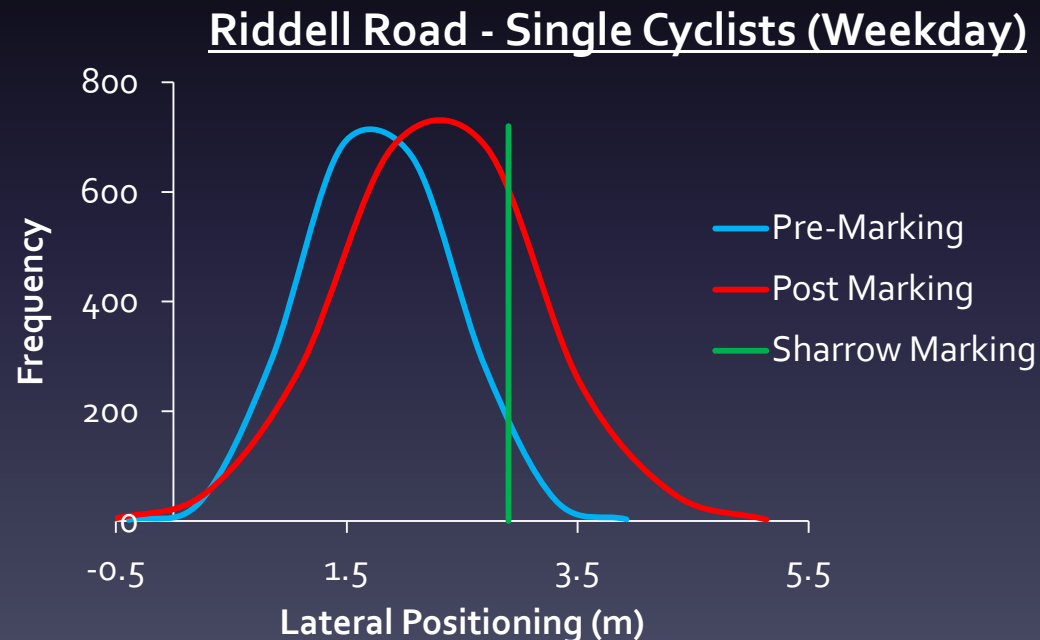
# Results

SINGLE CYCLISTS							
	Riddell Road		Elstree Avenue		Pt Chev Road		
	Weekend	Weekday	Weekend	Weekday	Weekend	Weekday	
Mean(m)	1.460	1.460	2.444	2.417	2.958	3.139	Pre
	1.491	1.900	2.780	2.250	2.905	3.214	Post
Diff (m)	-0.032	-0.440	-0.336	0.167	0.053	-0.075	
Standard	0.519	0.615	0.860	1.052	0.327	0.509	Pre
Deviation	0.603	0.809	0.734	0.530	0.472	0.366	Post

GROUP CYCLISTS							
	Riddell Road		Elstree Avenue		Pt Chev Road		
	Weekend	Weekday	Weekend	Weekday	Weekend	Weekday	
Mean (m)	1.628	1.911	2.777	2.594	3.438	N.A	Pre
	1.891	2.153	3.096	2.736	2.780	N.A	Post
Diff (m)	-0.262	-0.242	-0.319	-0.142	0.658	N.A	
Standard	0.704	0.865	0.926	0.582	0.473	N.A	Pre
Deviation	0.785	1.121	0.846	0.760	0.594	N.A	Post

# Discussion

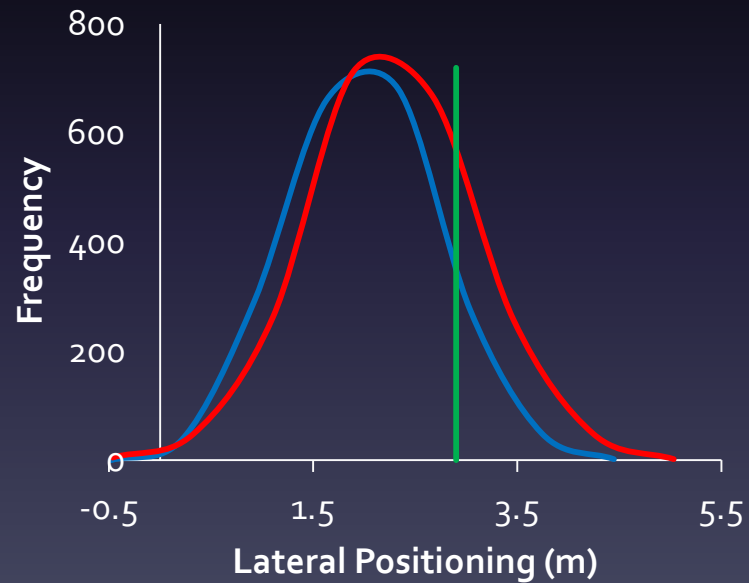
- General trend indicated that mean lateral positioning of single and group cyclists has moved closer to the sharrow.
- Strong evidence that the mean has moved closer to the sharrow marking for single cyclists in Riddell Road.



