CASE STUDY

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The Challenge

This project builds on CPC's contribution to a 2022 Department for Transport (DfT) commissioned study on interventions to improve transport safety for women and girls. This follow-on project assessed the feasibility of creating a National or Regional Incident Database (NID/RID) to better address violence against women and girls (VAWG) across UK public transport. The team interviewed key stakeholders at potential trial locations, including areas where the CPC/NTU could strengthen future partnerships.

While some data standardisation exists - such as Transport for London's (TfL) multimodal system and the British Transport Police's (BTP) rail-wide processes - incident data elsewhere remains highly fragmented. Hundreds of bus operators, multiple train operating companies, and over 40 police forces record incidents differently, and most policing systems lack a consistent flag or category for bus-related VAWG incidents.

Fragmentation is compounded by incompatible digital systems, differing definitions of VAWG, and varied reporting formats, all of which limit the ability to integrate data, track trends, or coordinate action across jurisdictions. Ethical and legal challenges, including GDPR requirements, unclear data ownership, and inconsistent governance structures, further complicate efforts to centralise reporting. Many organisations also lack the capacity or infrastructure needed to securely manage sensitive data.

Public trust in reporting mechanisms is also low. Women and girls, particularly from marginalised communities, often do not report incidents due to fear, stigma, or inaccessible channels. Limited inclusive, multi-channel reporting tools contribute to persistent underreporting.

The project's core challenge was to design a scalable, secure, and trusted system capable of overcoming long-standing fragmentation, legal uncertainties, and public disengagement across diverse transport environments, while enabling future regional or national implementation.

Innovation Launchpad Network+

Innovation

Faced with structural and operational fragmentation, the project designed a robust, ready-to-implement trial specification for a Regional Incident Database (RID) focused on VAWG in public transport. This innovation prioritised feasibility, scalability, and stakeholder alignment.

Three core activities underpinned the approach:

1. **Desktop Reviews:** Two targeted literature reviews examined public transport crime recording systems and data interoperability. These identified key gaps in infrastructure, governance, and user engagement.
2. **Stakeholder Engagement:** Thirteen semi-structured interviews with transport operators, police, and advocacy groups provided insights into current practices, challenges, and expectations. This ensured the proposed system was grounded in real-world needs.
3. **Trial Blueprint**: A comprehensive pilot specification was developed, detailing technical architecture, ethical safeguards, governance models, and evaluation metrics. Several diverse regions were identified as suitable trial sites.

The RID concept emphasises modular design, semantic tagging, federated access, and cloud-based infrastructure to support multi-modal, multi-channel reporting. It also embeds cultural change by encouraging transport operators to take proactive roles in safeguarding, not just data collection.

Rather than proposing a monolithic national system, the innovation lies in a regional-first strategy that leverages existing tools and infrastructure. This reframes the database as both a technical solution and a catalyst for systemic reform in how VAWG is understood, reported, and addressed across the UK's transport network.

Result

The project revealed that the barriers to a unified VAWG reporting system are not primarily technical, but structural, legal, and cultural. Fragmentation across transport modes and jurisdictions - combined with inconsistent definitions and incompatible data formats - makes integration and coordinated responses challenging.

A key insight was that a modular, federated architecture may be preferable to a centralised national system. This approach allows for local adaptability while maintaining interoperability. Standardising definitions and minimum data fields is essential to avoid misclassification and enable meaningful analysis across agencies.

Ethical and legal governance must be embedded from the outset. Privacy-by-design principles, GDPR compliance, and clear data ownership protocols are critical to building trust and ensuring responsible data use.

Stakeholder interviews highlighted strong support for a unified system but also revealed frustration with current fragmentation and lack of guidance. Many organisations treat VAWG as a secondary issue, underscoring the need for cultural change alongside technical reform.

The project also emphasised the importance of multi-channel reporting - via apps, text, phone, and in-person - to ensure accessibility, particularly for marginalised groups. Existing tools should be adapted rather than replaced to reduce costs and improve adoption.

A critical gap identified is, outside of rail, as the absence of a public transport flag in police data. One alternative is to broaden the remit of BTP or a similar body to cover all public transport modes. Without this, incidents cannot be reliably tracked or analysed. Addressing this is foundational to any future trial and essential for improving visibility, accountability, and victim support.

Impact

The project has begun to influence national strategy, with the lead researcher invited to present evidence at the House of Commons Transport Select Committee and the Department for Transport's Executive Committee. These engagements positioned the work as a national reference point for improving safety on public transport.

The development of a detailed trial specification for a Regional Incident Database (RID) has created a practical framework for future implementation. It offers a scalable model for integrating multi-modal data, embedding ethical governance, and improving reporting accessibility. Five trial sites have been proposed whereby this blueprint could be adopted, with strong interest from transport authorities and advocacy groups.

The project also strengthened partnerships between Nottingham Trent University (NTU), Connected Places Catapult (CPC), and key stakeholders including British Transport Police, Transport for London, and regional transport bodies. These relationships have opened doors to future funding opportunities and collaborative research.

Public visibility was enhanced through media coverage on CPC's website, Innovate UK, NTU news, and The Engineer magazine. Presentations at major national events—such as Traffex and the Rail Delivery Group's "Safer Journeys" conference - further amplified the project's reach.

Andy Newton

"I'm grateful to UKRI, the Innovation Launchpad Network+, and CPC for this opportunity. We developed a trial protocol, engaged with key transport practitioners, and highlighted the national need for a centralised database to address VAWG on public transport. I look forward to continuing these conversations beyond this project."

Connected Places Catapult

"This has opened doors for potential collaborations with industry and/or public sector where existing transport infrastructure exists and considerations for VAWG can be incorporated. The Catapult will continue to work on identifying potential opportunities of taking this work further in sectors such as rail and integrated transport." - Nick Loke

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NTU Nottingham Trent University

UKRI UK Research and Innovation