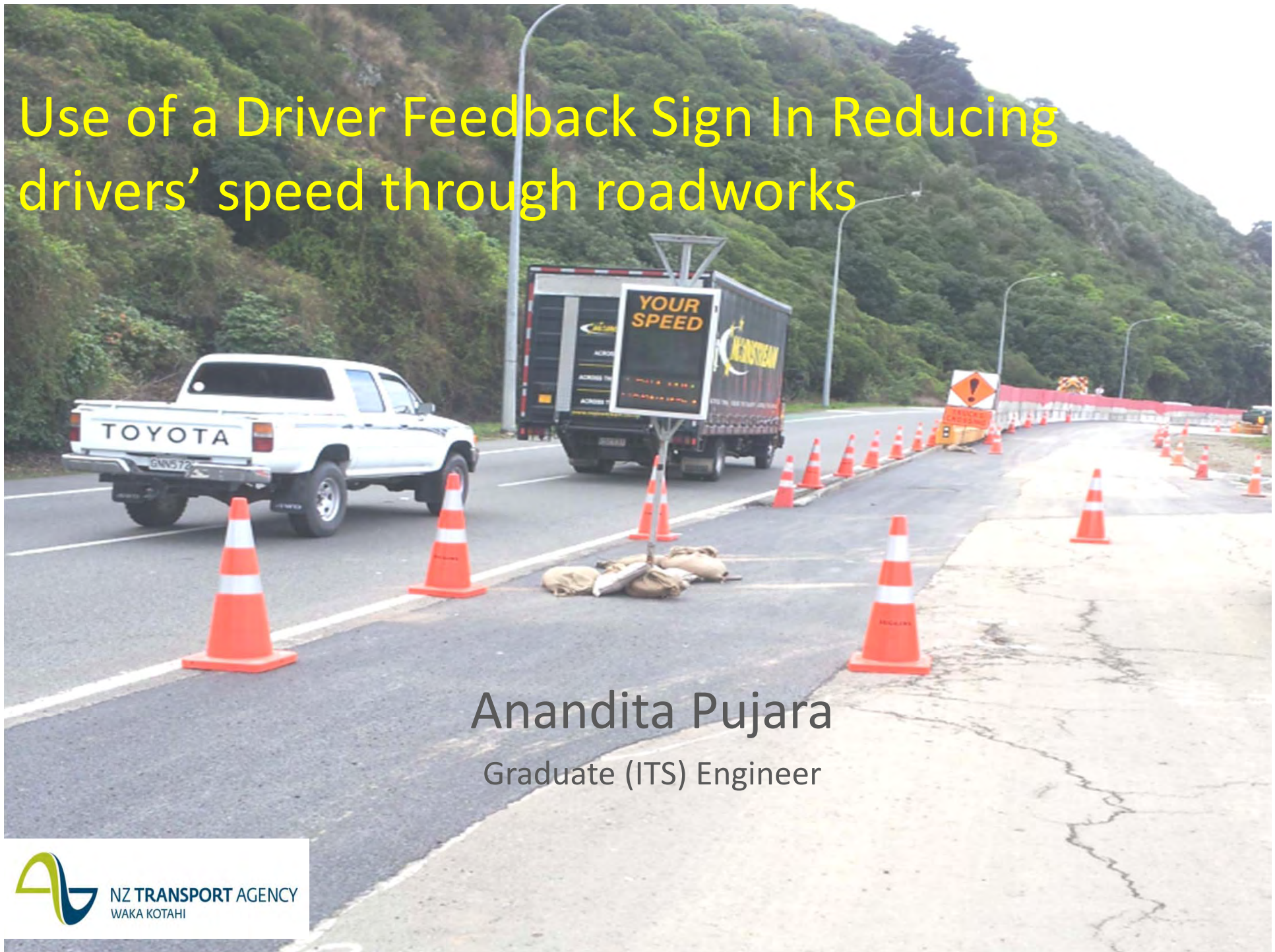


Use of a Driver Feedback Sign In Reducing drivers' speed through roadworks



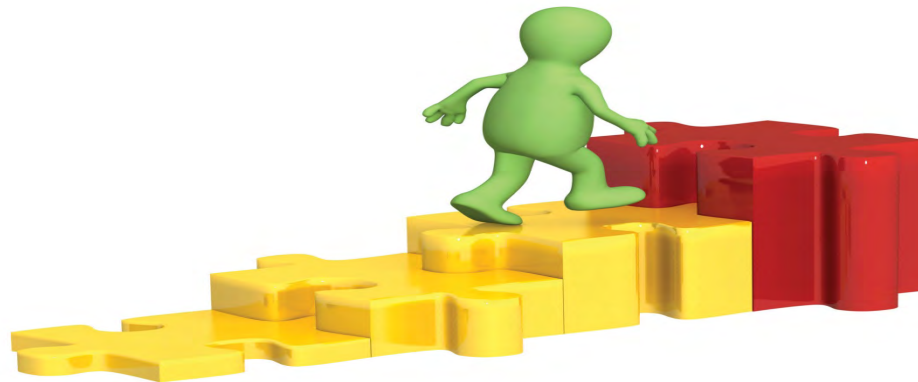
Anandita Pujara

