

# Effectiveness of a Speed Display Sign on reducing vehicles' speeds at road works

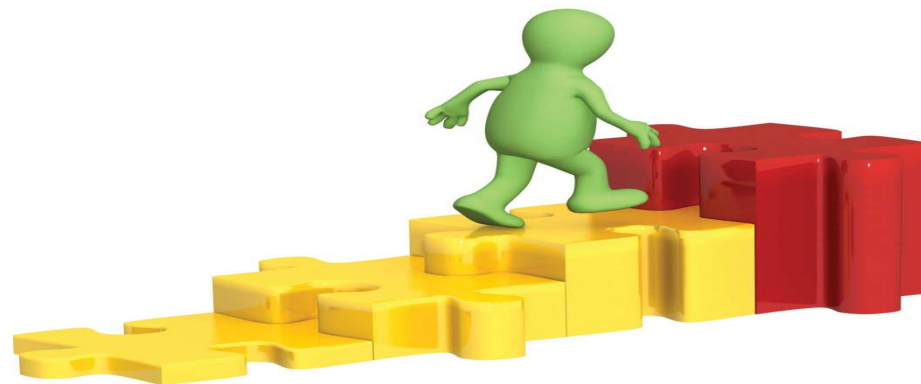


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# Purpose



This research paper investigates the impact of a Driver Feedback Speed Display (DFSD) sign on drivers' speed through road works.



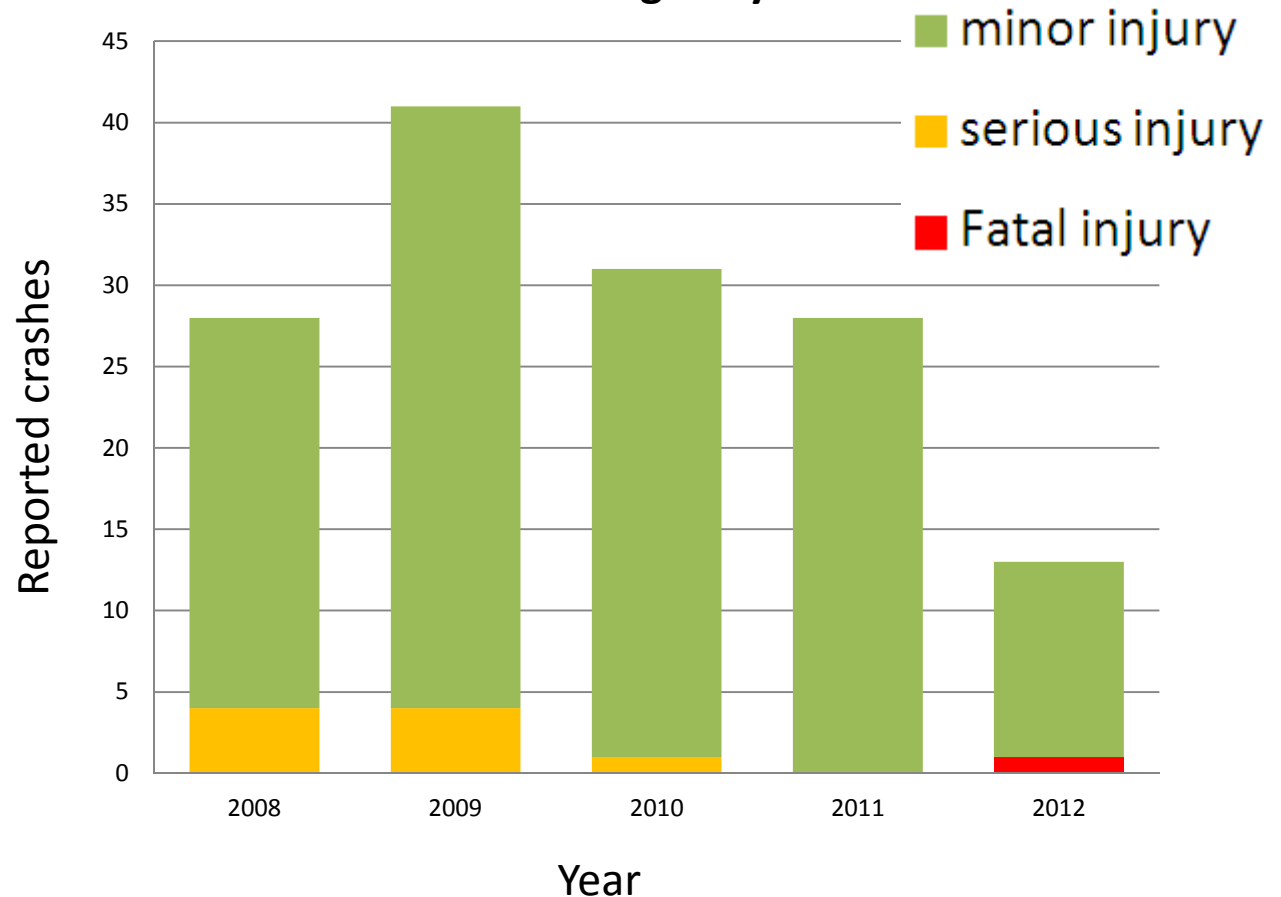
# Background

One of the NZTA's priorities:

