

Welcome

**The conference will
start shortly**

Agenda

- Session 1 | Opening
- Session 2 | Enhanced Regional Connectivity
- Session 3 | Accelerating Infrastructure Delivery
- Session 4 | Mobility of People & Goods
- **Session 5 | Protection & Renewal**
- Session 6 | Decarbonisation & Environment

Session 5: Protection and Renewal

– Asset Management and NRN Operations

Chair: Finola O’Riordan, Senior Engineer, Cork National Road Office

9.15 am	Developing Vulnerability Assessment and Criticality Assessment Frameworks	Joe Joyce, TII Network Management
9.35 am	Reclaimed Asphalt in Surface Courses	Kevin Crawley, TII Network Management, Corin Bridson (Breedon)
9.55 am	Joint Utility and Transport Clearing House	Stephen Flynn, Head of the Road Management Office Donegal
10.15 am	Motorway Operations	Sean Hollywood, TII Network Operations
10.35 am	Q&A	
10.45 am	End of Session 5	

TRANSPORT INFRASTRUCTURE IRELAND

Developing Vulnerability Assessment and Criticality Assessment Frameworks

Joe Joyce, Network Management Engineer



Bonneagar Iompair Éireann
Transport Infrastructure Ireland

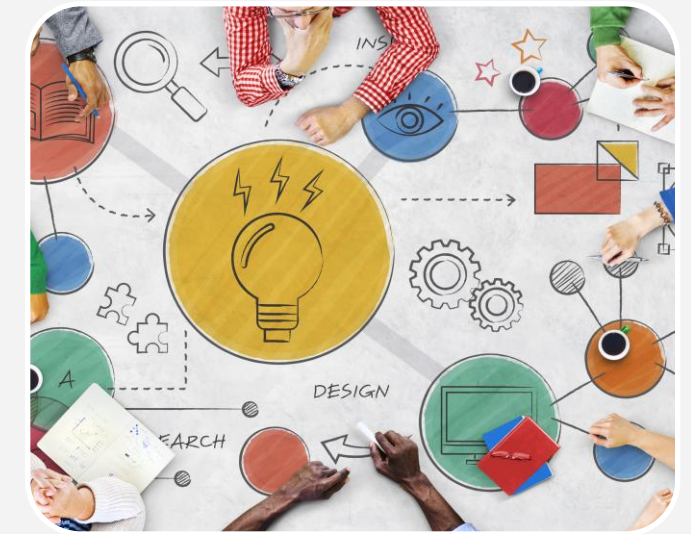
Developing Vulnerability Assessment and Criticality Assessment Frameworks

TII Annual Conference

2nd October 2026



Why Climate Adaptation Matters Now



A Changing Climate

Ireland is experiencing more severe weather, intense rainfall, flooding, slope failures and rising sea levels

Infrastructure Facing New Hazards

Parts of the National Roads Network were not designed for the emerging climate hazard profile

Impacts Across Network

Climate-related events can affect safety, network availability, maintenance cost and community connectivity

Reducing, Not Eliminating, Risk

Adaptation reduces, but cannot eliminate, future damage and disruption risk

Vulnerability Assessment Framework

The VAF under development will strengthen the evidence base for prioritising adaptation actions

TII Climate Adaptation Plan: Implementation Pathway



The Implementation Plan translates strategy into deliverable measures for 2026 - 2030

Priority hazards include precipitation, flooding, slope failure and extreme wind, with cascading and compounding effects

Vulnerability and Criticality assessment provides the analytical bridge from risk screening to adaptation measures

Why develop a Vulnerability Assessment Framework (VAF) and Criticality Assessment Framework (CAF)



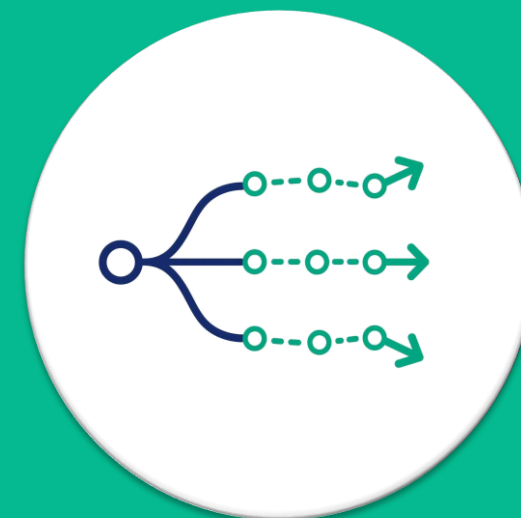
Core Purpose
Support detailed climate change and natural hazard risk and resilience assessments for the National Roads Network