Graduate (ITS) Engineer

Purpose



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



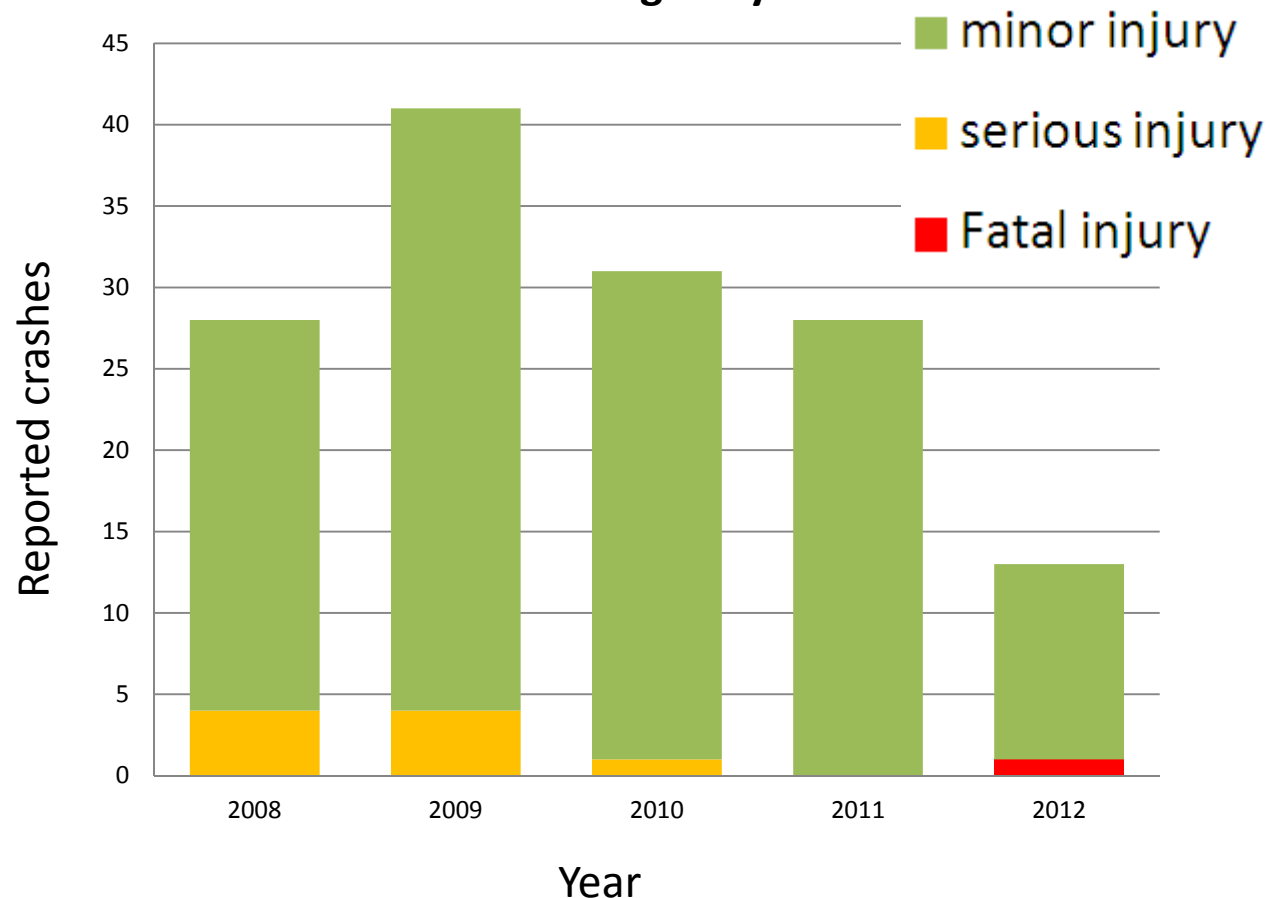
Background

One of the NZTA's priorities:

