Heavy Vehicle Safety Initiative Final Report

DATA-DRIVEN DRIVER BEHAVIOUR IMPROVEMENT INITIATIVE
PROJECT NUMBER HVSI 722

Adbri

Edwin Ng

8 May 2025

Contents

Organisation Name – HVSI Final Report

Acknowledgements

Partners and Collaborators:

1) Cement, Concrete and Aggregates Australia

2) Wodonga TAFE - DECA

Grant Purpose and Objectives

Project Description:

The project proposed to the NHVR was to utilise driving behaviour data and analytics to provide drivers with real-time training and feedback as well as trends being shared across industry associations and training providers.

The four main components of the project are as below:

On-board Advanced Driver-Assistance Systems gather input from radar, video and the brake system to create a highly detailed and accurate data picture. The next-generation radar, camera, and brake system are linked to each other – constantly gathering, sharing, and confirming information.

A **Data Management and Analytics database** developed by vehicle telematics and software designers to gather data from the trucks on a regular frequency, that will then allow for driver benchmarking as well as further insights into key risk indicators.

Driver Training Material to be developed in partnership with driver training providers based on insights and addressing key risk indicators, as well as the potential for individual ongoing career and skills development for individual drivers.

Driver Scorecards will provide performance feedback for drivers and areas for improvement.

Project Objectives:

Objective 1: Providing Drivers with timely feedback, based on their own data, to encourage positive driving behaviour and habits.

Objective 2: Utilising data analytics and trends to allow organisations, industry bodies and Driver Training Organisations to efficiently prioritise resources and improve guidelines.

Objective 3: Revamping the driver training process towards a career-long professional journey

Expected Outcomes:

The expected project outcomes are listed in the below table

Project Specific Achievements

New insights into driver behaviour

Providing new insights into driving behaviour and events such as speeding, late braking, lane change and indicator usage on the road in a data-driven format.

Immediate and ongoing driver feedback

Ability to provide valuable feedback directly and immediately per event to the driver – increasing awareness where driver may not previously aware of their bad habits, and allowing positive habits to form.

Targeted coaching and training

Ability to utilise the learnings derived directly from the driver's on-road behaviour to be able to offer the drivers targeted coaching and intervention training program, representing a more proactive approach to road safety.

Career approach to driver education

Provide additional feedback and skills improvement opportunities to drivers, creating a more professional career-long approach to driver training.

Using driver behaviour to better train future drivers

Utilisation of driver behaviour data to inform the creation and enhancement of risk-specific training material and the creation and enhancement of industry guidelines

Enhanced engagement

Creating an Industry Steering Committee on driver education to share insights, distribute learnings and training material, and to create a collegial industry.

Organisation Name – HVSI Final Report

Summary of Project Activities

Activities Completed:

- A steering committee was formed with representatives from Adbri, NHVR, CCAA and Wodonga TAFE. A planning workshop was held to identify risks and develop plans around Risk Management, Change Management, Operational Technology and Financial.
- A Software/Hardware specification was developed after canvassing the technological options available from a detection standpoint, as well as dashboard development.
- A vendor selection process was held and pilot hardware procured. Work began on the back end reporting and dashboard.
- An initial pilot of 23 trucks across the country comprising the three use-types – concrete agitators, bulk material tippers, and cement tankers - were installed. The process was a voluntary program and 23 drivers signed up to provide feedback.
- Challenges during the program included issues such as placement location and orientation of device, sensitivity settings, false positives, and driver feedback loops.
- The pilot was initially successful, notably there was a case of possible sleep apnoea detected as a fatigue event, that was subsequently medically verified.
- Based on the initial success, the pilot was extended to about 50 trucks nationally.
- A dashboard was created to manage all of the data into a portal.
- Based on the trends observed, training videos were created. A future feature, where the relevant training video would be automatically assigned to the driver based on a threshold of detected activity, has been proposed for the future.
- A video outlining the collaborative approach between the drivers, Adbri and the NHVR has been created and is expected to have a joint public release in May 2025.

