



CASE STUDY:

AUSTRALIAN RECYCLING COMPANY

FIRST AUSTRALIAN ROLLOUT OF REAR LOADER VRU PROTECTION SOLUTION

One of Australia's recycling giants has become the first company in Australia to implement an innovative AI camera solution to protect unaware VRUs from a moving rear loader system.

Following a three-month trial in Brisbane in 2023, the **MAX-SAFE Rear Loader Pedestrian Protection™** solution, developed by SGESCO-MAX, has been installed on 24 recycling trucks across Queensland, New South Wales and Victoria to remove a major Vulnerable Road User (VRU) safety risk.

MAX-SAFE  | MAXIMUM SAFETY
MADE BY SGESCO  MAX





By saving just one accident on a recycling truck, the MAX-SAFE Rear Loader Pedestrian Protection solution will more or less pay for itself, while giving years of protection.

SCOTT McPHERSON | Managing Director, SGESCO-MAX



BUSINESS OVERVIEW

Local Councils, businesses and households across Australia are continuing their efforts to be more sustainable with 93% of Australians saying that reducing waste and recycling products into new products is important to them.

Recycling is thus a huge industry in Australia with 40.6 million tonnes of material (approximately 63.1% of all waste) being recycled in 2021-22 by 1828 recycling businesses.

The sector requires specialist collection vehicles and processing plants to deliver a circular economy, with health and safety always a key priority. Garbage and recycling trucks are common-place heavy vehicles on our city and suburban streets, coming into unavoidable close contact with VRUs day and night.

With protecting VRUs a critical priority, the waste management industry continues to be a leader in adopting new heavy vehicle safety solutions to protect VRUs and their staff from the trauma associated with accidents.

THE SAFETY CHALLENGE

The waste management sector has vehicles that are unique to the work they do. Rear and front loaders are two such vehicles, widely used for commercial collections from businesses, hospitals, schools, hotel complexes, sporting ovals and more.

When it comes to recycling, a rear loader typically collects large rectangular bins of paper, cardboard and plastic by parking alongside them or reversing into tight spaces, laneway ends, carparks and roadsides. A driver rolls the recycling bin up to the back of the truck, sliding it over the two hydraulic arms of the rear loader that will flip the bin up over the top of the truck releasing the contents into the trailer before depositing the bin back down on the ground for the driver to wheel back to its original position.

To operate the rear loader, a driver stands to the rear side of a vehicle and presses a button to activate the lift mechanism. From their position, the driver has no visibility of what is happening on the other side of the vehicle. The rear loader can be operated from either side of the vehicle.

Pedestrians or cyclists moving down the side of a stationary truck can be unaware of the operations at the rear of the vehicle and the risks associated with stepping behind the vehicle and connecting with a large and heavy moving arm and bin.

Additionally, with the prevalence of mobile technology, people often walk around with their eyes on their phone or talking to someone on the phone, making them less aware of their surroundings and noises. It's a hazardous situation for vulnerable road users (VRUs) because the dangers are not obvious when the vehicle is stationary and no one is in the cabin.

THE SOLUTION

The MAX-SAFE Rear Loader Pedestrian Protection System is a new, advanced, AI-camera-based solution designed to protect pedestrians in the vicinity of a rear loader waste vehicle when it is lifting and lowering bins.

The solution identifies any VRU that approaches the rear loader from the side opposite to where the operator is standing.

The cameras are mounted in the optimal position, typically up high on each side towards the rear of the vehicle. Using the latest advances in Artificial Intelligence (AI) and Machine Learning (ML) the solution detects humans within a 3m x 6m defined zone next to the vehicle, alerting the vehicle operator.

Any pedestrian detected within that zone during lifting operations will trigger the system, alerting the operator via an audible alarm and flashing LED lights, prompting the operator to hit the emergency stop.

The rear loader safety solution works with both control panels at the back of the vehicle to monitor the opposite side of the vehicle to the one the driver is operating, ie. if the operator is controlling from the left side, the right side is monitored and protected, and vice versa.

When the rear loader mechanism is not in operation, the system is disabled, hence there are no alerts while the vehicle is stationary or moving.

The solution protects not just VRUs but also drivers, vehicles and property as well.

THE TRIAL & ROLLOUT

As part of an existing recycling contract in Brisbane, the MAX-SAFE Rear Loader Pedestrian Protection solution was installed on a rear loader that collected during the day and at night.

As this was the first Australian in-market trial of the solution, SGESCO-MAX worked with the drivers to fine-tune elements and ensure the volume was set to a level that could still be heard over the noise of the truck to alert the operator but not travel far and disturb other people at night.