Safe speeds to reduce deaths and serious injuries

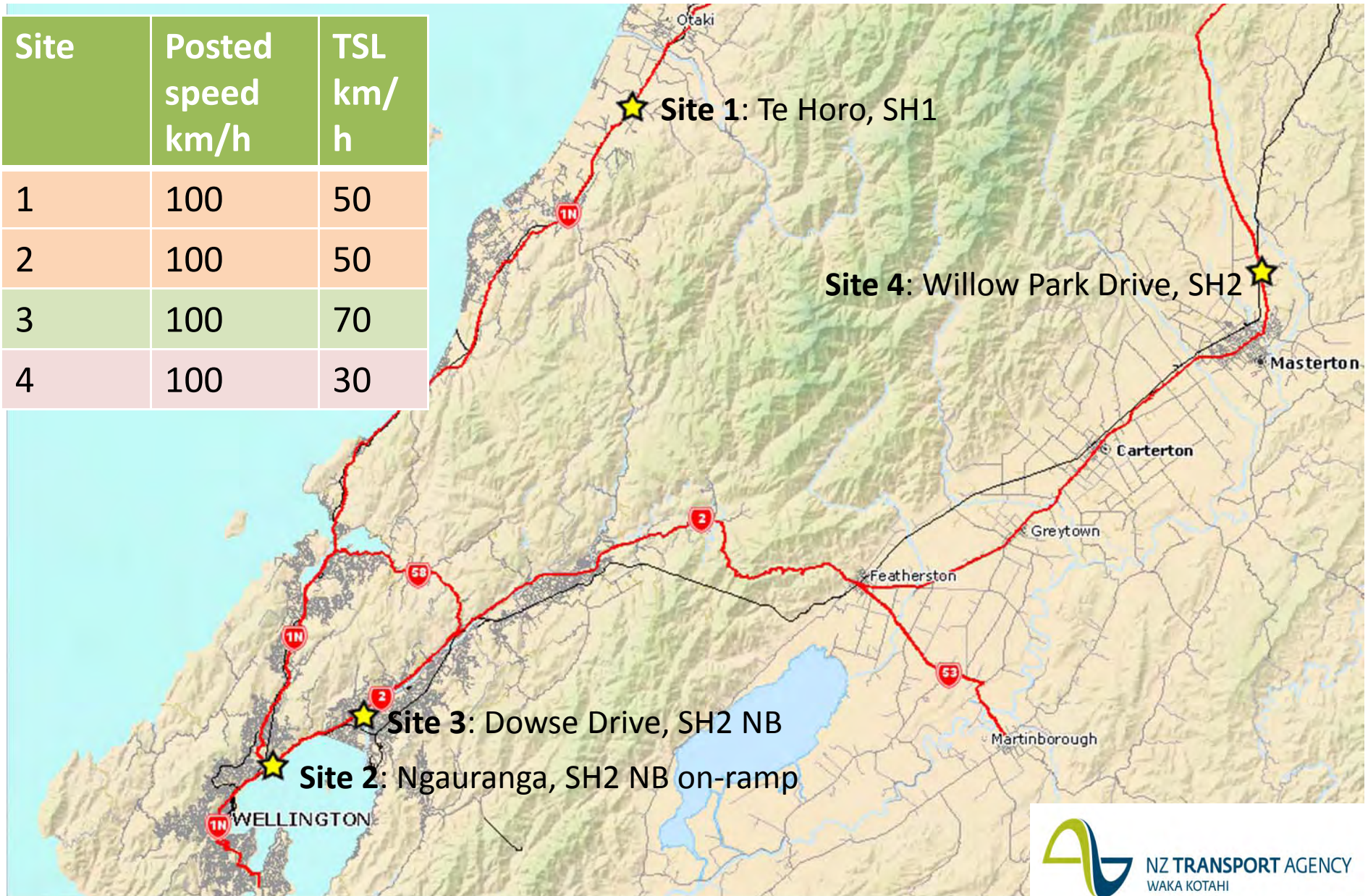


Reported Injury Crashes due to speeding drivers within Temporary Speed Limit - State Highways



Locations of the sites

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



Equipment used

A radar unit



Product Name: Viacount II

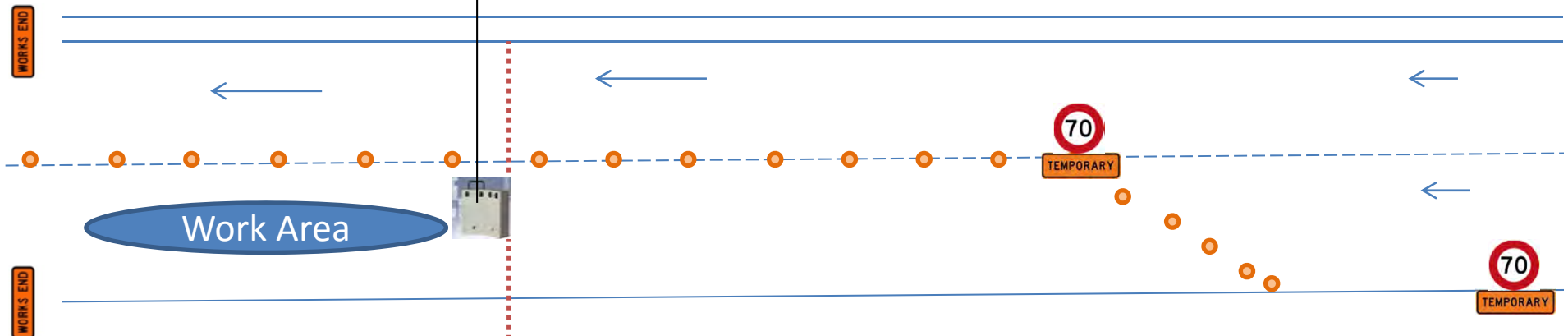
Driver Feedback Speed Display Sign
(DFSD Sign)