Supporting Documents:

Organisation Name – HVSI Final Report
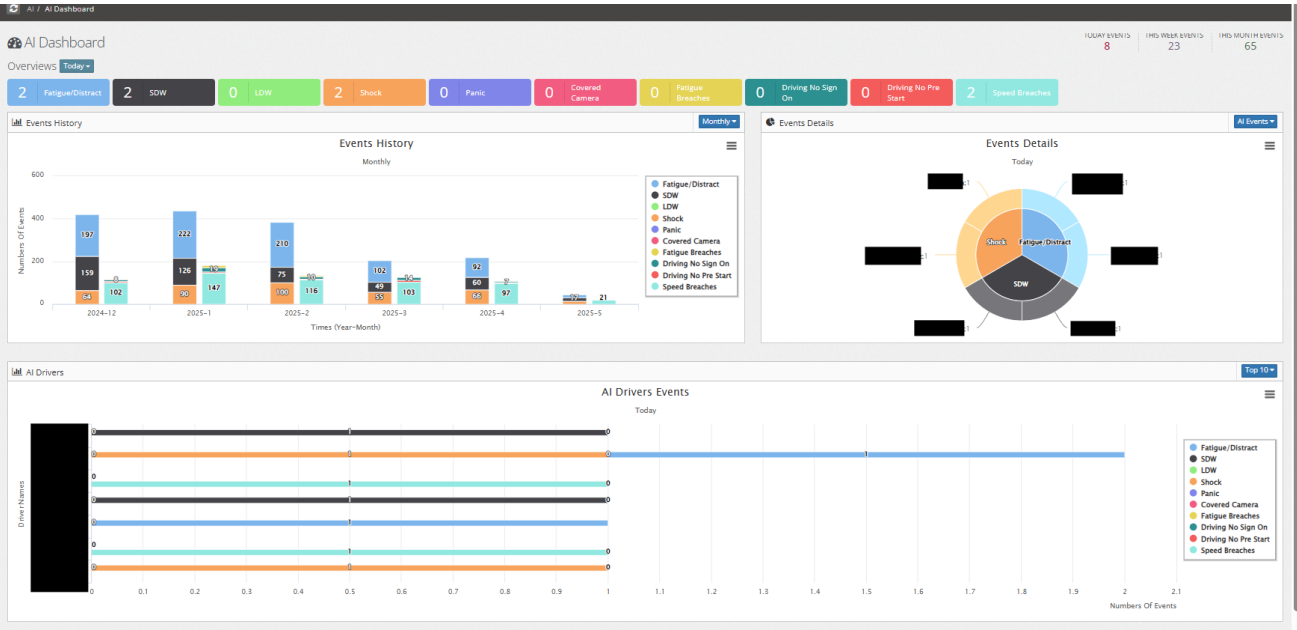