Maps and Rankings
Provides vulnerability & criticality maps and rankings to guide intervention planning



Embedded in Processes
Feeds asset management, GIS, reporting and investment prioritisation processes



Adaptive Pathways
Enables staged adaptation using a dynamic pathway approach as new data becomes available

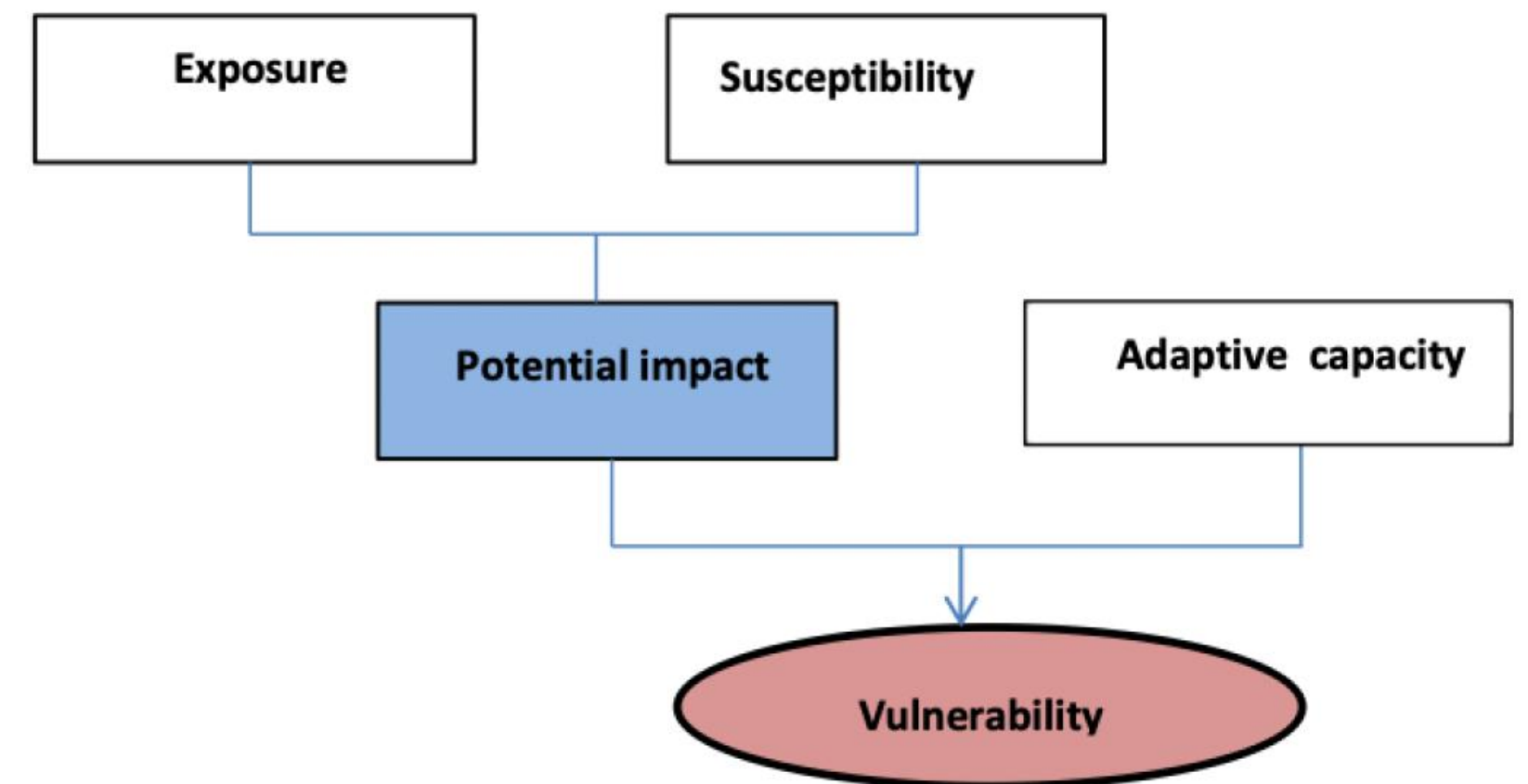


From Data to Decisions
Helps convert climate intelligence into operationally usable asset-management outputs