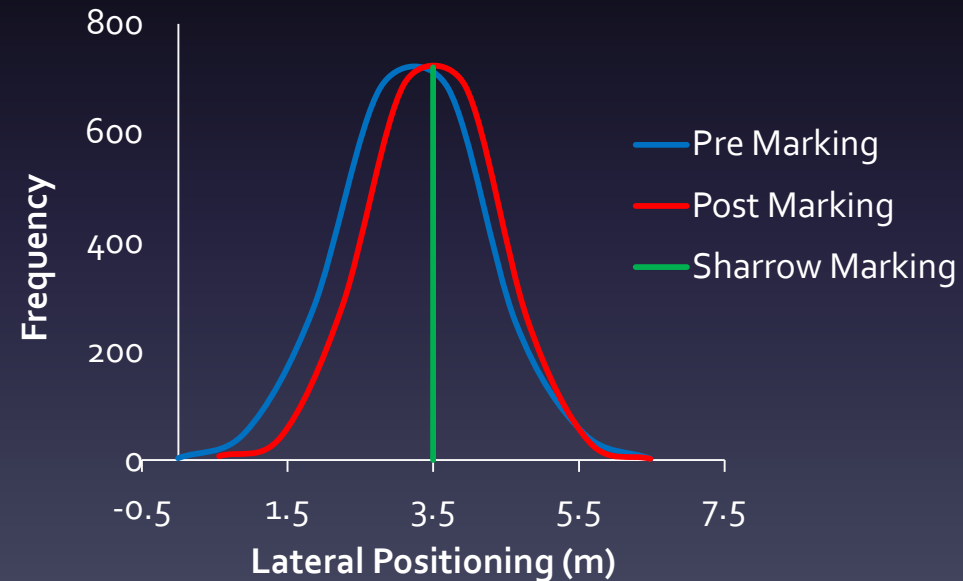
# Discussion-continued

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

Riddell Road - Group Cyclists  
(Weekend)

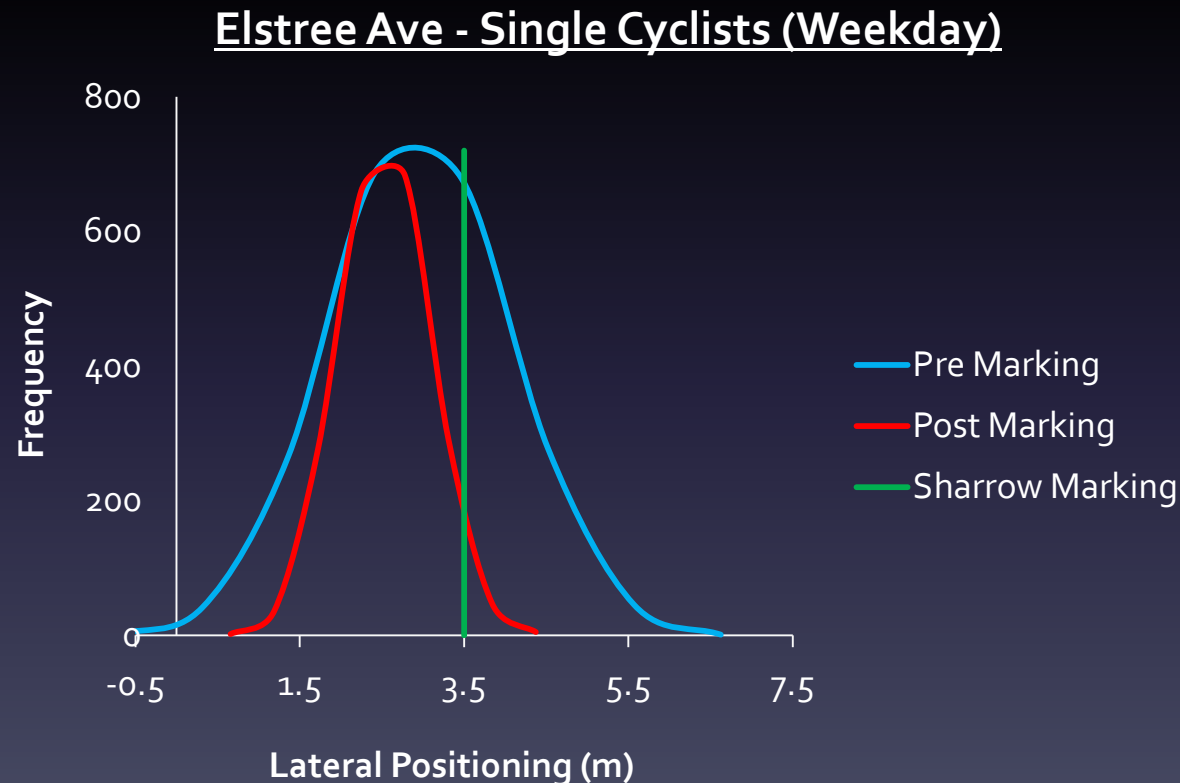


Elstree Avenue - Group Cyclists (Weekend)



# Discussion – continued

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



# 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 ?



