



CASE STUDY: **JJ'S WASTE & RECYCLING**

JJ'S MAKING BIN COLLECTIONS SAFER WITH AUSTRALIAN FIRSTS

In some key Australian firsts, Australian owned and operated waste management business, JJ's Waste & Recycling (JJ's), has installed five advanced MAX-SAFE safety solutions in nine new vehicles collecting general residential waste for Cassowary Coast Regional Council.

The suite of MAX-SAFE solutions – **MAX-SAFE Anti-Rollaway Brake System**, **MAX-SAFE Reverse Watch 2.0**, **MAX-SAFE Protect 360 AI**, including: **MAX-SAFE Front View**, **MAX-SAFE Corner View** (left/right) and **MAX-SAFE Rear View** – address blind spots to the rear, front and corners of of a waste collection vehicle while also preventing it from rolling away.

By using the most advanced sensor and AI technologies available on new dual control Volvo FE Side Loaders, JJ's vehicles are the safest waste collection vehicles – and heavy vehicles for that matter – operating in Queensland's north.

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



BUSINESS OVERVIEW

JJ's Waste & Recycling (JJ's) (formerly JJ Richards & Sons) has been a major provider of waste management services in Australia for over 90 years, collecting 2.5 million household bins every week.

The company works with over 60 councils across Australia – and for the last 25 years councils in New Zealand – to manage and improve waste reduction and recycling opportunities. JJ's has a strong commitment to improving health and safety standards for its staff, contractors and the community, which is equally matched by their council clients.

Notably, Cassowary Coast Regional Council in 2023 invited tenders for a new waste collection contract, stipulating pedestrian protection and active warning as part of this new contract requirement.

The Cassowary Coast council region is an LGA in Far North Queensland centred on the towns of Innisfail, Cardwell and Tully. Covering a large area of 4,702 square kilometres, the shire has a population of around 30,000 people living in town, coast and rural communities known for having the highest rainfall in Australia.

THE SAFETY CHALLENGE

The residential waste management contract for the Cassowary Coast council region involves different trucks for wet and dry waste, with wet waste collected weekly and dry waste collected fortnightly – all diverted to seven transfer stations across the region.

Each JJ's Waste & Recycling vehicle collects up to 1200 bins on a daily shift. Times that by nine vehicles and you have over 10,000 collection events on a typical week-day and 50,000 in any given week. It is a labour intensive job that calls for maximum safety and efficiency.

Aside from 30,000 local residents, migrant workers and an estimated 2 million tourists visit the Cassowary Coast region each year drawn to the attractions of the Wet Tropics and World Heritage Rainforest areas, popular Queensland island destinations and world famous Mission Beach.

These all add to the hazards of more vulnerable road users sharing roads and being unfamiliar with regular vehicle movements of waste collection vehicles, operated by JJ's (the Council's new waste collection contractor).

Garbage trucks have blind spots on all sides and corners of the vehicle, making it hard for drivers to see vulnerable road users and respond in time to prevent accidental collisions that can result in serious injuries, and sometimes fatalities.

With drivers often looking at mirrors and cabin controls, spotting pedestrians, particularly small children playing on bikes on the roads or verge, can be challenging.

This can be exacerbated during peak holiday periods with many vehicles parked on roadsides near major tourist spots, obstructing clear vision. The region also attracts many backpackers that can be hampered by how quickly they can move away from a vehicle.

Another risk element is reversing council collection trucks. There are situations where a truck will reverse into a laneway, cul-de-sac or holiday complex to collect garbage bins, because turning a heavy vehicle may be a challenge or impossible. The rear of a vehicle is one huge blind spot for drivers, making it extra dangerous for any VRU.

This is why the Cassowary Coast council contract stipulated pedestrian protection and active warning as part of the service delivery to avoid collision with any pedestrian of any age and at any location.



The safety solutions went beyond the council's safety expectations to provide superior protection of VRUs from moving vehicles and known blind spots. ”

MATTHEW REDMAN

JJ's Waste & Recycling Operations Manager for Cassowary Coast Regional Council Contract

THE SOLUTIONS

The MAX-SAFE solutions installed on the JJ's collection vehicles are:

1. MAX-SAFE Anti-Rollaway Brake System
2. MAX-SAFE Reverse Watch 2.0
3. MAX-SAFE Protect 360 AI, including:
 - MAX-SAFE Front View
 - MAX-SAFE Corner View (left/right)
 - MAX-SAFE Rear View

The Protect 360 AI and Reverse Watch solutions overcome vehicle blind spots at the front, corners and rear that drivers contend with when working on city and suburban streets and country roads.

