Heavy Vehicle Safety Initiative

Final Report

PROJECT:

HEAVY VEHICLE ROAD SAFETY HAZARD & RISK PROGRAM

PROJECT NUMBER:

HVSI 738

December 2025

Contents

Acknowledgements

Partners and Collaborators:

The WHS Foundation would like to thank the following organisations and personnel for their collaboration and support in the design, development and delivery of the project.

RaceKraft Simulations Pty Ltd – Jon Le.

- For design and supply of the computerised driving simulators.

AusQ (WA) Pty Ltd – Tegan Studsor.

- For regional support in Bunbury in sourcing candidates and providing Bunbury WA training venue. Also, for providing heavy vehicles for practical training (vehicle pre-start and inspection) in Bunbury.

Main Roads Western Australia (MRWA).

- MRWA for including promotion of the newly developed program and hosting a simulator display at an industry heavy vehicle event arranged by MRWA for the HV industry on 15 October 2025 in Bunbury WA.

Fire and Safety Australia (FSA) – Steve McLeod.

- FSA provided heavy vehicles for practical training (vehicle pre-start and inspection) in Perth for the Perth courses.

Department of Education Southwest Education Region - Annie Paterson

- For support in facilitating contacts and bookings through the Southwest schools in the VET and workplace learning and career space.

Southwest Community College – Taryn Glasson.

- For support as the Leaving to Learn Coordinator by communicating with suitable students to attend the training offered by our project.

Ridgeview Secondary College – Tanya Pratt.

- For support as the VET Coordinator who actively promoted our program with her student cohort providing several suitable attendees who attended our training.

South Regional TAFE Collie Campus - Michael Wilts.

- For support as a lecturer in HV driver operations. Reviewed and provided feedback on our training materials and actively promoted our training course to suitable student candidates.

Acknowledgment of other Funders:

The WHS Foundation would like to thank the National Heavy Vehicle Regulator (NHVR) for its continued support during the delivery of this project. Acknowledgement and thanks to NHVR grant manager Janelle Kennerley for her proactive and positive assistance in negotiating necessary changes to the project to ensure that project goals could be achieved and the project was successfully delivered. Also, thanks to Zachary Stewart as the NHVR's subject matter expert (SME) in review of developed training materials and selected units of competency.

Grant Purpose and Objectives

Project Description:

The program was focused on attracting those from minority groups currently wanting to gain industry experience and start their career in the heavy vehicle transport sector.

The core groups that were targeted for participation in the project included vocational students from local high schools, TAFE students, those unskilled workers in the transport industry seeking to progress to heavy vehicle operations, and minority and disadvantaged groups including women returning to the workforce, young people, and candidates whose first language is not English.

The project was initially titled Heavy Vehicle Road Hazard Identification & Avoidance Program but was amended during the project to be called the Heavy Vehicle Road Hazard & Risk Program.

The reason for the change was to more accurately reflect the contemporary road safety approach and language focussed on the identification and understanding of road hazards and focus on risk management, rather than in hazard avoidance.

Project Objectives:

The summarised project deliverables for the project included the following:

1. Develop a training program and trainers to better equip and prepare individuals seeking to enter the heavy vehicle transport workforce to have increased awareness of heavy vehicle road hazards and road safety.

2. Purchase install and commission a Mobile Driving Simulator Unit comprising of two virtual reality driving simulator computer modules encased in a customised training container forming a trailer to be towed by a designated utility motor vehicle for use as part of the program providing students with a simulated heavy vehicle road driving experience.

3. Attract suitable candidates from diverse and minority backgrounds seeking to enter the heavy vehicle transport industry to deliver training improving skills and competence.

4. Deliver the program to two select groups of 15 candidates (total 30) involving the following:

    a. Two-day training course comprising heavy vehicle road transport hazard and risk theory and safety considerations; and

    b. Practical driving experience in the purpose-built heavy vehicle driving simulator.