Safe speeds to reduce deaths and serious injuries

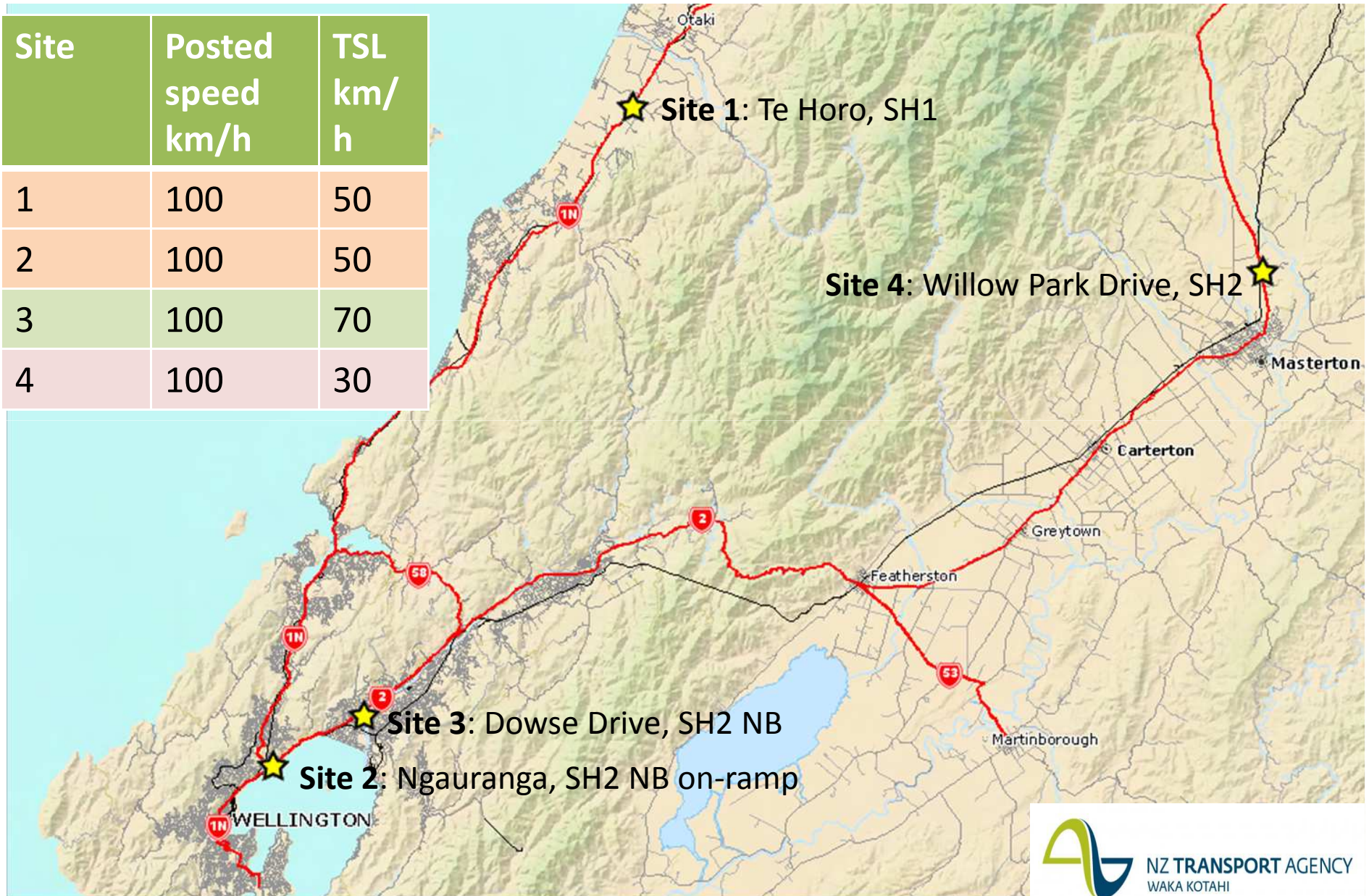


Reported Injury Crashes due to speeding drivers within Temporary Speed Limit - State Highways



# Locations of the sites

Site	Posted speed km/h	TSL km/h
1	100	50
2	100	50
3	100	70
4	100	30



# Photos of the sites

**Trial 1: Te Horo, SH1 Both Directions**



**Trial 2: Ngauranga, SH2 NB on-ramp**



**Trial 3: Dowse Drive,  
SH2 NB**



**Trial 4: Willow Park Drive, SH2 NB**



# Equipment used

A radar unit



Product Name: Viacount II

Driver Feedback Speed Display Sign  
(DFSD Sign)