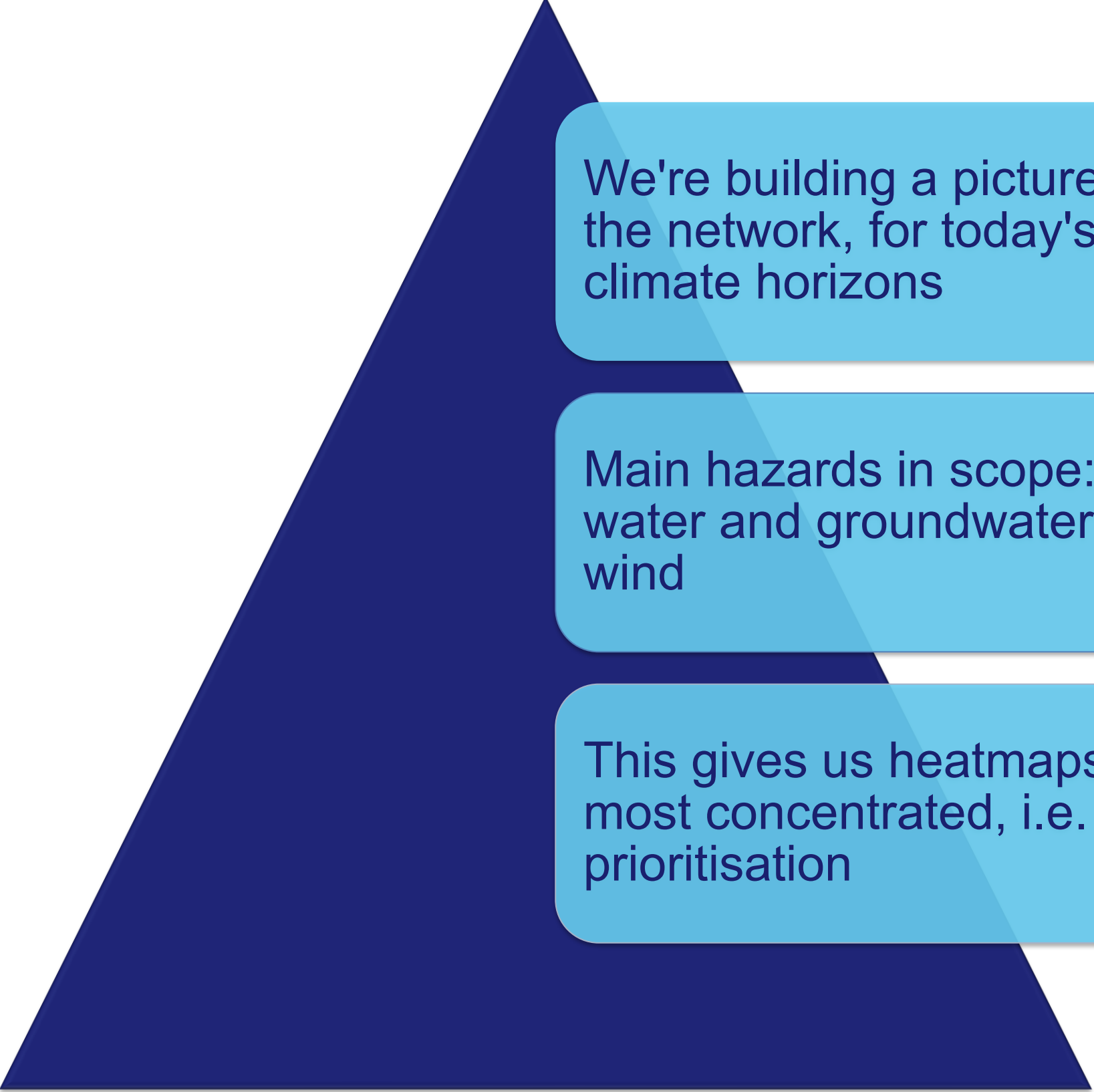
What Is Vulnerability?