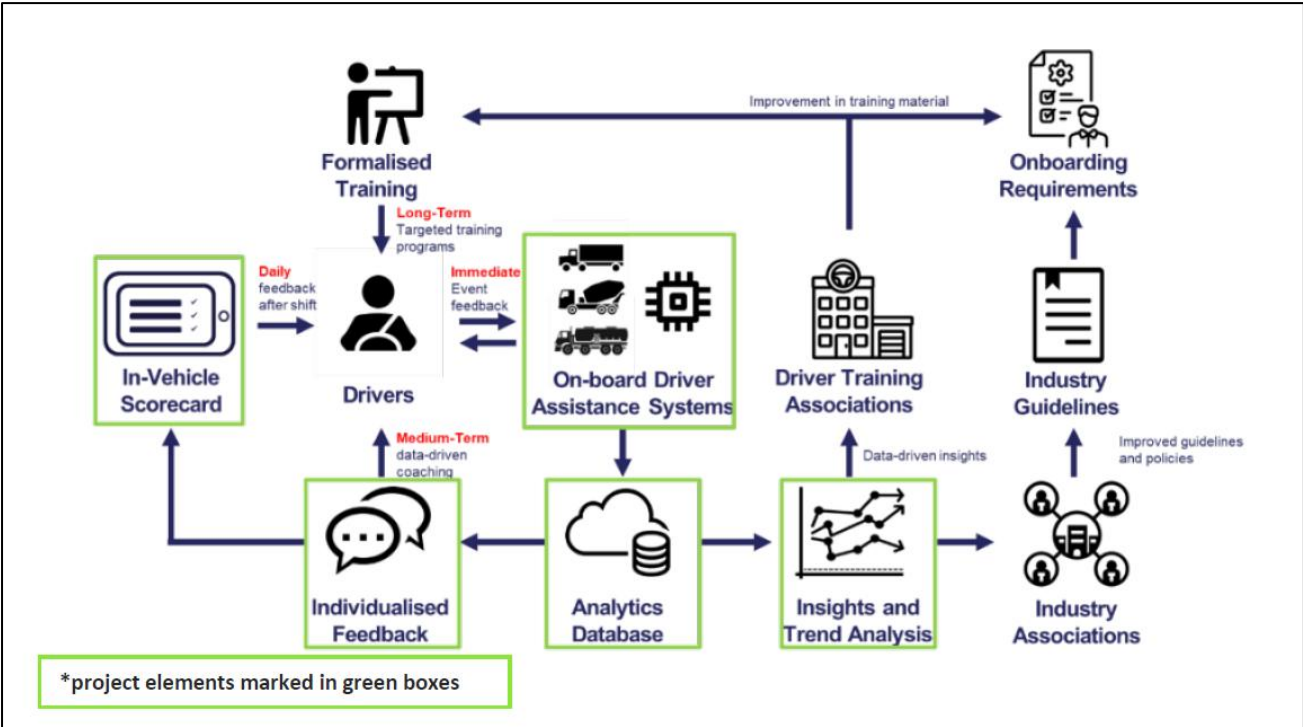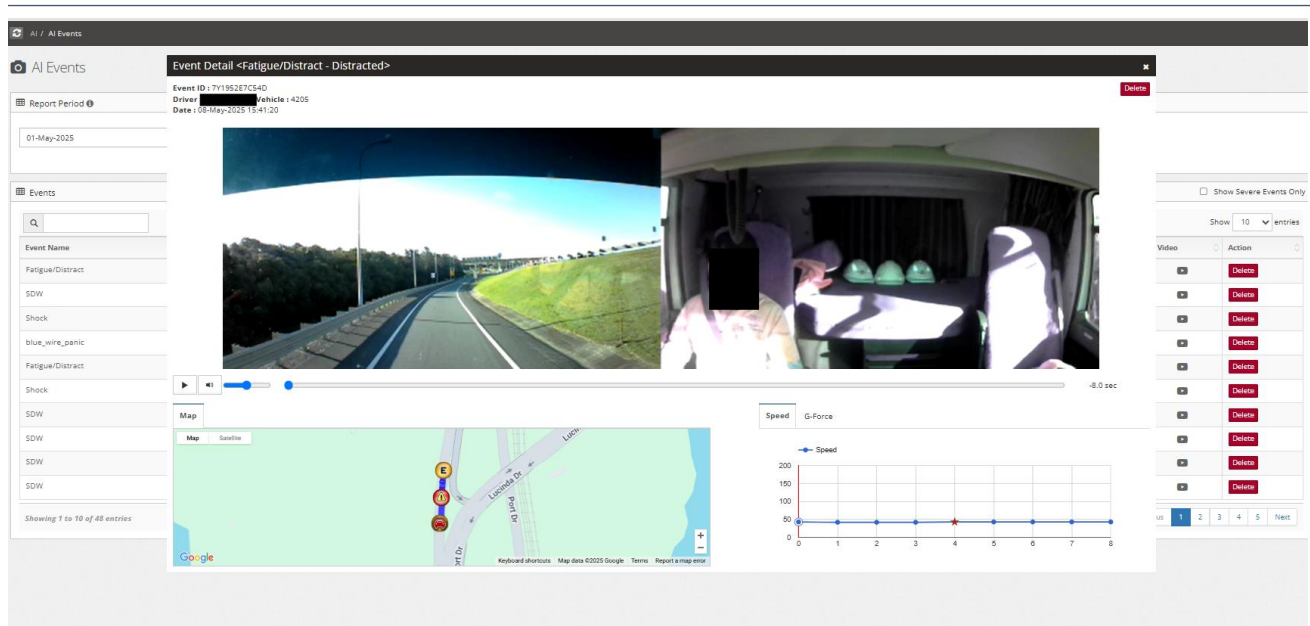
Timeline/Project Schedule:

