USE CONNECTED VEHICLE DATA TO

PREVENT WORK ZONE ACCIDENTS

FREE DOWNLOAD

COMPASS

HOW CAN WE ACHIEVE VISION ZERO?

Vision Zero is a multi-national commitment to achieve a road network with zero fatalities or serious injuries.

Currently, over 100 road construction workers are killed in the US each year as a result of direct collisions with motor vehicles, making it one of the most dangerous workplaces. This is due to high traffic volumes and speeds.

Connected Vehicle data can be vital to understanding how infrastructure and driver behaviour shape hazardous conditions that are potentially life-threatening.

COMPASS

WHAT ARE NEAR-MISSES AND G-FORCES?

Near-misses are where a driver loses friction with the road surface. It is caused by harsh braking or harsh swerving, often to avoid collision with another vehicle or in response to roadside infrastructure. The intensity of a near-miss event is measured by g-force.

G-forces are a measure of acceleration and braking of a vehicle combined with its swerving. This can help identify potential instances of overtaking and the severity of the action.

Near-misses and high g-forces are leading indicators of high-risk roads and intersections where a crash is likely to occur and insight into what may cause it.

Driving Condition	Threshold G-force
Harsh Braking	> 0.6G
Harsh Acceleration	> 0.4G
Harsh Cornering (swerving)	>0.47G

COMPASS

REAL-TIME UPDATES FOR THE NEWELL HIGHWAY

The Newell highway is critical to the NSW economy and only main route between key locations for goods and essential services for residents.

Project managers on **Australia's largest-ever highway pavement upgrade worth $261 million** of sections of the Newell Highway pavement needed to gather information on traffic volumes and delay times to protect workers, adhere to acceptable travel time delays and communicate with road users. **Compass Real-Time API delivered live vehicle speed and volume data to the project managers**, enabling the delivery of accurate and timely instructions via variable message signage (VMS) to motorists, managing delays and minimising spillback.

Pavement upgrade on the Newell Highway (image source Transport for NSW)

Dynamic messaging to motorists using VMS (variable message signage) on the Newell Highway (image source Transport for NSW)

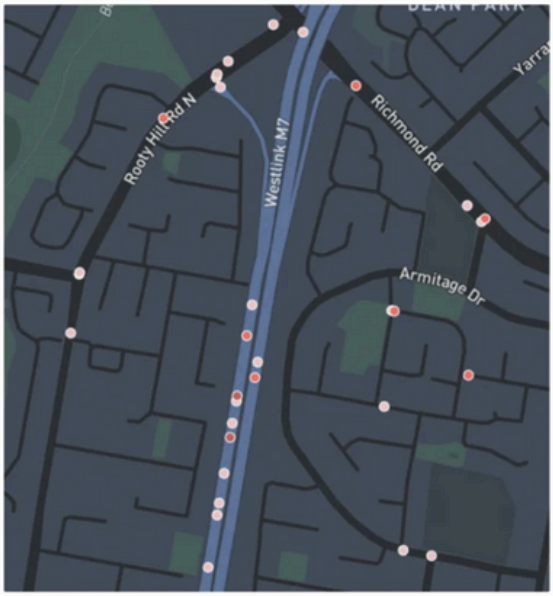
COMPASS

REDUCING NEAR-MISSES FOR BACK-OF-QUEUE PROTECTION

Transurban, one of the world's largest toll operators, found near-misses on the M7 mainline caused by spillback from the Richmond Road off-ramp exit.

The **spillback led to 72% of near-misses** occurring in peak hours. A year later, these near-misses translated into actual crashes, with 89% of crashes happening in the peak, with most being rear-end crashes.

Using Compass near-miss data, Transurban campaigned for traffic light phases to be changed at the intersection at the top of the offramp, giving more time for drivers to exit the offramp and preventing spillage onto the mainline to increase safety for all drivers. After reducing spillback onto the mainline, **near-misses reduced by over 50% at this location compared to 12 months earlier.**