- ✓ Vulnerability is how susceptible an asset is to damage or disrupted performance when a climate hazard occurs, it's the link between asset condition and risk
- ✓ It comes down to three simple ideas:
Exposure (what hazard, how likely),
Susceptibility (how the asset responds, given its condition and location) and Adaptive Capacity (how well we can resist, respond and recover)
- ✓ Reduce any one of these and you reduce vulnerability, which is exactly what an adaptation intervention does



Vulnerability Assessment Inputs (IPCC, 2007)

Understanding Hazard Exposure



We're building a picture of hazard exposure across the network, for today's climate and for future climate horizons

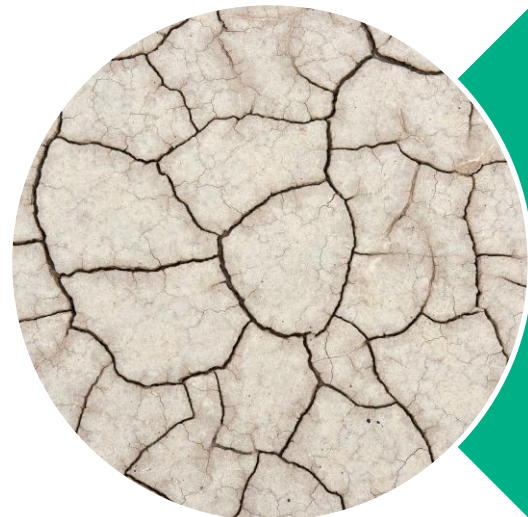
Main hazards in scope: flooding (river, surface water and groundwater), slope failure, extreme wind

This gives us heatmaps of where hazards are most concentrated, i.e. the starting point for prioritisation

What Makes an Asset Susceptible



Susceptibility is about how an asset responds under stress, shaped by its condition, age, materials and design



It varies by asset type: scour for bridges, slope stability for earthworks, drainage capacity for pavements

Adaptive Capacity, Our Ability to Cope



This is about resilience on the ground: can we detour traffic, monitor conditions, respond quickly and recover?



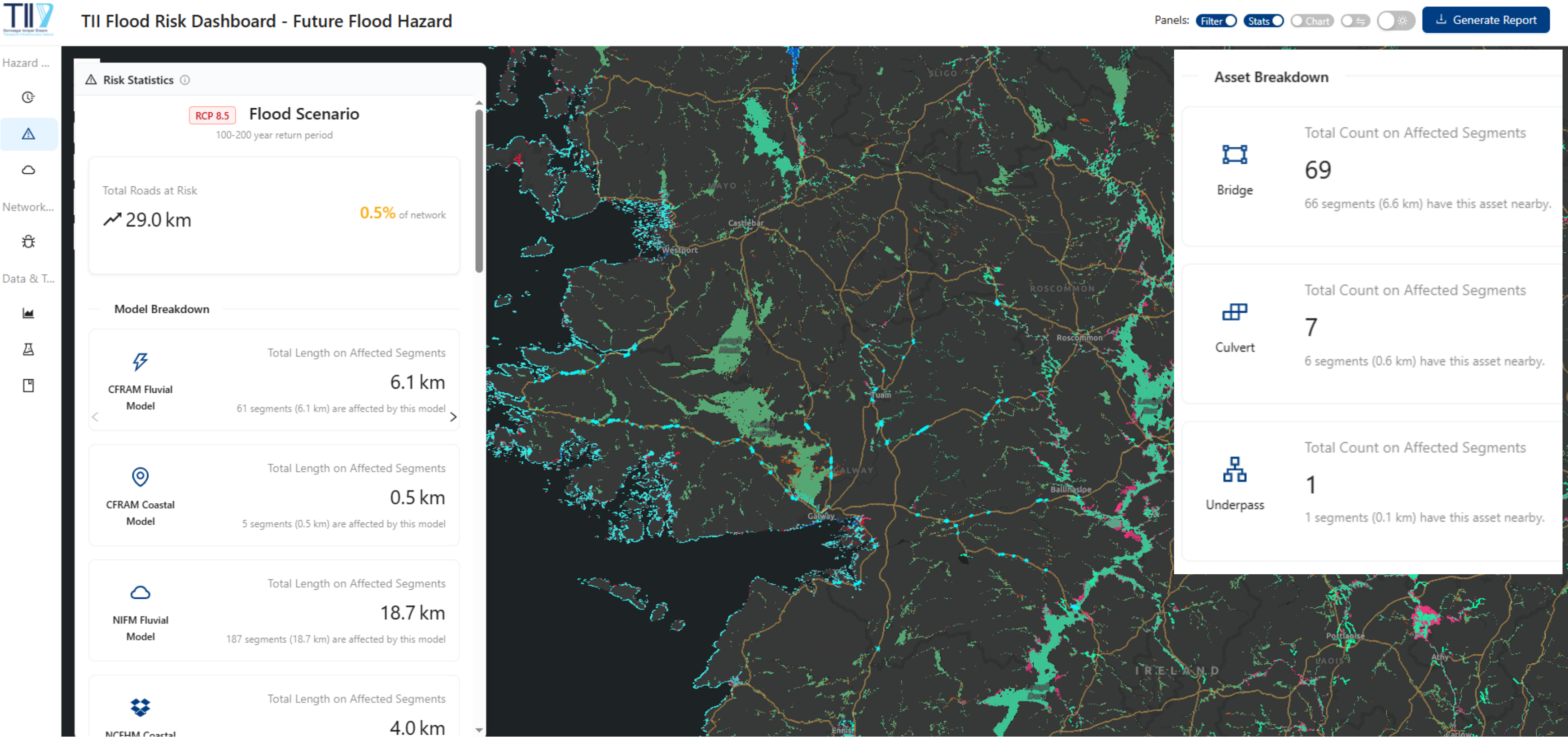
It spans engineering (redundancy), operations (inspection and response) and organisation (data and coordination)