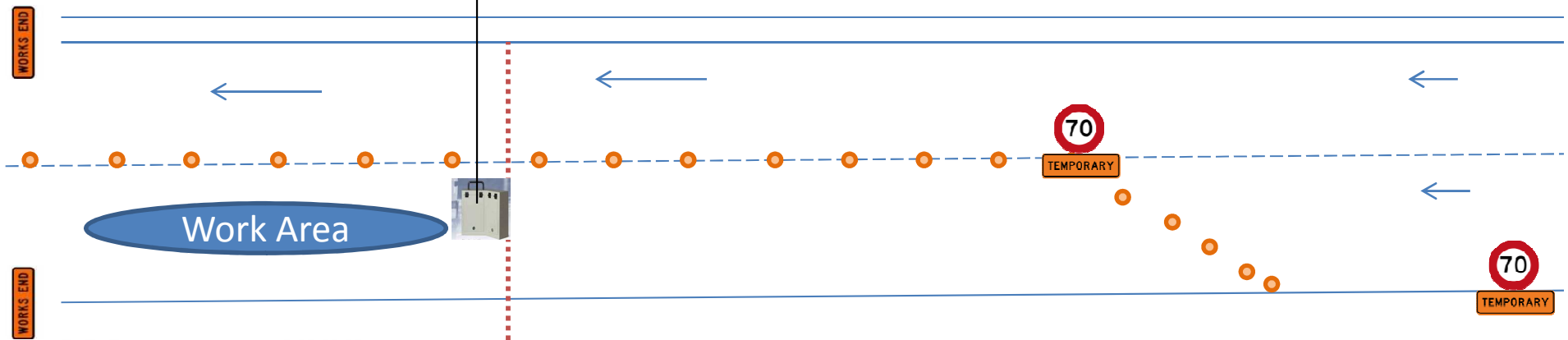


Product Name: Vaisis

Supplier: ELWC Australia

# Methodology

- Day 1



# Methodology

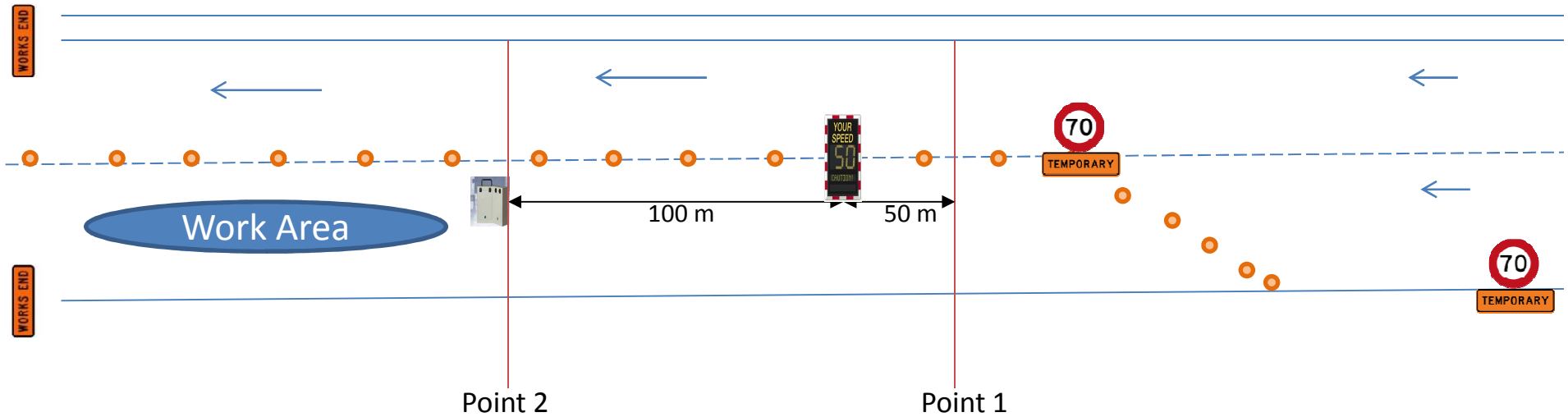
- Day 2



Point 2



Point 1





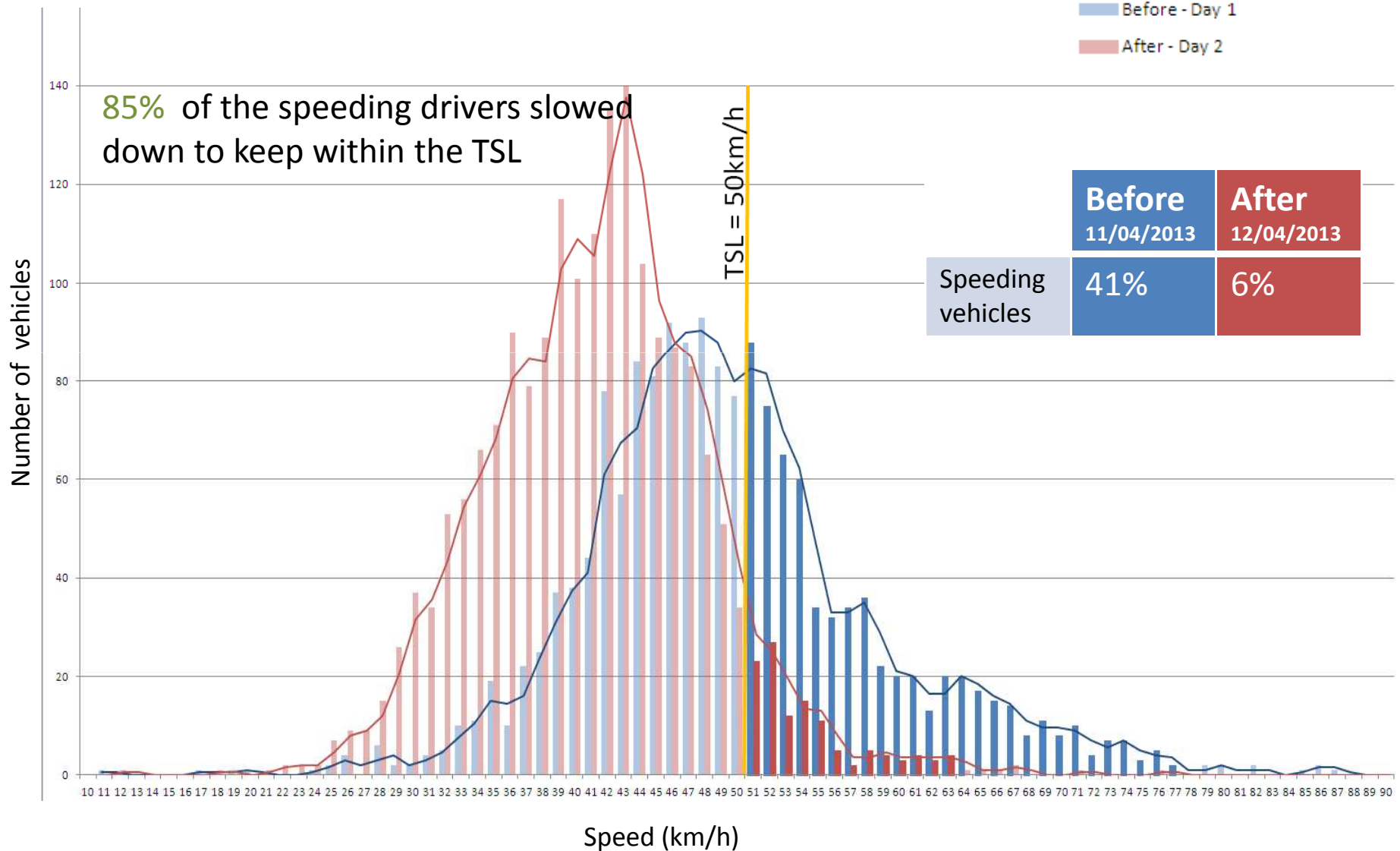
# Analysis Methods

- Analysis Method 1
  - Compares Day 1 and Day 2 speed data obtained from radar unit
- Analysis Method 2
  - Day 2 Only
  - Compares Point 1(Radar Unit) and Point 2 (Driver Feedback Speed Display sign) speed data.
- Analysis Method 3
  - Lane 1 and Lane 2
  - Compares the speed data of two adjacent lanes on the same day
  - One lane with feedback sign and lane which did not have a Driver Feedback Speed Display sign.