Product Name: Vaisis

Methodology

- Day 1



Methodology

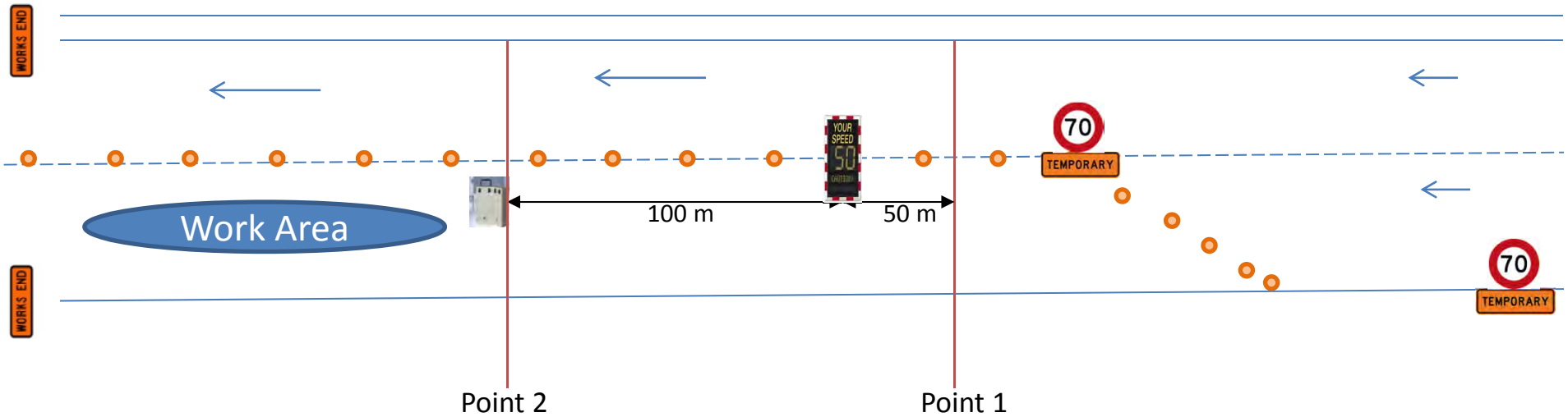
- Day 2



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

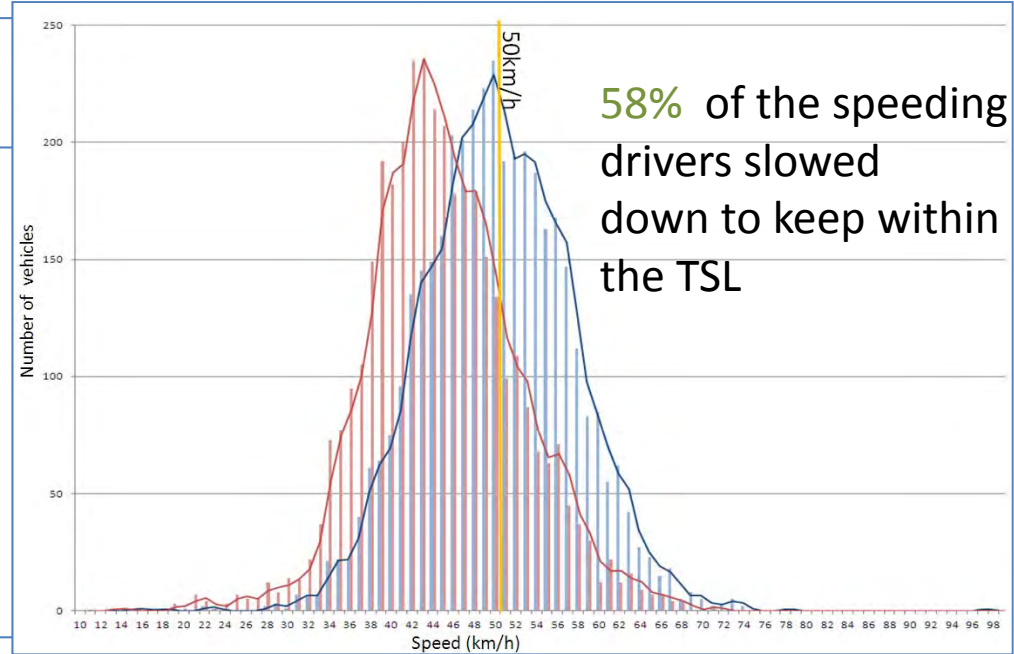
Site 1: Te Horo – Method 1 Temporary Speed Limit (TSL) = 50km/h