Near-misses at the offramp in 2020

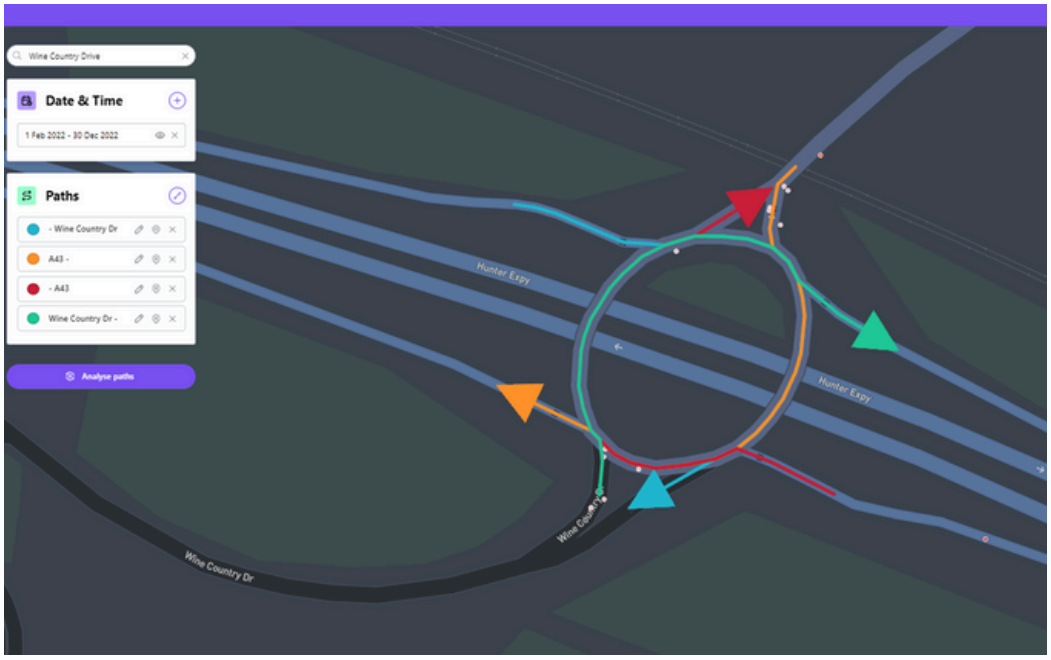
Near-misses at the offramp in 2021

COMPASS

CRASH INVESTIGATION OF HUNTER VALLEY BUS CRASH

In June 2023, a chartered bus overturned at the M15 Wine Country Drive interchange. **The crash resulted in 35 people killed or seriously injured (KSIs)**. Compass did an internal investigation of the crash location.

The vehicle path from Wine Country Drive (the location of the bus crash) includes a sharp bend. Data showed **a history of extreme braking and steering g-forces around the roundabout**. The average steering g-forces at this point in the road was 0.316g. For reference, Automatic Braking Systems (ABS) activate at around 0.47g. Speed analysis showed the 85th percentile to be travelling at 27mph, below the posted speed limit of 28mph. However, **heavy vehicles, including buses, could not negotiate the sharp bend and turn safely** if travelling over 26.7mph. Multiple near-misses also indicated a risky road environment.



Analysis on the Road Intelligence platform of the M15 Wine Country Drive interchange

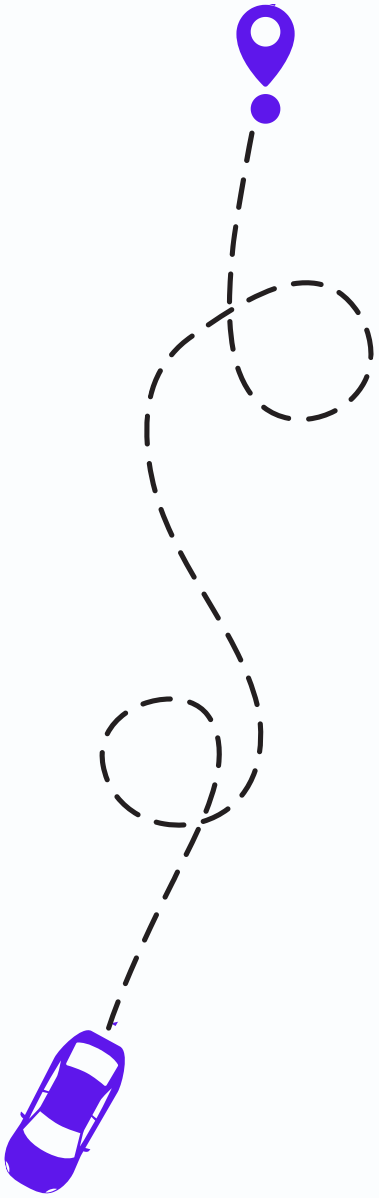
COMPASS

CONNECTED VEHICLE DATA FOR VISION ZERO

By harnessing the power of Connected Vehicle data, transport authorities across the USA can collectively work toward the goal of zero road deaths and tailor road safety interventions to prevent crashes.

This includes:

- Improving signage or low-visibility roadside infrastructure.
- Backspill caused by long red phases at signalised intersections.
- Speed limits which need to be revised to improve safety.
- Identifying patterns of behaviour caused by either consistently harsh braking or swerving events.
- Implementing new traffic calming measures.



COMPASSIOT.COM.AU/US

COMPASS

LET COMPASS HELP YOU SAVE LIVES

With the click of a button:

- **See key data** for any intersection in the USA.
- **Review key metrics** like speed, near-miss accidents and congestion.

All of this for a fraction of the cost and time of traditional survey methods. Our vision is to help transport professionals build better, safer and more resilient cities.

Join our expanding network of road authorities & organisations.

SALFO ENGINEERING & MANAGEMENT
University of Strathclyde Glasgow
IPWEA INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
GHD
KPMG
asongroup
ALTUS GROUP
AECOM
Deloitte.
Jacobs
EY Building a better working world

Click Here Now to Book a 15min Demo

COMPASSIOT.COM.AU/US