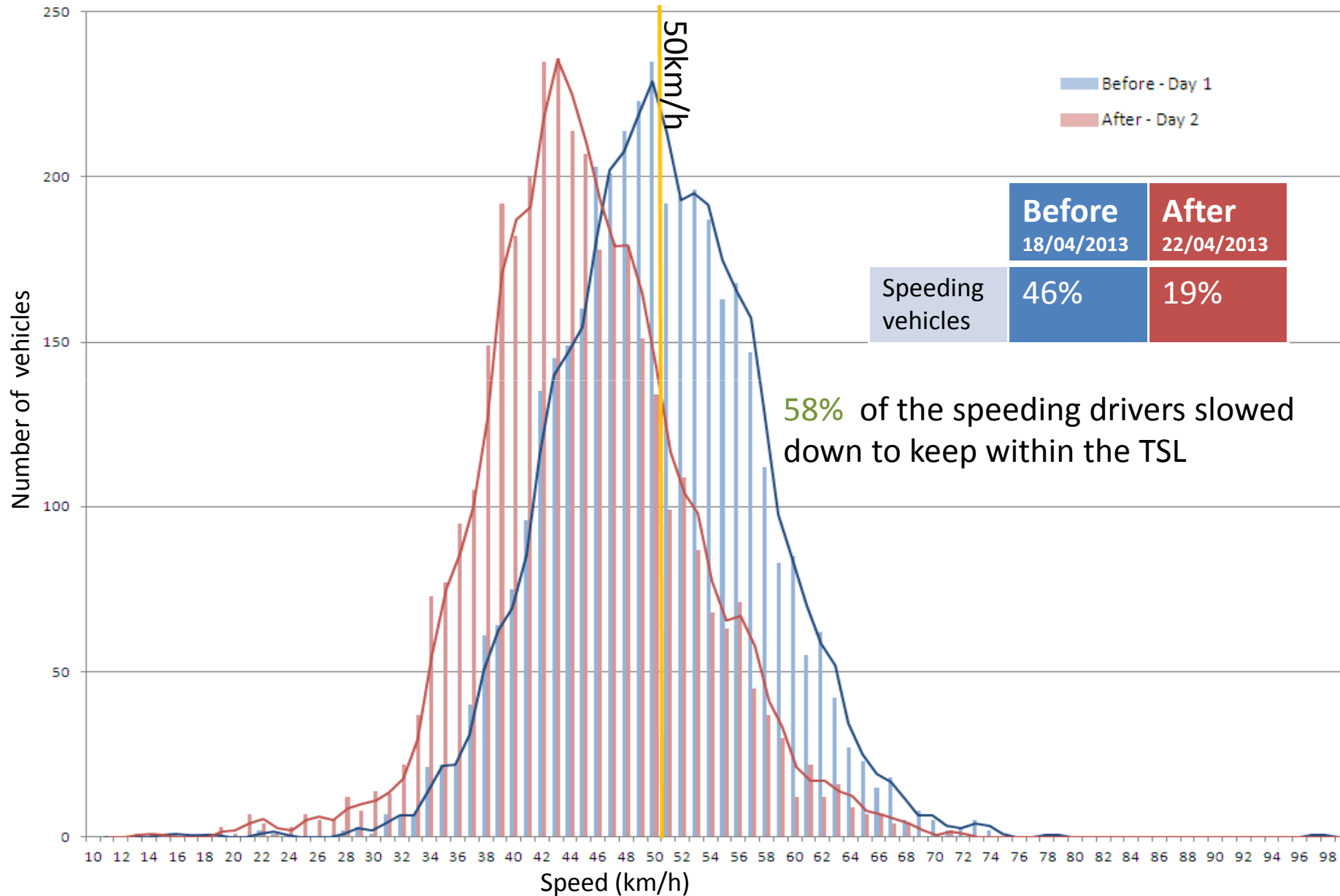
# Results

## Site 1: Te Horo – Method 1 Temporary Speed Limit (TSL) = 50km/h



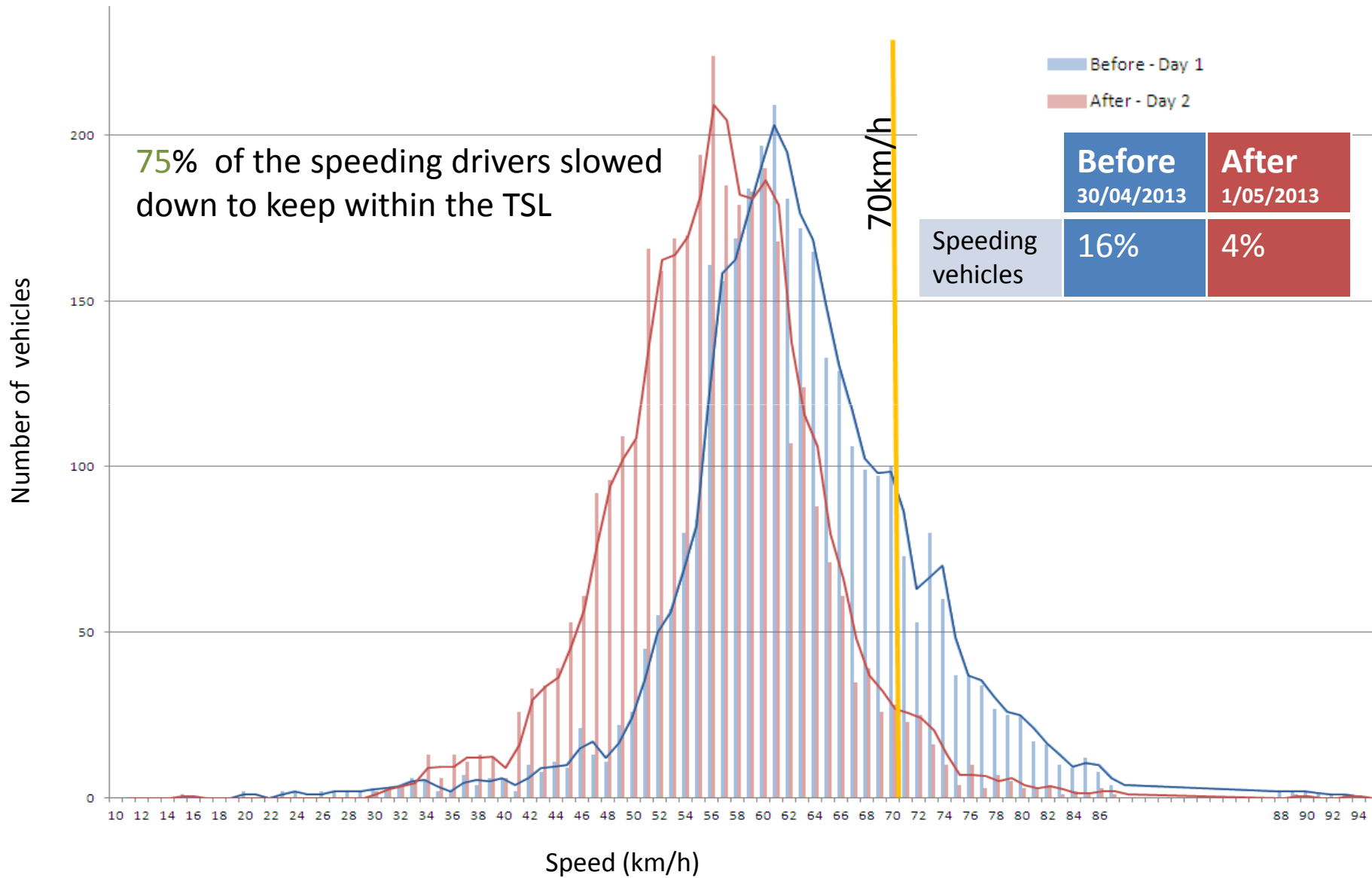
## Site 2: Ngauranga on-ramp – Method 1

Temporary Speed Limit = 50km/h

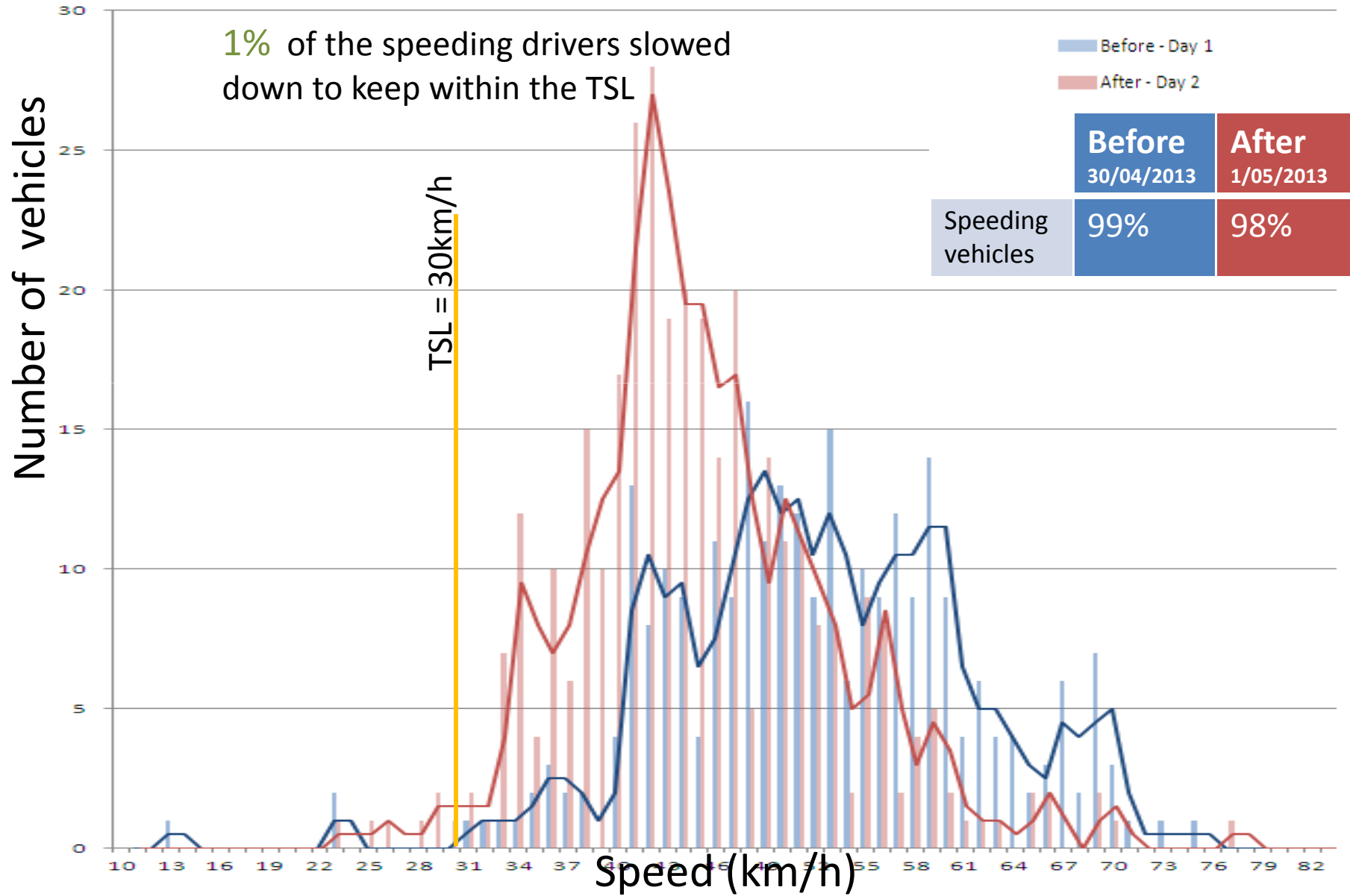


# Site 3: Dowse Drive – Method 1

Temporary Speed Limit = 70km/h

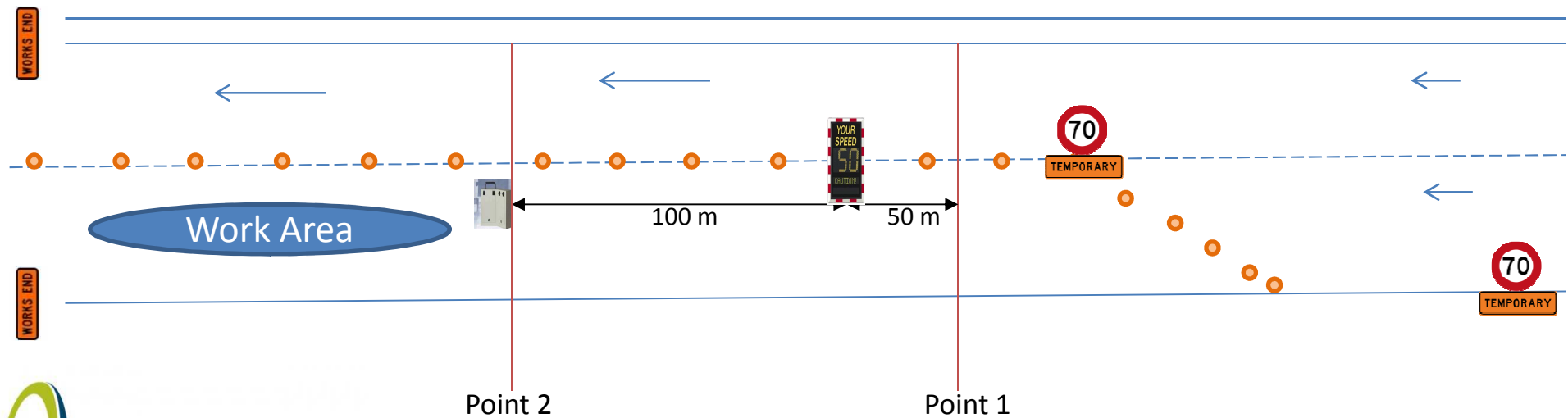