MAX-SAFE Protect 360 AI solutions use AI cameras positioned at key points on a vehicle, with the cameras incorporating Machine Learning (ML) technology which has over 99.96% accuracy in detecting humans within a defined danger zone.

MAX-SAFE Reverse Watch 2.0 is a reversing sensor mounted on the rear of a vehicle that detects obstacles and people over a 50m² “danger” area behind a vehicle. The solution has a super-fast scanning and detection capability that calculates the speed of approaching objects and triggers braking before being in the “danger zone”.

The **MAX-SAFE Anti-Rollaway Brake System** is an active braking solution that serves two purposes:

- a) It ensures a garbage truck won't roll-away in the event of a driver neglecting to correctly apply the park brake before leaving their vehicle.
- b) It can be integrated with any MAX-SAFE Protect 360 AI or Reverse Watch solution to actively brake a vehicle if a person or object is identified in the ‘danger zone.’

When an active braking event happens due to the Reverse Watch sensor, drivers must press a button to over-ride the radar to be able to continue reversing in tight manoeuvres. Some drivers working to tight schedules can become impatient or careless in over-riding the Active Braking solution. Overlaying the **MAX-SAFE Rear View** Camera onto Reverse Watch places the control with the AI camera, ensuring it is always on and cannot be overridden. If there are identified VRUs behind a vehicle, the active braking technology has the ultimate control of braking and stopping the vehicle before hitting the person in the danger zone.

THE IMPLEMENTATION

In late 2024, JJ's became the first company in Far North Queensland to install a suite of MAX-SAFE Solutions, incorporating the latest AI advances, to address blind spots to the front, corners and rear of a vehicle, making them the safest heavy vehicles in Queensland's north.

JJ's secured the council contract due to offering more advanced safety solutions as standard on their new Volvo vehicles.

According to Matthew Redman, JJ's Waste & Recycling Operations Manager for Cassowary Coast Regional Council contract, the council's strong safety focus stipulated the need for pedestrian protection around front and corner blind spots. "Indeed, this is the first time pedestrian protection and active warning have been installed on vehicles fulfilling council contract requirements," he said.

In the past, many waste management vehicles and companies have long recognised the value of having Anti-Rollaway and some form of rear blind spot safety aid – with these typically being standard in council contracts.

For this new Cassowary council contract, the solutions delivered via MAX-SAFE leverage new AI and improved sensor solutions to give unmatched safety at the rear of a vehicle. They provide a more comprehensive safety solution and a proactive safety solution by ameliorating some of the issues that can arise due to driver intervention.

These are the safest heavy vehicles in Queensland's north.