ITEM	MILESTONE	DATE FOR MILESTONE COMPLETION / REPORT DUE DATE	ACTUAL COMPLETION DATE
Milestone 1	Execute Agreement.	Upon execution of Agreement	17 January 2023
Milestone 2	Complete stage 1	20 December 2022	12 December 2022
Progress Report 1	For reporting period 1 October – 31 December 2022	14 January 2023	N/A
Milestone 3	Preliminary Software & Hardware specifications developed	31 March 2023	14 April 2023
Progress Report 2	For reporting period 1 January – 31 March 2023	14 April 2023	14 April 2023
Milestone 4	SteerCo – Confirm decision to proceed	14 April 2023	14 April 2023
Milestone 5	Complete Stage 2	28 April 2023	30 June 2023
Milestone 6	Complete Stage 3	23 June 2023	15 July 2023
Progress Report 3	For reporting period 1 April – 30 June 2023	14 July 2023	15 July 2023
Milestone 7	Demonstration sessions completed nationally	31 August 2023	31 August 2023
Milestone 8	Finalise hardware/software specifications with developers	22 September 2023	22 September 2023

Organisation Name – HVSI Final Report

Progress Report 3	For reporting period 1 July – 30 September 2023	14 October 2023	15 October 2023
Milestone 9	Complete stage 4	22 December 2023	15 December 2023
Progress Report 4	For reporting period 1 October – 31 December 2023	14 January 2024	29 January 2024
Milestone 10	Initial results compiled and analysed	15 February 2024	31 January 2024
Milestone 11	Further training materials identified and scoped	30 March 2024	29 February 2024
Progress Report 5	For reporting period 1 January – 31 March 2024	14 April 2024	15 April 2024
Milestone 12	Training deployed internal	30 April 2024	31 Dec 2024
Final Report	Complete Stage 5 Provide final report to the NHVR for approval	30 June 2024	8 May 2025

Program Management

Overall

How was the project managed?

The project was generally managed well, costs were controlled and timeline was aligned up until the last milestone, where delays on the software vendor side necessitated a redesignation of timelines to ensure that a quality result was achieved.

Risk Management

What risks were identified during the project? How were these managed?

The biggest risk to this project was identified as stakeholder management, particularly amongst the driver cohort. To manage this, we engaged extensive consultation, where each driver who participated, did so under a completely voluntary basis, and received face-to-face consultation and briefing to what to expect.

Risk	Likelihood	Consequence	Mitigation strategy
Health & Safety Risk to people involved	Possible	High	Implement a WHS plan and follow through; Provide team member with suitable equipment & training; Restrict access at test area, barricades where necessary
Product does not match the business needs	Unlikely	High	Consult any major changes to design with key personal
Budget blowout	Possible	Medium	Agreed budget set in advance; Contingencies contained in budget; Keep detailed bill of expenditure against budge line items; Regular review of budget
Late completion of deliverables	Possible	Medium	Constant communication; survey of weekly available time
Lack of part supply to project	Likely	Medium	Constant communication with key personal about needs
Process not fully developed/ tested	Unlikely	Medium	Create a test plan for the development team and track regularly
Scope changes	Possible	Low	Constant communication with key personal about needs
Plant/Equipment failure	Possible	Low	Use equipment in accordance with manufacturer's instructions; Inspect plant/equipment for damage or faults prior to use, attended by only authorised personal
Traffic Incidents/Transport Failure	Unlikely	Low	Traffic Management in place where there is a potential impact on traffic; Limit vehicular movement in pedestrian aeras
Scope variations in the Software Development	Possible	High	Use a variation metric to measure the scope changes, set achievable timeframes for developers, Effective communication with the team

Organisation Name – HVSI Final Report

Stakeholder Management

Who was involved with the project?

Drivers and Managers within the organisation

How were they engaged/ how did they contribute to the project?