Site 4: SH2 / Willow Park Drive - Method 1  
 Temporary Speed Limit = 30km/h



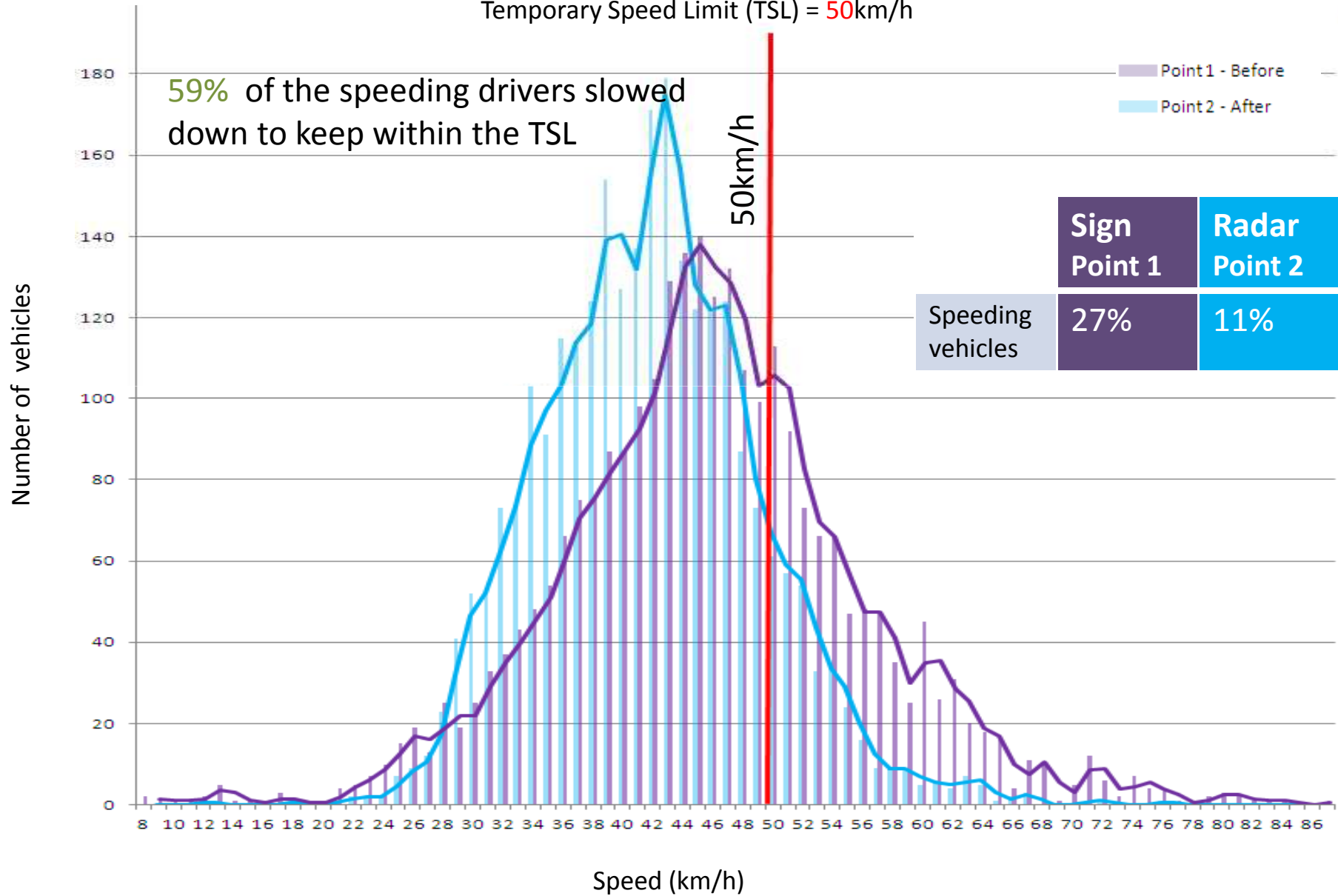
# Analysis Methods

- Analysis Method 1
  - Compares Day 1 and Day 2 speed data obtained from radar unit
- Analysis Method 2
  - Day 2 Only
  - Compares Point 2 (Radar Unit) with Point 1 (Driver Feedback Speed Display sign) speed data.