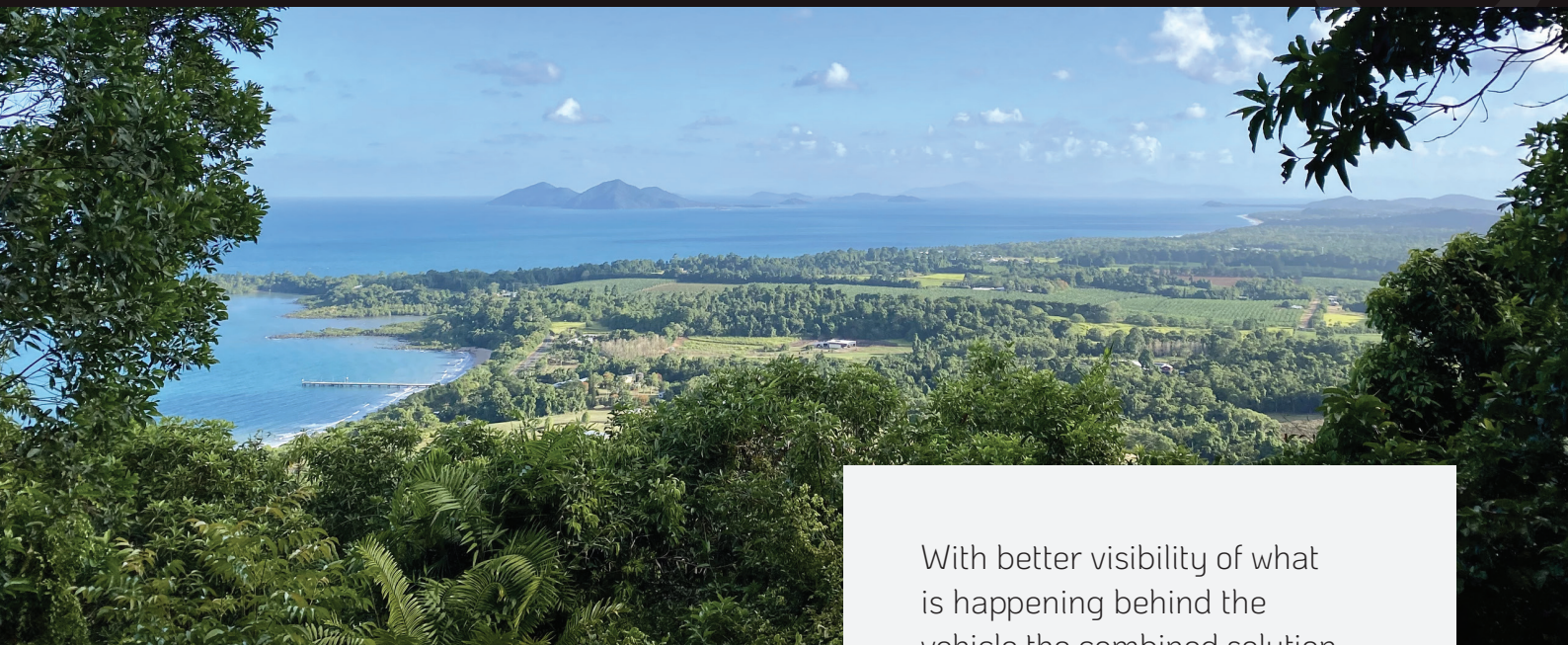
MATTHEW REDMAN | JJ's Waste & Recycling Operations Manager for Cassowary Coast Regional Council Contract

In responding to the tender, JJ's went beyond the safety expectations, said Matthew.

"With better visibility of what is happening behind the vehicle the combined solution overcomes human interference," said Matthew. "This improves safety outcomes for Vulnerable Road Users and reduces the risk of property damage, saving lives, mistakes, time and money."

The MAX-SAFE AI Camera solutions come in kit form and were installed on the trucks by MAX-SAFE Authorised Service Partner, BDS Mechanical, from the Cairns region.





THE FUTURE

The roll-out of the suite of advanced MAX-SAFE safety solutions will ensure that JJ's vehicles contribute to greater road safety and heavy vehicle pedestrian protection across the region. It will place JJ's in a good position when they tender for other contracts across Australia as they will have the experience, know-how and conviction to use solutions like MAX-SAFE to deliver the safety outcomes that are expected in 2025 and beyond.

With better visibility of what is happening behind the vehicle the combined solution overcomes human interference. The total solution improves safety outcomes for Vulnerable Road Users and reduces the risk of property damage, saving lives, mistakes, time and money.

MATTHEW REDMAN

JJ's Waste & Recycling Operations Manager
for Cassowary Coast Regional Council Contract

KEY BENEFITS

of the **MAX-SAFE solutions** include:

- ◆ PROVIDES ASSISTANCE to the driver.
- ◆ SAFEGUARDS blind spots at front and back of VEHICLE.
- ◆ PROTECTS VRUS, STAFF and PROPERTY.
- ◆ HIGH ACCURACY – detects people (stationary and moving).
- ◆ AFFORDABLE AI & sensor SOLUTIONS.
- ◆ SUITABLE for most ANZ CONDITIONS.
- ◆ Can provide ALERTS and AUDIBLE WARNINGS.
- ◆ STATE-OF-THE-ART GERMAN TECHNOLOGY.
- ◆ GREATER SAFETY and PEACE OF MIND – for operators and councils.
- ◆ DESIGNED, MANUFACTURED & SUPPORTED in AUSTRALIA.
- ◆ Part of the MAX-SAFE SAFETY ECO-SYSTEM.





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PROVIDING A SAFER WORK ENVIRONMENT

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With thanks to JJ's Waste & Recycling for provision of images.

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