5. Develop a national recognised training (NRT) skill set of three units of competency, to be approved by the NHVR, as a suitable set of NRT units to provide a good introduction and knowledge competency for those entering the heavy vehicle transport industry skill, and as a pathway for further transport-related qualifications.

Expected Outcomes:

All course attendees who successfully complete the competency requirements will receive a course Certificate and a Statement of Attainment for passed NRT Units of Competency.

The units of competency achieved will assist the students in employment prospects in the road transport heavy vehicle industry and assist in gaining entry to and in furtherance of undertaking further road transport industry NRT qualifications.

Summary of Project Activities

Activities Completed

Procurement of Heavy Vehicle Mobile Driving Simulator Unit

The first activity in delivery of the project was to procure the HV Mobile Driving Simulator Unit.

The Mobile Driving Simulator Unit comprised of two virtual reality driving simulator computer modules encased in a customised trailer forming a training container. The training container was towed by a designated utility motor vehicle which also was used to transport the trainers and carry equipment to assist in setting up of the trailer unit.

The key feature of the Mobile Driving Simulator Unit was for use as part of the program providing students with a simulated heavy vehicle road driving experience. This was a critical and important part of the program as the demographics of the students to be targeted to undertake the program meant that most were unable to hold HV learner driver licenses to undertake practical driving experience in an actual heavy vehicle on the road.

RaceKraft, a specialist driver training center and vehicle simulator designer and developer, was identified and selected to design and manufacture two computerised virtual driving simulator modules to be part of the Mobile Driving Simulator Unit.

The simulator modules, each featuring computer hardware, triple-monitor displays, steering wheels, pedals, sound systems, motion actuators, and other vehicle driving-related controls provided both a physical aspect and virtual experience of driving a heavy vehicle.

To ensure safe and effective operation, comprehensive support documentation including a safety induction guide, user manual, and troubleshooting guide was developed and provided by RaceKraft.

The simulator units were installed side-by-side within a custom-built trailer, which was outfitted with integrated air-conditioning, lighting, adjustable panels, and an onboard generator to enable standalone operation in regional and remote locations without electrical mains power supply.

A further description of the virtual driving software and the use and features of the Mobile Driving Simulator Unit appears below at heading ‘Delivery of the Project Training Sessions’.

Training Program Development

In conjunction with the National Heavy Vehicle Regulator (NHVR)’s Subject Matter Expert (SME), the Heavy Vehicle Road Hazard & Risk Program training course was developed.

The developed training program delivered over a period of two full day course plus driving experience in a heavy vehicle driving simulator, consists of the following six training modules:

- Module 1 – Introduction to the heavy vehicle industry.
- Module 2 – Hazard and risk management on the road.
- Module 3 – Heavy vehicle operational factors.
- Module 4 – Safe driving behaviours.
- Module 5 – Practical inspection of heavy vehicles.
- Module 6 – Introduction to heavy vehicle driving simulator.

Training Materials

A range of training materials and resources were developed for the Heavy Vehicle Road Hazard & Risk Program training course. See below under heading Supporting Documents.

Nationally Recognised Training Skillset

To meet one of the project deliverables, relevant nationally recognised training (NRT) units of competency were selected and developed to form a skillset that were aligned with the developed Heavy Vehicle Road Hazard & Risk Program training course.

Three NRT units were selected by the WHS Foundation, and approved by the NHVR, as a suitable three-unit skillset to provide a formal training certificate outcome (certificate of attainment) for students undertaking the course. The three NRT units of competency skillset are as follows:

- TLIC1051 – Operate commercial vehicles.
- TLIB0002 – Carry out vehicle inspection.
- TLIF2010 – Apply fatigue management strategies.

The above three units were selected for two main reasons. Firstly, because the units are available heavy vehicle industry, transport and safety related units. Secondly, because the three units comprise three of the five core units of competency that are part of the transport industry formal qualification – Certificate III in Driving Operations.