Site 2: Ngauranga on-ramp – Method 1

Temporary Speed Limit = 50km/h

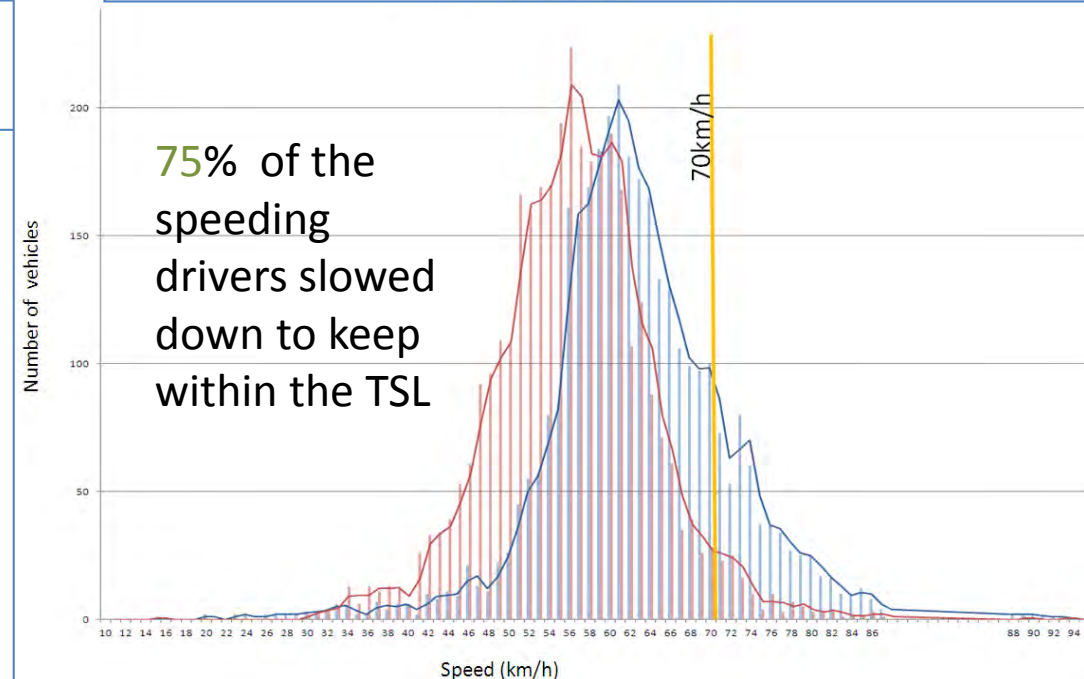
	Before 18/04/2013	After 22/04/2013
Speeding vehicles	46%	19%