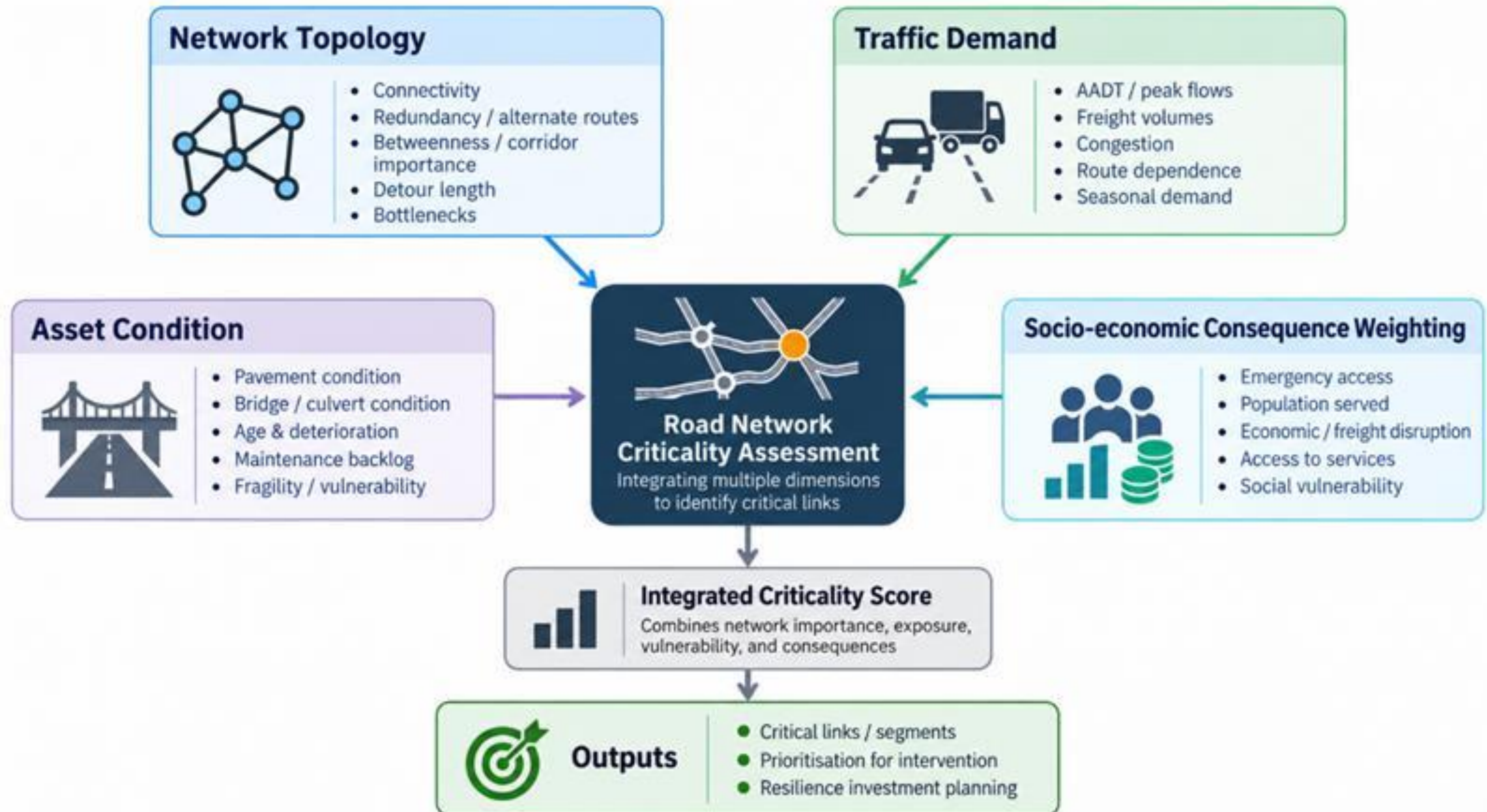
This is often the least developed part of vulnerability models internationally