Therefore, a student who successfully undertakes the Heavy Vehicle Road Hazard & Risk Program, including successfully completing the assessment components of the three NRT units, will have completed relevant units in, and has a pathway for entry, to the Certificate III in Driving Operations.

The WHS Foundation is registered with the Australian Skills Quality Authority (ASQA) as a registered training organisation (RTO) registration number 1907.

As part of the project delivery, the WHS Foundation procured basic training materials for each of the above units, further tailored and developed the related training materials, aligned the new unit training materials to the course content and vice versa, and put each of the units of competency on the WHS Foundation's RTO scope of training units and qualifications.

The WHS Foundation's RTO review and reregistration took place during the latter stages of the project delivery. ASQA's renewal review risk assessment considered all units and qualifications on our scope including the three above mentioned units related to the project delivery.

ASQA determined on 9 December 2025 that no registration or renewal risks were identified and the WHS Foundation's RTO registration was renewed by ASQA for the maximum renewal period of seven years to 10 December 2032 .

Delivery of the Project Training Sessions

A total of five training courses, comprising of three pilot sessions and two nationally recognised training (NRT) courses were delivered across two locations:

- Aus Q Training Centre Bunbury - 10 Allnut Court, Bunbury.
- WHS Centre North Lake - 128 Farrington Road, North Lake.

Each course spanned two days, structured according to a standardised schedule.

The first day focused on instruction and was primarily dedicated to the delivery of training content through presentation slides and interactive group discussion and group learning exercises.

The second day focussed on practical simulator driving exercises and assessments, of which there were three primary assessments:

- Practical pre-start inspection of a heavy vehicle using a real heavy vehicle.
- A written test based on the information contained in the training materials delivered.
- A practical simulated driving test in the Mobile Driving Simulator Unit.

The structure of Day 2 allowed students to rotate through practical driving practice and time in the Mobile Driving Simulator Unit while also rotating through the undertaking of the three assessments.

Student sessions in the Mobile Driving Simulator Unit were conducted in rotations of four participants, two active users and two observers, under the supervision of a trainer / assessor.

The dynamic, busy structure of Day 2 kept all student actively engaged and positive, enabling assessments to be undertaken and achieved with confident.

The training and assessment components of the program incorporated Truck World Driving School resources and BeamNG simulation software.

Both training programs included a variety of pre-designed scenarios, such as freight delivery and vehicle parking, and featured realistic driving challenges like poor road conditions and interactions with other simulated road users.

The motion actuators enhanced the realism by simulating road surfaces and driving dynamics, while the use of authentic vehicle controls and techniques further contributed to an immersive driving training experience for the students.

Two WHS Foundation trainers and assessors were used to conduct Day 2 exercises and assessments which provided good oversight, opportunity for student engagement, coaching support, supervision and continued learning by students.

Training Course Schedule

The dates and locations of the five pilot and two NRT courses were as follows:

Pilot Courses:

- Pilot course (Bunbury): 29 Jul 2024 – 30 Jul 2024.
- Pilot course (Bunbury): 29 Aug 2024 – 30 Aug 2024.
- Pilot course (North Lake): 30 Sep 2024 – 1 Oct 2024.

Nationally Recognised Training Courses:

- NRT course (Bunbury): 8 May 2025 – 9 May 2025.
- NRT course (North Lake): 15 May 2025 – 16 May 2025.

Supporting Documents

A range of training materials and resources were developed for the Heavy Vehicle Road Hazard & Risk Program training course as follows:

- PowerPoint presentation for each of the six modules.
- Course Outline.
- Course Schedule.
- Student Guide.
- Student Assessment Workbook.
- Assessor Guide.
- Activity & Assessment Answer Guide.
- Student Driving Logbook.
- Heavy Vehicle Pre-Inspection Checklist.
- Simulator Operating Manual.
- Simulator Troubleshooting Guide.

This courseware is digitally stored on WHS Foundation's internal SharePoint database and are for use in the conduct of future courses.

Timeline / Project Schedule

The project commenced in March 2023 and was scheduled for completion by January 2024.