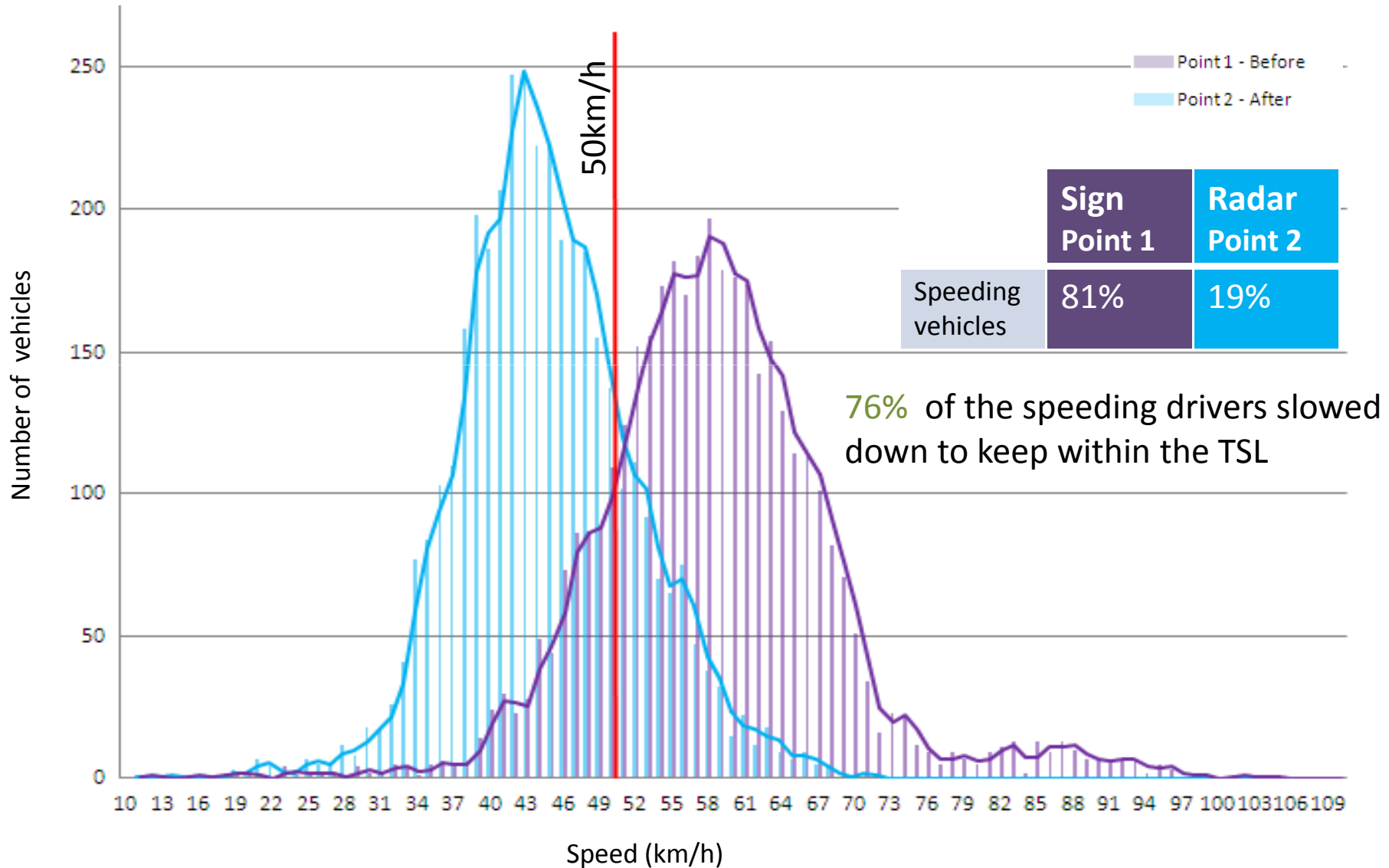
## Site 1: Te Horo – Method 2

Temporary Speed Limit (TSL) = 50km/h



## Site 2: Ngauranga on-ramp – Method 2

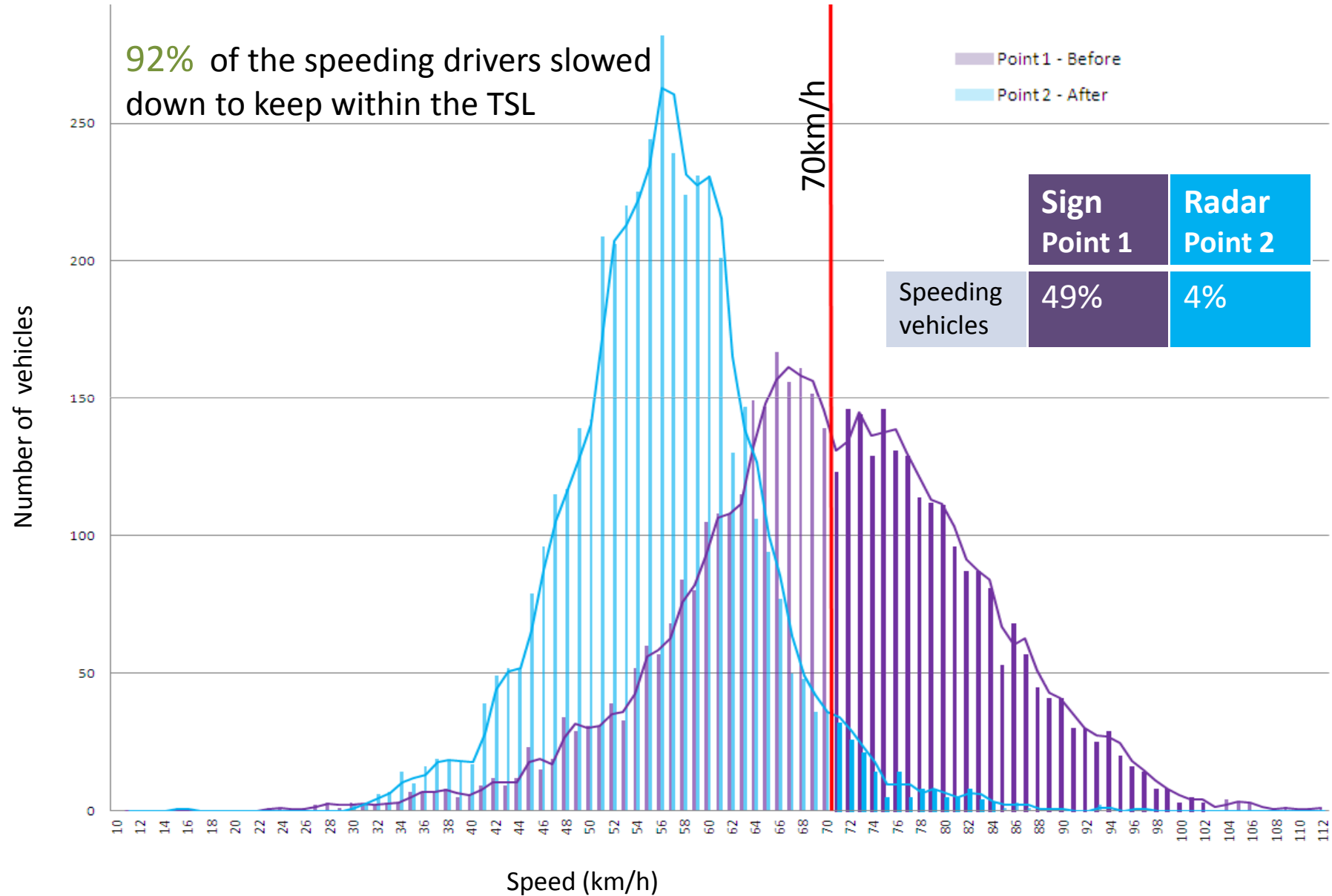
Temporary Speed Limit = 50km/h





