

Road Vehicle Incursion

What is the situation?

An encroachment of a vehicle or part of a vehicle over the boundary between Network Rail and any third party at an overbridge or neighbouring site.

There are 3 primary types of area where RVI (Road Vehicle Incursion) is possible. These are:

- Overbridge sites carrying single carriageway roads, dual-carriageway roads and motorways
- Neighbouring sites where road and rail are beside each other
- Areas adjacent to a railway line where vehicles regularly park

RVIs represent both a risk to railway users and vehicle users using infrastructure in close proximity to the railway.

Whilst there can be a large and varied reasons why a vehicle can become errant, the most severe incidents occur when the vehicles are not contained to entering the railway

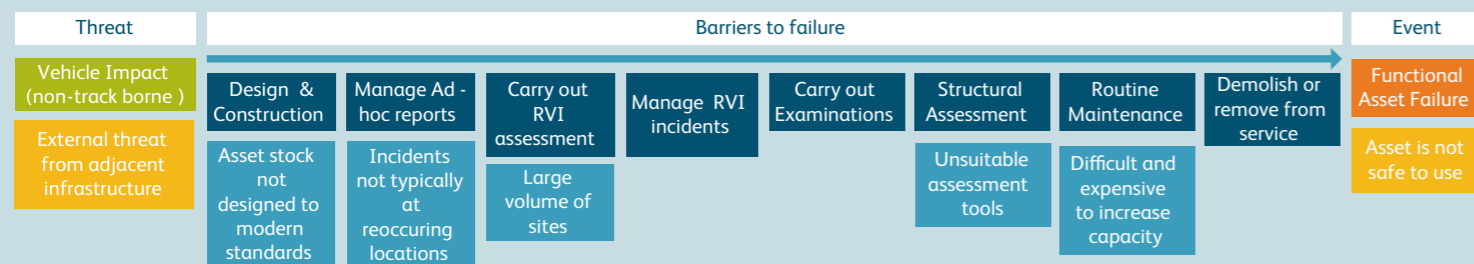


fig1. 10,620 identified adjacent RVI sites



fig2. Infrastructure damage following vehicle collision

Analysis of causes



Priority problems

Specific priority problems

- Vehicles entering the railway environment
- High number of sites still requiring mitigation measures
- Alerting railway when boundary is breached

Related goal

- Provide restraint to errant vehicles
- Stop vehicles in close proximity to the railway
- Restrain vehicles in areas with little available space
- Reduced cost of RVI mitigation
- Automated system to inform railway of incidents

Benefit

- Safety benefit – stop vehicles reaching the railway
- Cost saving enabling more sites to be mitigated
- Safety benefit – Preventing trains striking vehicles on the track

Specific research needs

To address these challenges it is expected that R&D actions will need to address the following aspects:

- Solutions which prevent vehicles entering onto the railway environment which can contain the largest vehicles on the road network.
- Difficulties in attaining full network coverage. Lack of technology to identify RVIs from imagery and physical sensors will require significant infrastructure to enable remote monitoring (power and telecoms).
- What preventative technologies are available which improve on conventional solutions and are less expensive? Is there technology used in a different industry which could be developed and applied to this challenge?

Expected impact & benefits

- Methods of identification for where road vehicle incursions can happen (i.e. technologies that can identify the geographical location of those sites)
- Novel technologies for capturing location and risk data based on road and rail configurations
- Digital recording of risk assessments
- Means of protecting the railway from vehicle incursion, beyond what is currently used
- Remote technology to record and notify following collision / damage of a boundary measure (e.g. a fence)
- Identifying cost efficient re-enforcement measures