Site 3: Dowse Drive – Method 1

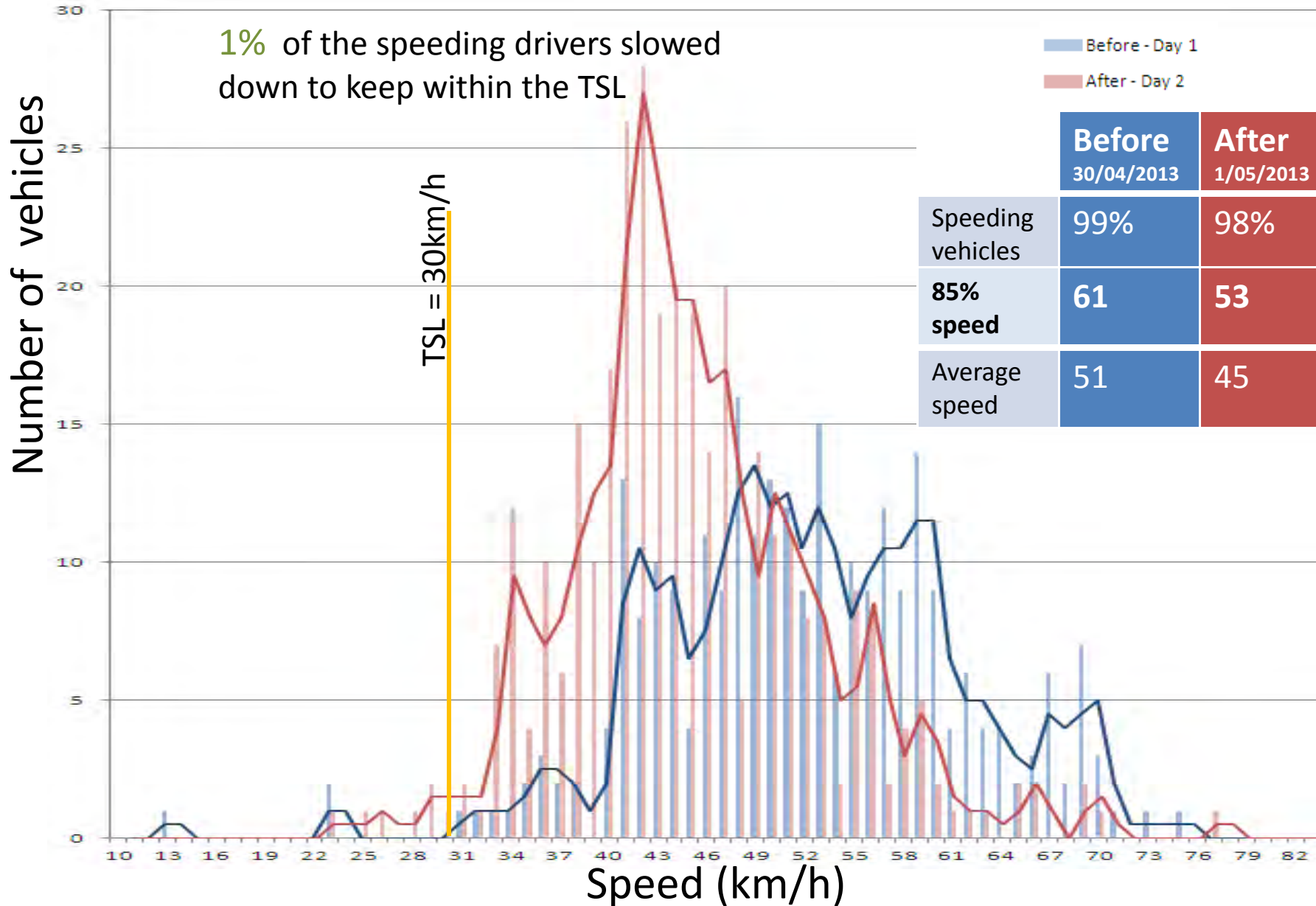
Temporary Speed Limit = 70km/h

	Before 30/04/2013	After 1/05/2013
Speeding vehicles	16%	4%



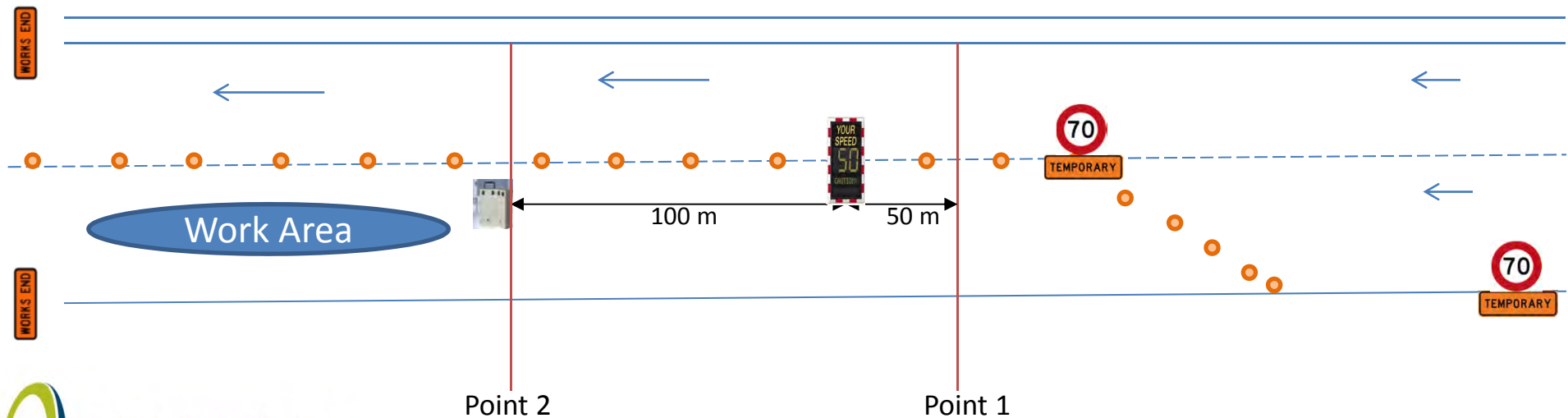
Site 4: SH2 / Willow Park Drive - Method 1

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.