The trial proved the accuracy of the system to detect VRUs, with only one false alert when the camera identified a face on the advertising decal of a nearby parked minivan.

One of the benefits of the **MAX-SAFE Rear Loader Pedestrian Protection** solution is that it is installed on the body of a rear loader and operates completely independently to the engine of the heavy vehicle.

It is suitable for any make or model of waste truck with SGESCO-MAX able to work with body builders, like Bucher or Superior Pak to advise on installation. This makes for a streamlined roll-out by SGESCO-MAX and its dealer network.

Following the trial, the **MAX-SAFE Rear Loader Pedestrian Protection** solution was installed on 24 recycling trucks across Queensland, New South Wales and Victoria in the 2023-2024 financial year, thereby removing a major Vulnerable Road User (VRU) safety risk.



MAKING REAR LOADERS SAFER

Waste Management companies are often our pioneer partners when it comes to heavy vehicle safety solutions, noted Scott McPherson, Managing Director of SGESCO-MAX.

“Our MAX-SAFE Rear Loader Pedestrian Protection uses the best of global technologies in an advanced, reliable and affordable solution to improve safety around rear loader vehicles, reduce hazards for pedestrians and the potential devastating consequences for the operators of such vehicles.”

“The investment in such technology is worth it to remove this safety risk of rear loaders. Any accident with a rear loader will likely result in vehicle downtime, investigations, insurance claims and possible disciplinary action, as well as trauma and recovery ramifications for the operator and injured party.”

“By saving just one accident on a truck our solution will more or less pay for itself, while giving years of protection,” said Scott.



The solution protects not just VRUs but also drivers, vehicles and property as well.

SCOTT McPHERSON
Managing Director,
SGESCO-MAX

KEY BENEFITS

of the **MAX-SAFE Rear Loader Pedestrian Protection solution.**

- ◆ PROVIDES ASSISTANCE to the driver/operator.
- ◆ SAFEGUARDS blindspots around the rear and rear sides.
- ◆ PROTECTS PEDESTRIANS, cyclists and motorcyclists.
- ◆ HIGH ACCURACY – detects people (stationary and moving).
- ◆ AFFORDABLE solution.
- ◆ Provides ALERTS and AUDIBLE WARNINGS.
- ◆ STATE-OF-THE-ART AI TECHNOLOGY.
- ◆ Options for more ACTIVE SAFETY MEASURES.
- ◆ GREATER SAFETY and PEACE OF MIND – for drivers and fleet managers.
- ◆ Part of the MAX-SAFE SAFETY ECO-SYSTEM.





+61 7 3715 3715



info@sgescomax.com.au



www.maxsafe.com.au



17 Rodwell St, Archerfield Q 4108
PO Box 998, Archerfield Q 4108



Monday to Friday, 7.30am to 4.30pm



MAX-SAFE Support Assistance



Follow us on LinkedIn

MAX-SAFE REAR LOADER PEDESTRIAN PROTECTION

PROTECTING VRUs FROM REAR LOADER OPERATIONS

MAX-SAFE  | MAXIMUM
SAFETY
MADE BY **SGESCO**  **MAX**

The following are registered trademarks of
STARTER & GENERATOR EXCHANGE SERVICE PTY LTD
("SGESCO-MAX"):

- ◆ MAX-SAFE Maximum Safety®
- ◆ MAX-SAFE Reverse Watch®

The following are trademarks of
STARTER & GENERATOR EXCHANGE SERVICE PTY LTD
("SGESCO-MAX"):

- ◆ MAX-SAFE Anti-Rollaway Brake System™
- ◆ MAX-SAFE Reverse Watch Hooklift Option™
- ◆ MAX-SAFE Reverse Watch Trailer Option™
- ◆ MAX-SAFE Seatbelt Warning System™
- ◆ MAX-SAFE Forklift Safety Products™
- ◆ MAX-SAFE Speed Limiting™
- ◆ MAX-SAFE Location Speed Limiting™
- ◆ MAX-SAFE Side Watch™
- ◆ MAX-SAFE Corner Watch™
- ◆ MAX-SAFE Front Watch™
- ◆ MAX-SAFE Engine RPM Control™
- ◆ MAX-SAFE Audible Warning™
- ◆ MAX-SAFE Lifecycle Maintenance™
- ◆ MAX-SAFE 360° View System™
- ◆ MAX-SAFE 360° TrailerView System™
- ◆ MAX-SAFE Vision™
- ◆ MAX-SAFE Side View™
- ◆ MAX-SAFE Rear View™
- ◆ MAX-SAFE Front View™
- ◆ MAX-SAFE Corner View™