However, a range of factors necessitated changes to the timing and schedule of the program including the following:

- Initial delays in manufacture and receiving of the Mobile Driving Simulator Unit.
- Two partner organisations that had initially committed to assist WHS Foundation in delivery of the program withdrawing from the project.
- Changes to WHS Foundation key project management and training personnel through resignation of several key personnel over the course of the project requiring replacement.
- Negotiation with the NHVR over requirement to change aspects of the project scope and training materials design and development.
- Additional time and resources being required to complete the project than had been originally estimated and expected at project commencement.

Consequently, the project was considerably delayed and required several amendments to the funding agreement between the NHVR and the WHS Foundation.

Two deeds of variation to the funding agreement were agreed in May 2024 and February 2025 reflecting agreed changes to the project schedule, deliverables and timeline.

Ultimately, the project was completed in October 2025 following delivery of the second NRT unit to the student group.

Program Management

Overall

As outlined above under heading Timeline / Project Schedule, the project was considerably delayed from commencement in March 2023 for the reasons stated above.

Following amendments to the funding agreement between the NHVR and the WHS Foundation, captured in two deeds of variation, the project was ultimately completed in October 2025.

Program management was carried out select members of the WHS Foundation team with roles and responsibilities including:

Project Manager – Primary liaison with the National Heavy Vehicle Regulator (NHVR) project contact. Responsible for delivering regular project updates and milestone reports throughout the duration of the project. Feedback from the NHVR subject matter experts (SMEs) was received by the strategic team and communicated to the technical project team through a series of consultation sessions and formal project meetings. Project management and issue resolution.

- **Project Coordinator** - Principal recipient of strategic direction and feedback and responsible for evaluating the input, allocating tasks accordingly, overseeing all technical, administration and training deliverable components of the project, and authorising any changes or updates to the project deliverables.
- **Training Team** – Several trainers comprised the training team. Responsible for all technical courseware design and development included all necessary training materials to ensure alignment with the project scope. Also developed technical skills in set up, operation and maintenance of the Mobile Driving Simulator Unit.
- **Finance and Administration Team** - Responsible for all program finance, administration, marketing, communication and student recruitment, engagement, and stakeholder management. Also responsible for managing the training materials and ensuring compliance with RTO requirements for the NRT units.

As outlined above under heading Timeline / Project Schedule, the project was considerably delayed from commencement in March 2023 for the reasons stated above.

Following amendments to the funding agreement between the NHVR and the WHS Foundation, captured in two deeds of variation, the project was ultimately completed in October 2025.

Risk Management

Several risks were identified, and materialised, during the delivery of the project which firstly resulted in delays and changes to the project but secondly were able to be managed to enable successful completion of the project as follows.

A brief summary of the project risks which materialised impacting the project are as follows:

- Initial delays in manufacture and receiving of the Mobile Driving Simulator Unit.
- Two partner organisations that had initially committed to assist WHS Foundation in delivery of the program withdrawing from the project.
- Changes to WHS Foundation key project management and training personnel through resignation of several key personnel over the course of the project requiring replacement.

- Negotiation with the NHVR over requirement to change aspects of the project scope and training materials design and development.
- Additional time and resources being required to complete the project than had been originally estimated and expected at project commencement.

Stakeholder Management

The stakeholders included the partners and collaborators and NHVR representatives detailed under the Acknowledgement heading on page 2 of this report.

Throughout the project, multiple consultations were conducted with both NHVR and stakeholders to progress the project including equipment acquisition, project design, review and improvement of training materials, and project delivery.

Given the changes to the scope of the project discussed above, the ongoing communication with the NHVR was essential for approval of project changes and agreeing the content and quality of the training materials to align with the project's scope and objectives.

Regular communication occurred via the WHS Foundation project management team with all other stakeholders to ensure project deliverables.

Project Meetings

A formal Program Development Committee (PDC) meeting was conducted in June 2024 which involved the NHVR subject matter expert (SME).