Analysis Method 2

Point 1 vs Point 2

Site 1: Te Horo

TSL = 50km/h

	Sign Point 1	Radar Point 2
Speeding vehicles	27%	11%

59% of the speeding drivers slowed down to keep within the TSL

Site 2: Ngauranga on-ramp

TSL = 50km/h

	Sign Point 1	Radar Point 2
Speeding vehicles	81%	19%

76% of the speeding drivers slowed down to keep within the TSL

Site 3: Dowse Drive

TSL = 70km/h

	Sign Point 1	Radar Point 2
Speeding vehicles	49%	4%

92% of the speeding drivers slowed down to keep within the TSL

Analysis Methods

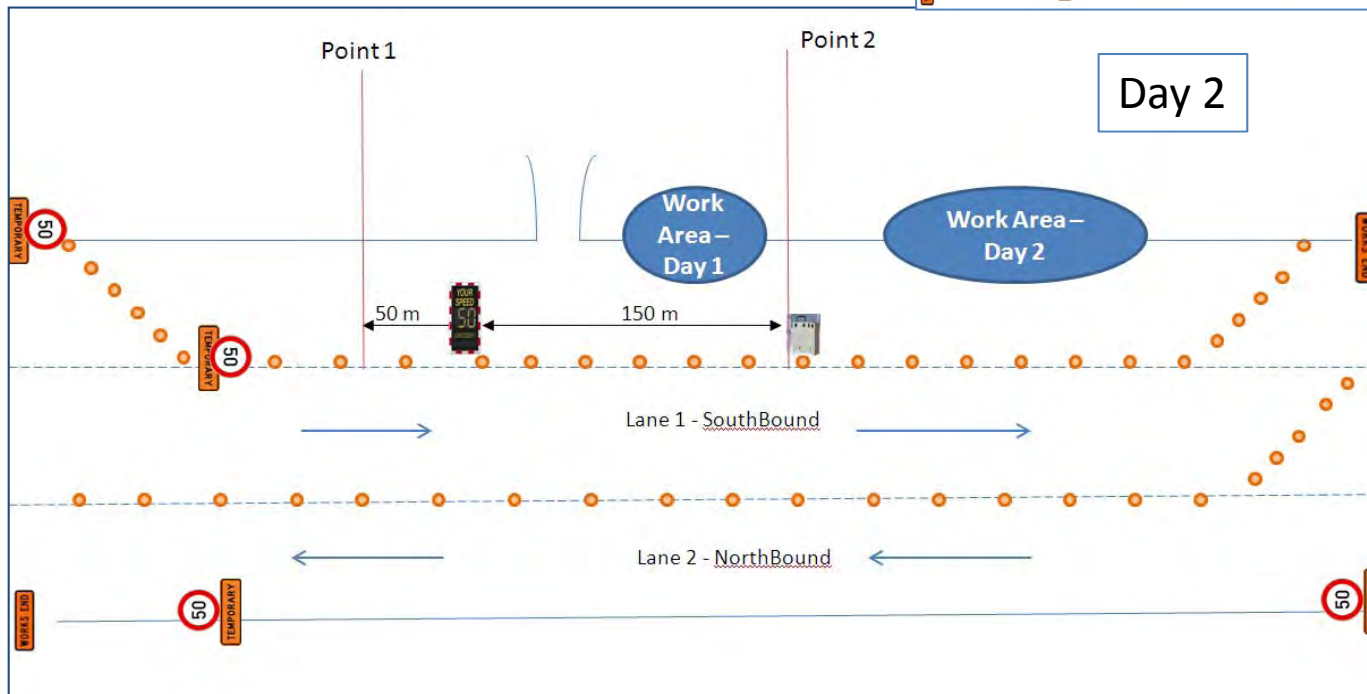
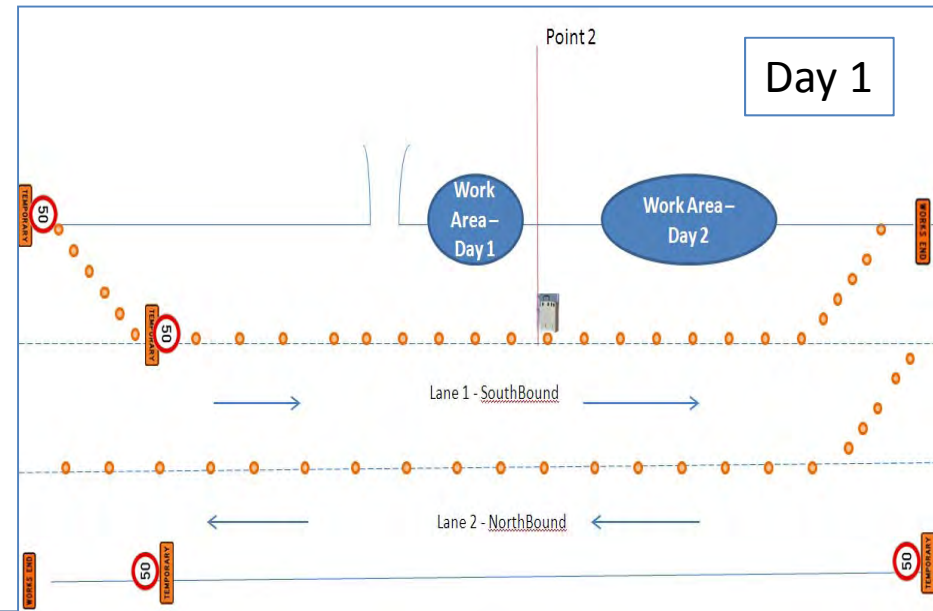
- Analysis Method 1
 - Compares Day 1 and Day 2 speed data obtained from radar unit
- Analysis Method 2
 - Day 2 Only
 - Compares Point 1(Radar Unit) and Point 2 (Driver Feedback Speed Display sign) speed data.
- Analysis Method 3
 - Lane 1 and Lane 2
 - Compares the speed data of two adjacent lanes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