As above, an extensive in-person consultation was had with each person who participated in the project. An info sheet was provided to each participant, and sessions were held nationally.

Project Communications

Detail the marketing and advertising activities that occurred. Did the project receive any awards or recognition?

The project was featured internally in a Global Safety Best Practice initiative across the CRH group.

In terms of marketing, joint marketing activities were carried out by Adbri as well as the NHVR marketing team.

Company	Outlets	W/C 5th May - Build Up	W/C 12th May - Adbri official release date	W/C 19th or 26th May	June
Adbri	**Yammer**	Yes	Yes	x	x
Adbri	**LinkedIn**	Yes	Yes	Repost?	x
Adbri	**Internal Comms (email)**	Yes	Yes	x	x
Adbri	**External on website (publish on website)**	Yes	Yes	x	x
Adbri	**Link on the tablet (QR code?)**	x	x	x	Yes
NHVR	**Truck Show - Brisbane (21st to 23rd May)**	x	x	Yes -w/c 19th May	x
NHVR	**On the road newspaper - 47000 contacts**			**Yes - date TBC**	x
NHVR	**Will reshare on LinkedIn and Facebook**	x	x	Yes -w/c 19th May	x
NHVR	**Big rigs and owner drivers**	x	x	Yes -w/c 19th May	x
CRH	**CRH - globally**	x	x	x	Yes
CRH	**CRH best practice**	x	x	Yes - TBC if May/June	x

Organisation Name – HVSI Final Report

Achieved Outcomes and Impact

What Was Achieved:

Detail the project outcomes and how they align with the objectives and goals set at the start of the project. Include quantitative and qualitative data wherever possible, such as number of beneficiaries, program delivery, etc.

The project was successful beyond the initial scope. Whilst the original application only estimated a total of approximately 23 trucks across the country, the final scope was closer to 50, as we experienced organic demand from employees and even contractors. This was able to be achieved due to savings in the scoping process, cutting the price of the solution down.

Impact:

Describe the broader impact the project had, such as social, environmental, economic, or industry benefits. How has the project improved safety in the heavy vehicle industry?

Internally, the project was highlighted at our global safety conferences, reaching member operating companies within the CRH group in the US and Europe, with the intention that the idea will now spread and be adopted by any companies with similar challenges.

Externally, the project has been highlighted jointly with NHVR and Adbri, as well as through our vendors Netcorp Australia, and has received wide coverage. It has generated discussion on platforms such as LinkedIn (with reach extending to approximately 10,000 impressions across 5000 members) and is the first step towards using this approach on a large scale within the industry.

Project Evaluation

Project Success:

Did you meet your expected outcomes/ objectives?
The project exceeded the initial outcomes, and risks were relatively well identified and subsequently managed.

Lessons Learned:

Discuss any challenges faced during the project and how they were addressed. Highlight any lessons learned that may be relevant for future projects or other industry organisations.

What worked well? – Early and extensive consultation across parties affected by the change, as well as involving certain early adopters into the design of the feedback systems.

What didn't work well? – Trying to develop a full back-end solution (i.e. data analytics platform) at the same time as rolling out front-end technology which has a potential significant impact on the driver cohort was at some points quite a workload to juggle with the small team involved, although this is to be expected given a project of this nature had not been done before.

Sustainability and Future Plans

Sustainability:

Describe how the outcomes of the project will be sustained beyond the grant period. Will the project continue with other funding, be integrated into ongoing programs, or have long-term benefits?

Given the success of the initial and now extended trial, the next stage is to use the data and benefits achieved towards formalising this as a company safety requirement.

Next Steps:

Outline any future steps planned, such as follow-up actions, scaling of the project, or continued industry engagement.

In the future, we will be engaging our drivers as well as wider stakeholders such as unions in order to develop a formal governance policy for this technology, with the view of making this a mandated safety requirement in all future trucks.

Declaration and Certification

By submitting this final report, I certify that the information provided is accurate and complete to the best of my knowledge. I understand that the grant funding has been used in accordance with the terms and conditions outlined in the grant agreement.

Name of Authorised Person: EDWIN NG

Title: NATIONAL MANAGER - LOGISTICS

Signature:

Date: 8 May 2025