Further ongoing communication was had with the WHS Foundation training team and the NHVR SME to develop and refine the training materials and select the NRT units.

Throughout the project, regular project meetings occurred within the WHS Foundation project management team to monitor progress and achieve deliverables.

Issues

The project experienced a range of issues as set out above under the headings Timeline/Project Schedule and Risk Management. These issues, restated again, were as follows:

- Initial delays in manufacture and receiving of the Mobile Driving Simulator Unit.
- Two partner organisations that had initially committed to assist WHS Foundation in delivery of the program withdrawing from the project.
- Changes to WHS Foundation key project management and training personnel through resignation of several key personnel over the course of the project requiring replacement.
- Negotiation with the NHVR over requirement to change aspects of the project scope and training materials design and development.
- Additional time and resources being required to complete the project than had been originally estimated and expected at project commencement.

Consequently, the project was considerably delayed in required several amendments to the funding agreement between the NHVR and the WHS Foundation in May 2024 and February 2025.

Ultimately, the project was completed in October 2025 following delivery of the second NRT unit to the student group.

Achieved Outcomes and Impact

What was achieved

What was achieved in the project has been detailed above under heading Summary of Project Activities, which included the following:

- Procurement of the Mobile Driving Simulator Unit comprised of two virtual reality driving simulator computer modules encased in a customised trailer forming a training container. The training container is towed by a designated utility motor vehicle which also was used to transport the trainers and carry equipment to assist in setting up of the trailer unit.
- Development of a detailed two-day Heavy Vehicle Road Hazard & Risk Program training course consisting of six training modules supported by a range of training materials and resources.
- Selection of three nationally recognised training (NRT) units of competency developed to form a skillset and aligned with the developed Heavy Vehicle Road Hazard & Risk Program training course.
- Conduct of a total of five training courses, comprising of three pilot sessions and two nationally recognised training (NRT) courses were delivered across two locations in Perth and Bunbury WA.
- The training and assessment content for the training courses included a Day 1 theory session with a written assessment and a Day 2 practical session which included a pre-start vehicle inspection and a practical simulated driving assessment in the Mobile Driving Simulator Unit.

Impact

A total of 46 students attended and successfully completed the Heavy Vehicle Road Hazard & Risk Program training course across the five courses delivered.

Of those, 31 students obtained a Certificate of Attendance for completing the pilot courses, while 15 students obtained a Statement of Attainment for successfully completing the Nationally Recognised Training (NRT) units of competency skillset.

Participants represented a diverse range of backgrounds that are currently in minority in the heavy vehicle transport industry. Participants included young people, women, indigenous people, and people from non-English speaking backgrounds.

60% of student were young people under the age of 20 who were interested in the heavy vehicle transport industry and were attracted to the course as an initial pathway to the industry.

Follow-up interviews with the 15 participants who successfully completed the NRT courses indicated a high level of satisfaction with the course with half of participants indicating that the qualification led to employment in the heavy transport or broader transport and plant / mechanical industries.

Overall, student feedback was highly positive. The simulator component received particular praise, especially from younger students, who regarded it as an innovative and engaging training method that significantly enhanced their learning experience.

Project Evaluation

Project Success:

As stated above the project was considerably delayed and required several amendments to the funding agreement between the NHVR and the WHS Foundation.

Two deeds of variation to the funding agreement were agreed in May 2024 and February 2025 reflecting agreed changes to the project schedule, deliverables and timeline.

Ultimately, the project was completed in October 2025 following delivery of the second NRT unit to the student group meeting the project deliverables as reflected in the agreed and approved variations to the funding agreements.

By way of snapshot, the project delivered what it set out to deliver. Refer to the detail above under heading Summary of Project Activities for the detail of what was achieved and refer to the heading 'What was achieved' on the previous page for a brief overview of achievements.

Considering the difficulties and delays faced by the project, as outlined in this report, it is considered that the project was a success and achieved its deliverable, as modified by the approved variations to the Funding Agreement.