Analysis method 3

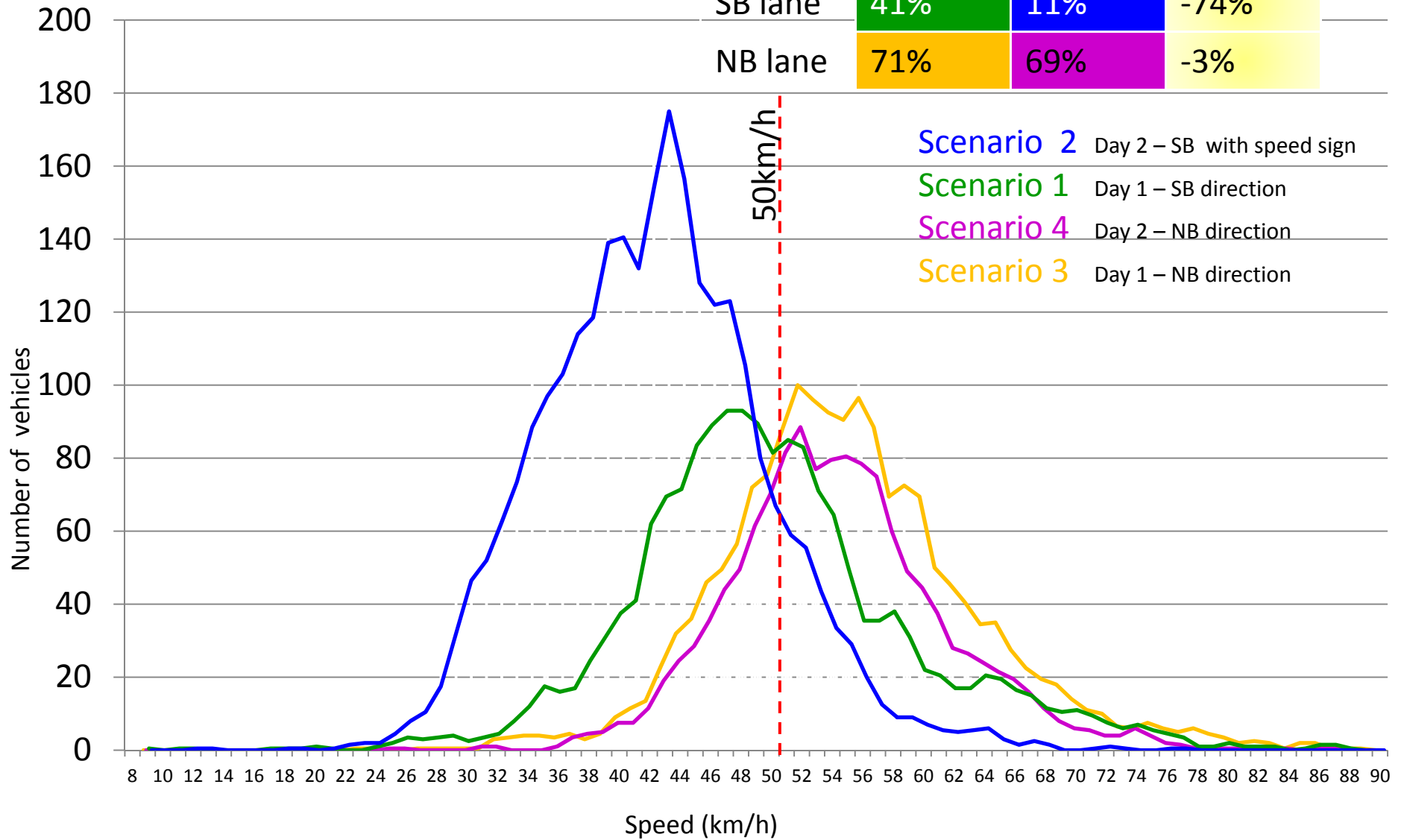
Four scenarios are listed below:

1. Day 1, SB lane without feedback sign
2. Day 2, SB lane with feedback sign
3. Day 1, NB lane without feedback sign
4. Day 2, NB lane 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
SB lane	41%	11%	-74%
NB lane	71%	69%	-3%



Scenario 2 Day 2 – SB with speed sign
Scenario 1 Day 1 – SB direction
Scenario 4 Day 2 – NB direction
Scenario 3 Day 1 – NB direction

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

Questions

Thank you for listening

