



Adoption of Technology & Innovation: Road Construction & Traffic Management Examples (Australia)

Trend: Increasing digitisation & automation



AGEING

Legacy tools/processes that may still serve a purpose but lack the safety & efficiency of newer alternatives

Examples:

- Static road signs
- Fixed-timing traffic signals
- Traditional traffic counters
- Guardrails



MATURING

Commonly used tools/technologies with reliable performance but approaching their peak utility

Examples:

- Intelligent Transport Systems (e.g. Ramp metering, Fixed Variable Message Signs)
- Traditional fixed speed cameras
- Building Information Modelling (BIM)



GROWING

Technologies gaining traction, with strong potential to improve safety & efficiency but not yet industry-wide

Examples:

- Cooperative Intelligent Transport Systems (C-ITS)
- AI-powered traffic prediction & management
- Digital twins
- AI-enabled speed cameras



EMERGING

Early-stage technologies with high innovation potential, currently in trial or limited use

Examples:

- Connected & Automated Vehicles (CAV) infrastructure
- Vehicle-to-Everything (V2X) technology
- AI powered pothole/defect detection

Construction & Temporary Traffic Management

- Static road signs
- Traffic cones
- Static barriers
- Manual traffic control
- Basic roadside CCTV

- Portable traffic lights
- Portable boom gates
- Temporary rumble strips
- Traditional Truck Mounted Attenuators
- Work zone ITS (e.g. Variable Message & Speed Limit Signs)
- Movable barriers
- Mobile gantry cranes
- Automated Machine Guidance

- Movable barriers
- AI-powered traffic cameras
- Work zone ITS (e.g. End-of-Queue warning systems, radar activated messaging)
- Geofenced work zones
- Automated Cone Trucks
- Automated line markers
- Drones (real-time insights)
- Wearable safety tech for workers

- Smart traffic cones
- Smart crash cushions
- AI-enabled traffic control & predictive analytics
- Vehicle-to-Everything (V2X) technology (real-time road work alerts)
- Work zone intrusion detection systems
- Autonomous Truck Mounted Attenuators