VAF Data Example: Future Flood Scenarios



What is Criticality?

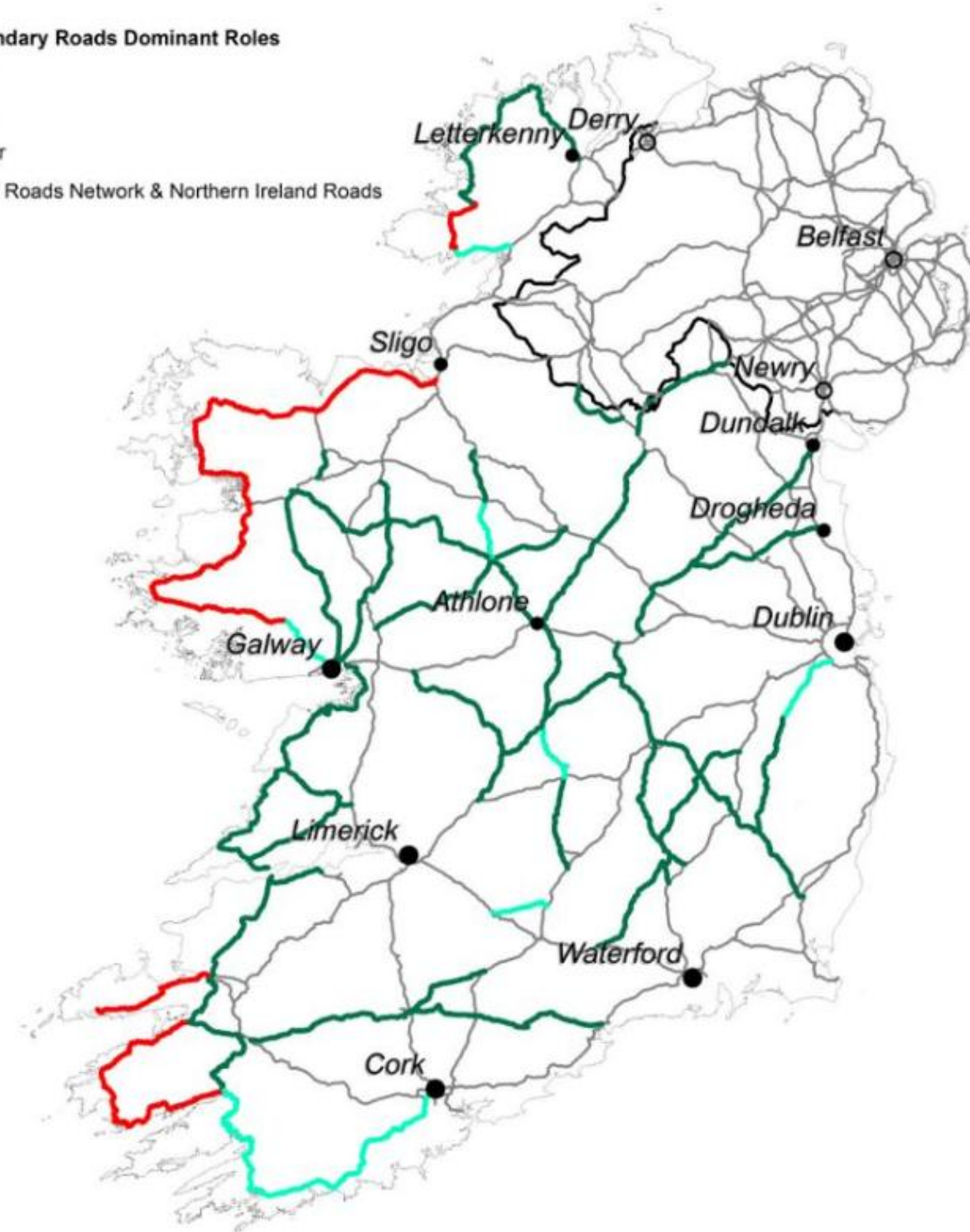


Criticality Assessment (Existing Approach)