One of the most pleasing aspects of the project was learning through the project evaluation process that many of the students who had completed the NRT units and gained the Certificate of Attainment for those units, were able to utilise those certifications to obtain employment in the heavy vehicle transport or broader transport related industries.

Of interest was that one of the participants was a lecturer at TAFE in the transport industry and attended the course as professional development to improve his knowledge of the heavy vehicle transport industry to improve his teaching delivery at TAFE. This participant gave very positive feedback on the structure and content of the course as well as the innovative and engaging aspect of using the simulators for driver experience.

A highlight of the project was participation in a heavy vehicle event in regional WA with on our project partners, Aus Q Training and Main Roads Western Australia. The event was attended by approx. 50 people from heavy vehicle transport industry in the South West region of WA.

At the event, we presented to the group about our project and demonstrated the Mobile Driving Simulator Unit. The event assisted in developing contacts and connections that contributed to sourcing participants to the training.

Lessons Learned

As stated above under headings Timeline, Risk Management and Issues, the project experienced several risks and issues. Many lessons were learned from those challenges which promoted positive and proactive communication and negotiation with NHVR to agree to variations to the Funding Agreement.

One of the practical challenges faced was achieving the originally agreed to deliverable of providing 20 hours of driving experience, through a combination of the simulator and by a transport work experience placement. This was impractical to achieve due to difficulty in placement with external companies in vehicles due to a range of issues including licencing, insurances, working with children's requirements, and safety and security of students with contracted or third-party drivers.

Sustainability and Future Plans

Sustainability:

A legacy of the project is the WHS Foundation now owns the following plant, equipment and training materials:

- Mobile Driving Simulator Unit comprised of two virtual reality driving simulator computer modules encased in a customised trailer forming a training container. The training container is towed by a designated utility motor vehicle which also was used to transport the trainers and carry equipment to assist in setting up of the trailer unit.
- Training materials for the detailed two-day Heavy Vehicle Road Hazard & Risk Program training course consisting of six training modules supported by a range of resources.
- Three nationally recognised training (NRT) units of competency developed to form a skillset and aligned with the developed Heavy Vehicle Road Hazard & Risk Program training course on our RTO scope of training units

The Mobile Driving Simulator Unit is an inherent part of the training resources as the conduct of the training utilises the unit for the experiential learning component of the training and assessment.

Additionally, the WHS Foundation has developed knowledge and skills in work health and safety, including road safety, associated with the heavy vehicle transport industry in our project management team and training delivery team.

The WHS Foundation is presently preparing its Strategic Plan from which will flow our operational plans and training plans for the 2026 year.

We intend to offer training courses this year utilising the Mobile Driving Simulator Unit and training materials as both public course and corporate course offerings.

Corporate course opportunities include the WHS Foundation providing training as part of high school vocational education programs to assist young people obtain skills, knowledge and interest in obtaining employment in the heavy vehicle transport and related industries.

There is also opportunity for the WHS Foundation to utilise the Mobile Driving Simulator Unit to promote heavy vehicle transport industry safety and health and events.

Next Steps:

The next steps include confirming the relevant courses for delivery in 2026, adding these to our training calendar, developing marketing and promotional materials to attract students, and engaging with our project partners and the broader industry to obtain relevant participants and identify opportunities to conduct events.

Appendix 1: References and Related Documents

A range of related documents were provided to the NHVR throughout the project with the various Progress Reports including the following:

1. Full suite of training materials.
2. NRT unit training documents.
3. Project management minutes.
4. Project logo.
5. Technical manuals for the Mobile Driving Simulator Unit.
6. Communications plan.
7. Marketing report.
8. Course promotional materials.
9. Marketing materials.
10. Examples of communications.
11. Various forms and checklists.
12. Training certificates.
13. Student assessment and feedback.
14. Tax invoices of plant and equipment expenditures.
15. Photographs.

As the above document have previously been provided to the NHVR, they are referenced in this report as relevant related documents.