

# VULNERABLE ROAD USER PROTECTION SYSTEM

An AI camera-based solution to reduce the risk of injuries and accidents arising from interactions between heavy vehicles, plant equipment, and vulnerable road users.

The BMD Project Team at Mickleham Road conducted a trial of the MAX-SAFE SideView Pedestrian Protection System to minimise the likelihood of incidents involving pedestrians or workers and large vehicles.

The system utilises AI-programmed cameras to detect vulnerable road users in the left-hand side blind spot during left turn manoeuvres, triggering in-cab and external warnings.



The AI smart camera is installed on the left side mirror and position to view the driver blind spot areas (left), when activated an audible message is sounded and the light bar flashes (right).

## The Situation

A pre-construction safety risk assessment of the project site identified a set of unique challenges for the team.

The project boundary included a large school and several kindergartens in a developing suburb, shared footpaths with limited accessibility were also identified as a behavioural risk.

Recognising these risks, BMD proactively engaged with SGESCO-MAX to discuss available technologies to reduce the risk associated with vulnerable road users interfaces.

After consultation between the relevant parties, a trial of the appropriate technology on site was agreed and if successful, the implementation of this technology would be extended to other sites facing similar risks.



Scan QR Code to watch video of SideView Pedestrian Protection System in action.

## The Solution

As a solution, the BMD team responded by equipping two Tipper Body trucks with the MAX-SAFE SideView Pedestrian Protection System.

To enhance safety, an AI camera was installed on the front left-hand side of the vehicles. The camera's activation was dependent on the engagement of the left-hand indicator or the detection of a 25-meter radius turn. Whenever a person was identified within the left-hand side blind spot during a left-hand turn manoeuvre, both the driver and the vulnerable road user would receive timely warnings.

The driver would be alerted through an in-cab vocal warning stating 'Pedestrian Detected,' accompanied by a flashing dash-mounted light. Simultaneously, the vulnerable road user would be notified through an external speaker broadcasting 'Caution – vehicle turning left,' accompanied by a flashing LED light array.

## Benefits and learnings

- No incidents related to plant and vulnerable road users were recorded during the system's implementation.
- The system was activated by site workers who approached the vehicle during left-hand turn manoeuvres.
- The safety awareness of site workers was increased regarding limitations of heavy vehicle blind spots.
- Both the internal and external alerts were effective in providing time sensitive audio and visual warnings.
- Drivers are not distracted by outdated systems that have unnecessary or repetitive warnings.
- The MAX-SAFE SideView Pedestrian Protection System is suitable for installation on any heavy vehicle or mobile plant and can be retro-fitted or installed from new equipment.
- Fulfills a CLOCS-A Silver Accreditation Vehicle Safety Specification.
- Cost effective at \$2,900 per plant.
- Expected roll-out to future projects.

**Program Office:** Major Road Projects Victoria  
**Work Package:** Mickleham Road  
**Principal Contractor:** BMD Constructions  
**Solution Vendor:** SGESCO-MAX

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