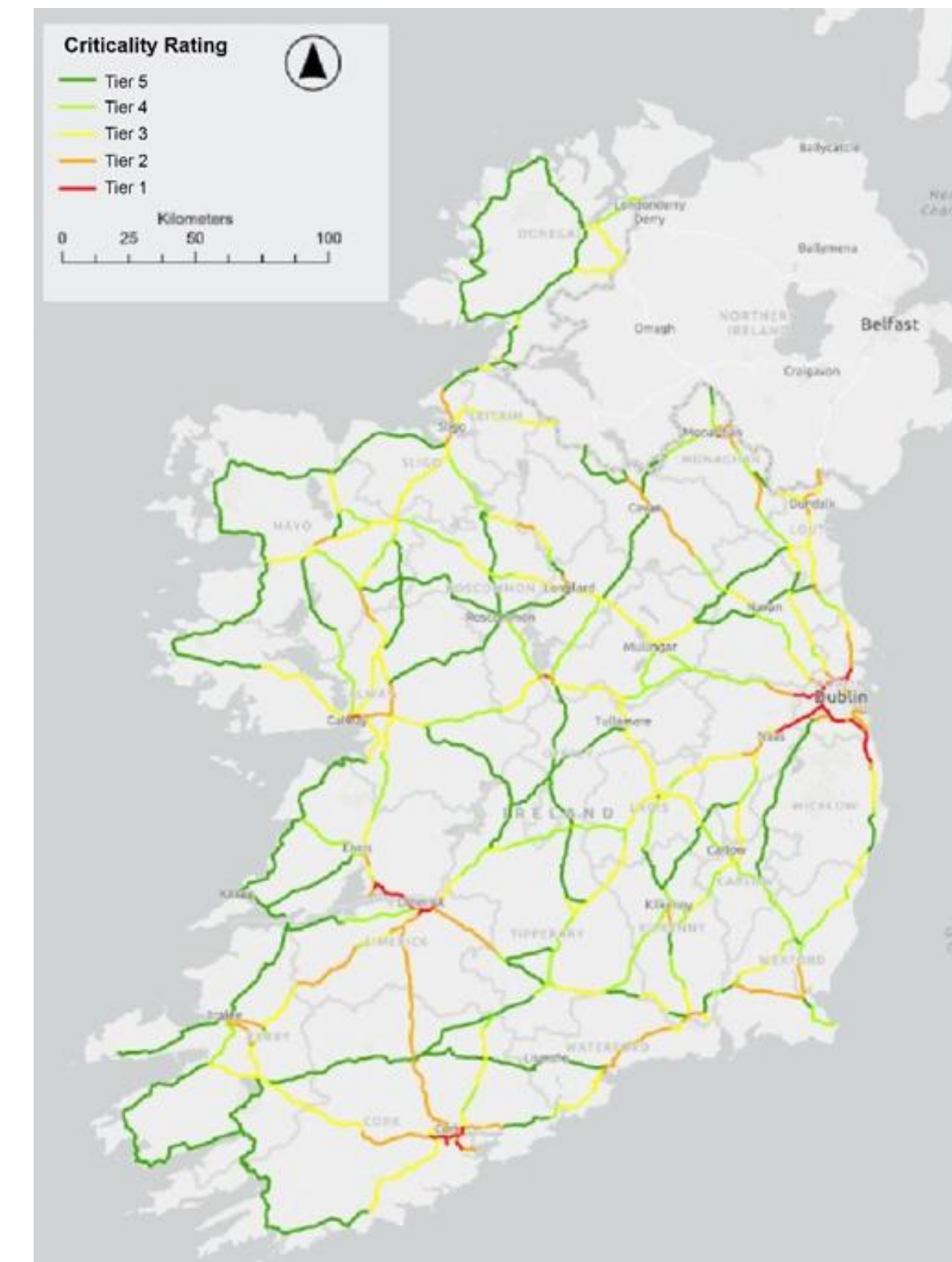
Legend

National Secondary Roads Dominant Roles

- Lifeline
- Arterial
- Collector
- National Roads Network & Northern Ireland Roads

