WELLINGTON'S SMART MOTORWAY

SMART INFO

A smart motorway is fitted with a network of detection equipment (radars, loops and cameras) and electronic signs that are programmed to respond automatically to manage the flow of traffic. As the volume of traffic increases, the smart motorway automatically adjusts the speed limit to reduce congestion and get as many vehicles as possible through the area. They're used effectively around the world as transport agencies seek to improve people's journeys while getting the most out of existing road corridors.

There are three important parts of a smart motorway:

1. **Smart technologies** such as sensors, cameras, message signs, speed and lane control signals, and automated enforcement systems.

2. **Smart monitoring and management.**

3. **Smart drivers.** When all the parts come together, the stop/start nature of congestion is reduced, traffic moves more smoothly, more vehicles get through a section of road and everyone gets where they're going sooner and more safely.

LESS **STRESSFUL**
HAPPY DRIVERS

FEWER CRASHES

CONSISTENT TRAVEL TIMES

$$$ **VALUE** ☑

LOWER CO2

LESS CONGESTION

SMART
MOTORWAY

NZ TRANSPORT AGENCY WAKA KOTAHI

Johnsonville to Terrace Tunnel
Opens early 2016

newzealand.govt.nz

HOW THE SMARTS WORK

Smart motorways reduce congestion by carefully controlling the flow of vehicles. The most critical time when the system can influence the severity of congestion is as the traffic volume begins to build, ie before the road becomes congested. Detectors under the road and radars mounted on lighting poles and gantries count the number of vehicles in each lane, as well as the speed they're travelling. The smart system calculates the rate at which the road is getting congested, factors in what's likely to happen based on traffic records that are continually updated and monitored, and automatically adjusts the speed limit to pace the traffic and delay queues being formed.

FEATURES OF THE SMART MOTORWAY

Lane control signs – square electronic variable signs with three display options:

1. **Variable speeds** – changing the speed limit as conditions change is at the heart of a smart motorway. The speed limit displayed on the electronic speed sign is the legal speed limit. Smart motorways include automatic enforcement systems to further encourage drivers to stick to the posted speed limit.

2. **Red X** – when an incident occurs or work is being carried out on the road, the Red X is displayed to close the lane. It's illegal and potentially very dangerous to drive under a Red X.

3. **Arrow** – directs drivers to change lanes.

Emergency stopping areas – because there is no shoulder on the northbound lanes, two emergency stopping areas will be built. Normal motorway rules apply; it's illegal to stop in an emergency stopping area for any other reason than an emergency. The stopping areas are fitted with sensors, cameras, and a phone which connects straight through to Wellington's Transport Operations Centre (WTOC). Operators at the WTOC are alerted when a vehicle stops in the emergency stopping area and could send a Road Policing Officer to check out the situation. Once a vehicle is ready to leave the emergency stopping area, WTOC operators can use the Red X to close the lane allowing the vehicle time to get up to the speed of the main traffic flow.

Variable message signs - give drivers useful information so they can make informed decisions about their travel.

BEING A SMART DRIVER

It's easy to be a smart driver. All you need to do is:

1. **Stick to the posted speed limit** (the posted limit is the legal limit) – the smart system calculates the optimum speed to minimise congestion and to get the maximum number of vehicles through the area. As well as breaking the law, exceeding the speed limit will just get drivers to the back of the queue faster and just increase the size and duration of the queue.

2. **Minimise lane changes** – changing lanes can have a shockwave effect on following vehicles. If everyone stays in the lane where possible, traffic moves smoothly and everyone gets where they're going sooner.

'IT CAN BE CONFUSING BEING SLOWED DOWN BEFORE YOU EVEN SEE A QUEUE. THAT'S WHERE YOUR SMARTS COME IN - IF YOU FOLLOW THE SIGNS, YOU'LL GET THROUGH FASTER. IF YOU RUSH, BRAKE, CHANGE LANES AND THAT KIND OF CARRY-ON, YOU'LL MESS UP THE SYSTEM AND IT WON'T WORK FOR ANYONE.'

KEV MCPHEE
TRAFFIC SCIENTIST (FICTIONAL)

Slower today

Better tomorrow