

# Point to Point Safety Camera Systems

The hardware and process

# Situation

Point to Point (P2P) camera systems (sometimes called Average Speed or Section Control camera systems) provide a speed management/enforcement system that influences long sections of roadway as compared to New Zealand's current spot speed approach.

We are currently working through the implementation of P2P camera systems across New Zealand, with that implementation reliant upon necessary legislative enablers and the approval of the camera systems as Approved Vehicle Surveillance Equipment (AVSE).

# P2P process

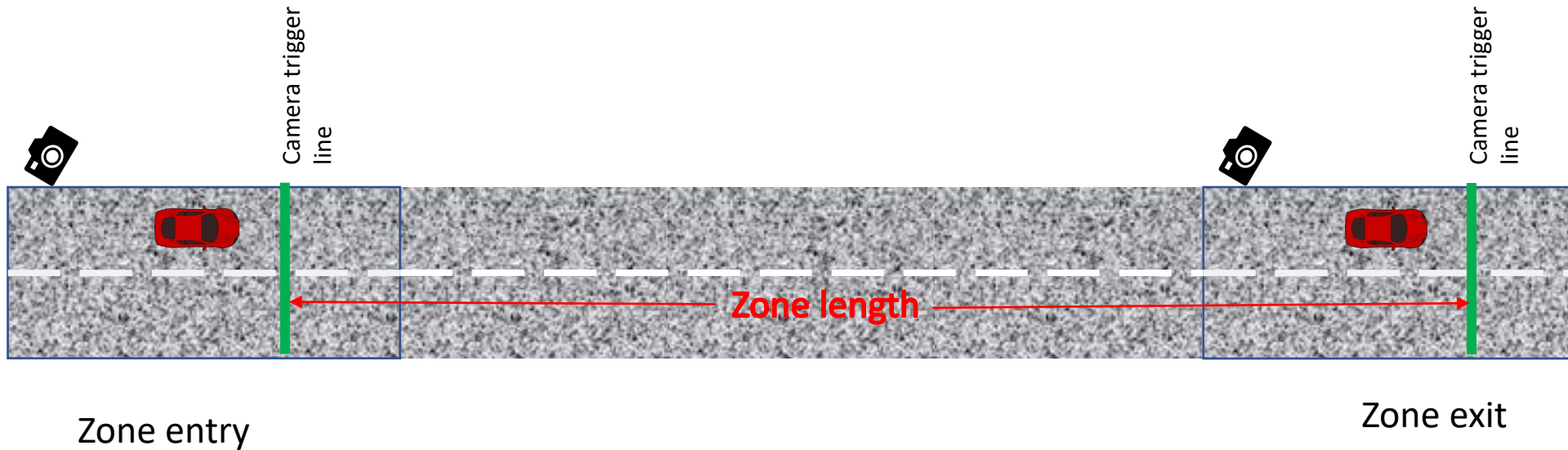
P2P speed measurement involves measuring the time taken for a vehicle to travel a known distance and using that time and distance to calculate the travel speed for the journey.

Cameras detect vehicles entering and exiting the measurement zone, take an image and capture the time of entry/exit.

Using ANPR to identify the vehicle by registration number, the time for the trip is calculated (exit time – entry time) and the speed calculated (distance of zone / trip time).

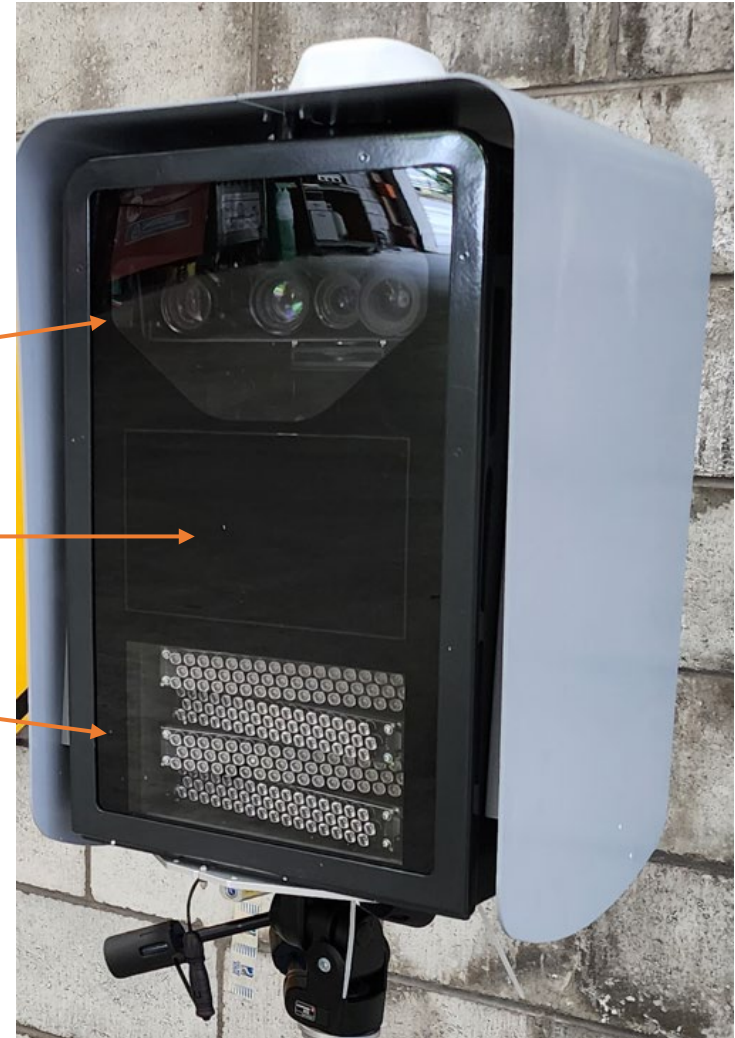
# Camera set up

- Each camera is configured on site.
- Lane dimensions are loaded and a trigger line established (typically 20-30 metres from the camera)
- As vehicles cross the trigger line images are taken and the time recorded.
- That data is sent to the back office system where the entering and exiting vehicles are matched (by registration number) and speed calculations completed



# The cameras

- The Redflex Halo 2 camera systems are proposed.
  - These cameras comprise digital cameras
  - A 3D radar capable of determining vehicle positions and speed for up to 256 simultaneous vehicles
  - Integrated infrared (invisible) flash



# Data Processing Overview

- The cameras are linked to the back office by cellular modem and potentially fibre where available in the future.
- Cameras have time synchronisation equipment using network time protocols – likely the time source will come from Measurements Standards Laboratory NZ
- ANPR performed on camera and the registration number forms part of the dataset sent to the back office system.
- The measurement of the zone is currently being worked through with the Surveyor General and surveyors.
- The cameras have been fully tested for Spot speed, red-light and Point to Point under controlled conditions. NZ Police and the Measurements Standards Laboratory were involved in the test plan design and monitored the testing.