# Site 3: Dowse Drive – Method 2

Temporary Speed Limit = 70km/h



# Analysis Methods

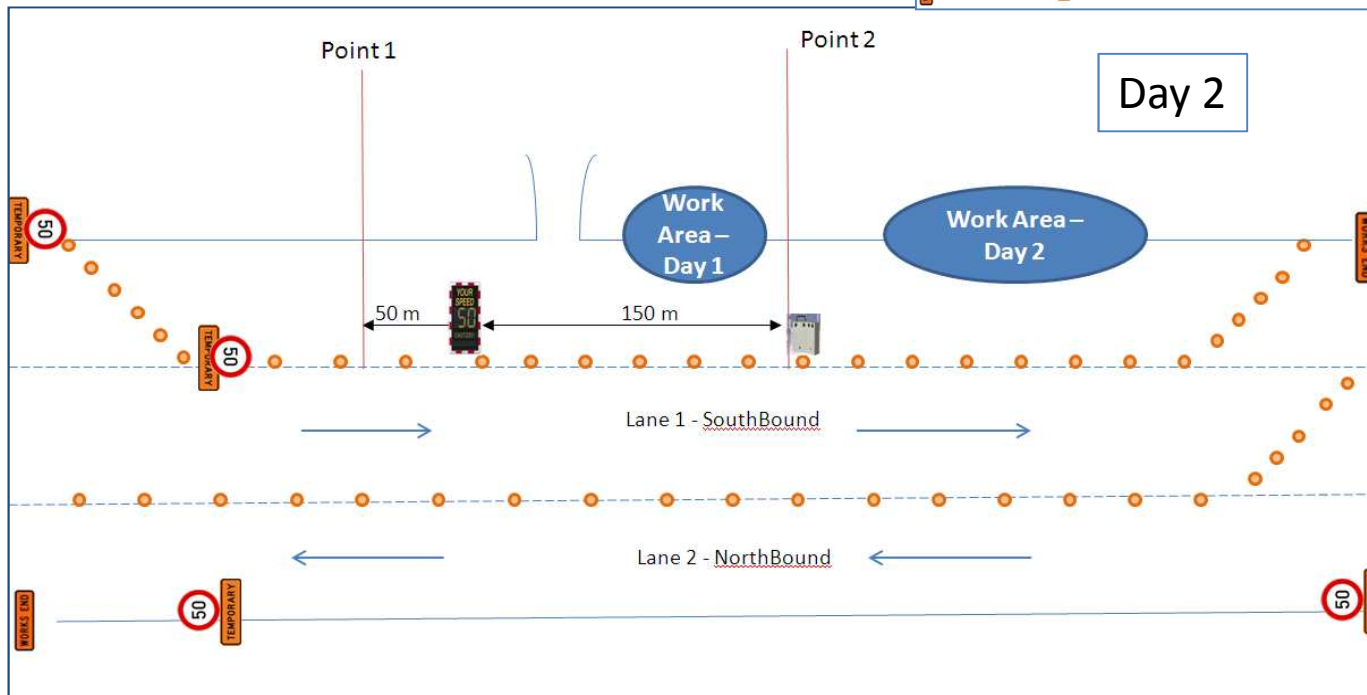
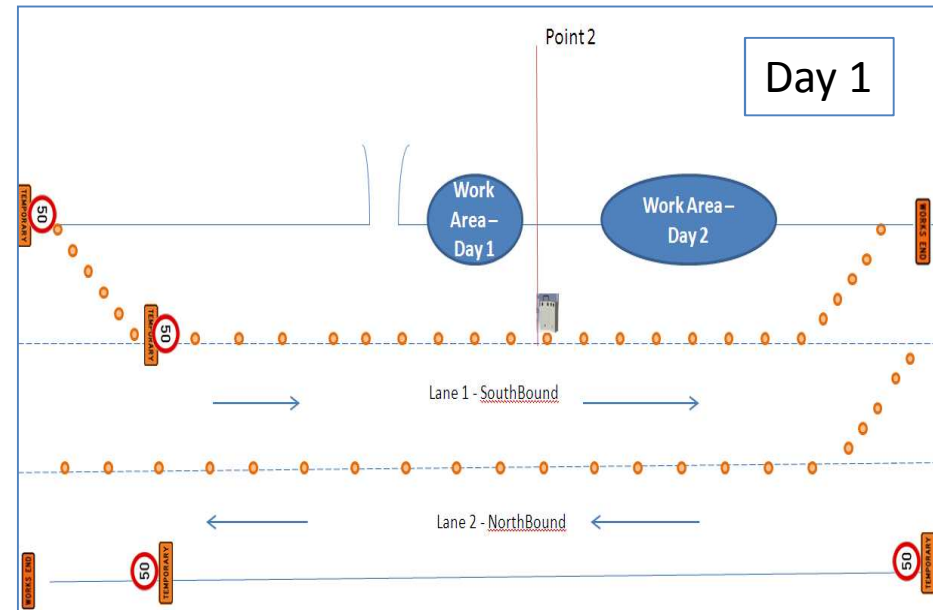
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# Analysis method 3

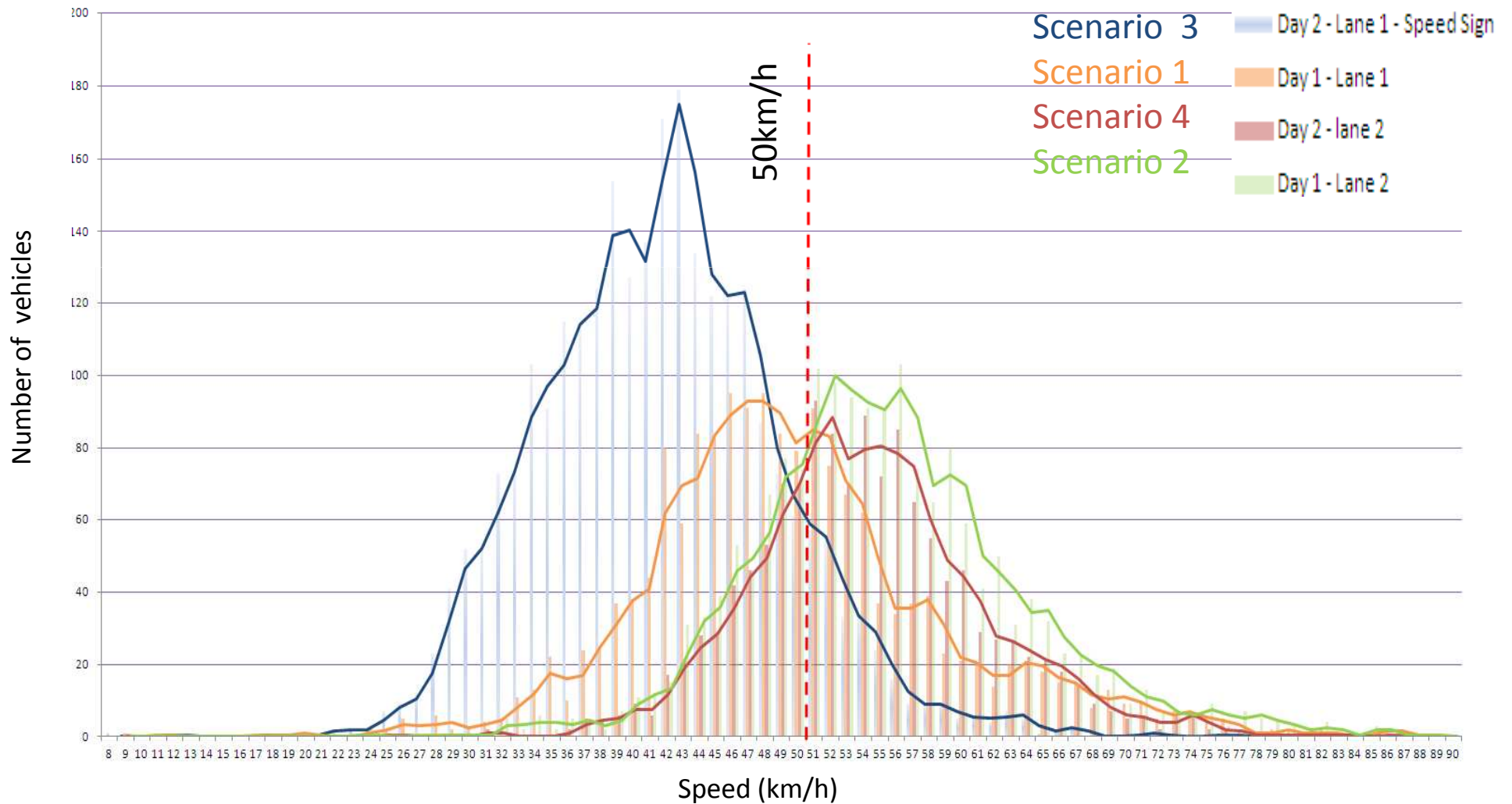
Four scenarios are listed below:

1. Day 1, Lane 1 without feedback sign
2. Day 1, Lane 2 without feedback sign
3. Day 2, Lane 1 with feedback sign
4. Day 2, Lane 2 without feedback sign



**Site 1: Te Horo – Method 3**  
Temporary Speed Limit (TSL) = 50km/h

Speeding vehicles (%)	Day 1 11/04/2013	Day 2 12/04/2013	% drop on Day 2
Lane 1	41%	11%	-74%
Lane 2	71%	69%	-3%



# Conclusions

1. Compliance to temporary speed limit will improve with the use of speed display sign at road works site
2. The proportions of drivers exceeding the Temporary Speed Limit (TSL) were significantly reduced at three sites while the feedback sign was in operation.
3. The effectiveness of a driver feedback speed display sign varied across sites
4. Wet weather had little impact on the speed compared to the driver feedback speed sign
  - Only 3% of the drivers reduced their speed due to a wet weather
  - 74% of the drivers reduced their speed while the speed sign was in operation

# Questions

Thank you for listening