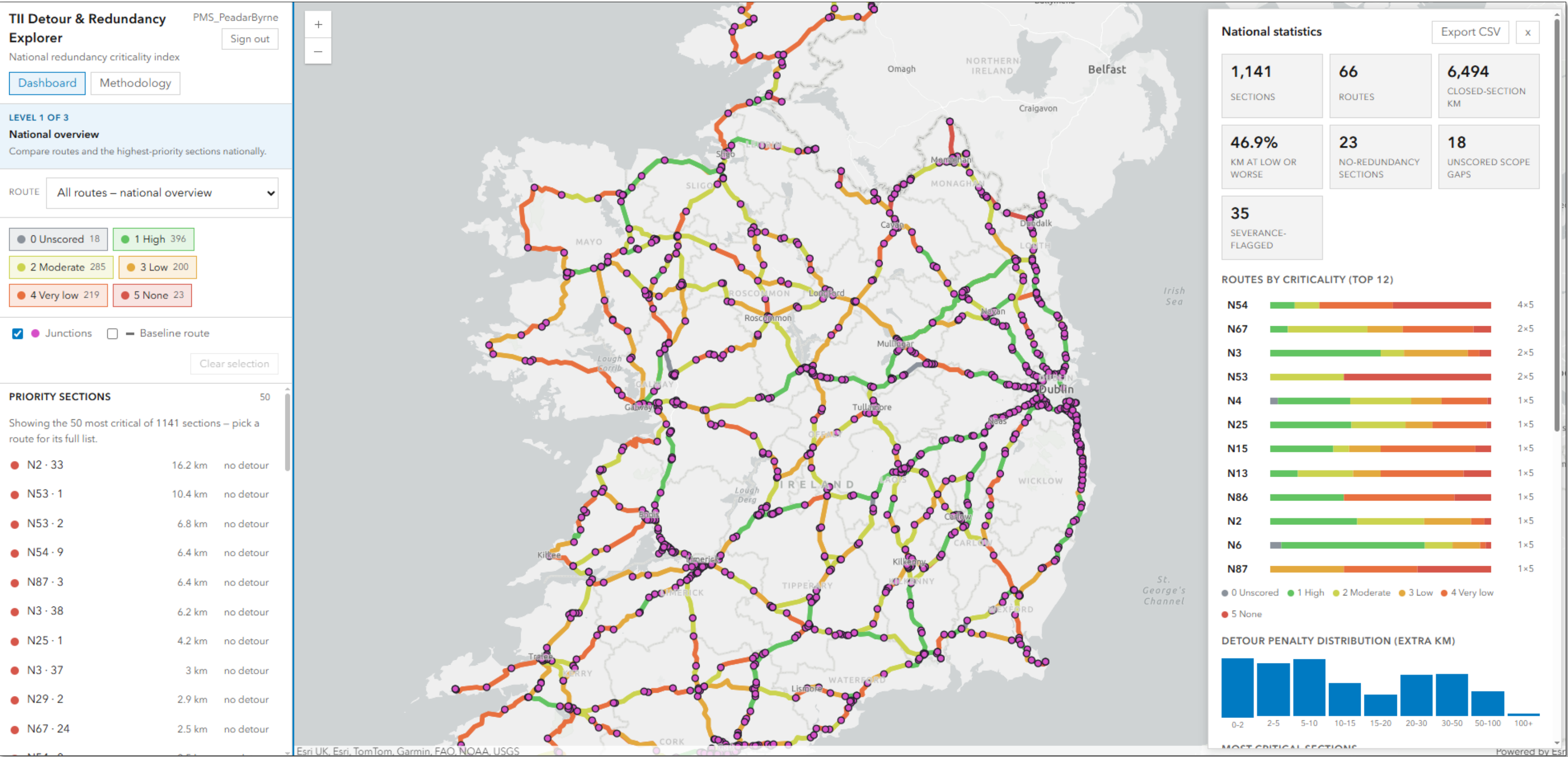


National Secondary Road network classification map showing lifeline roads



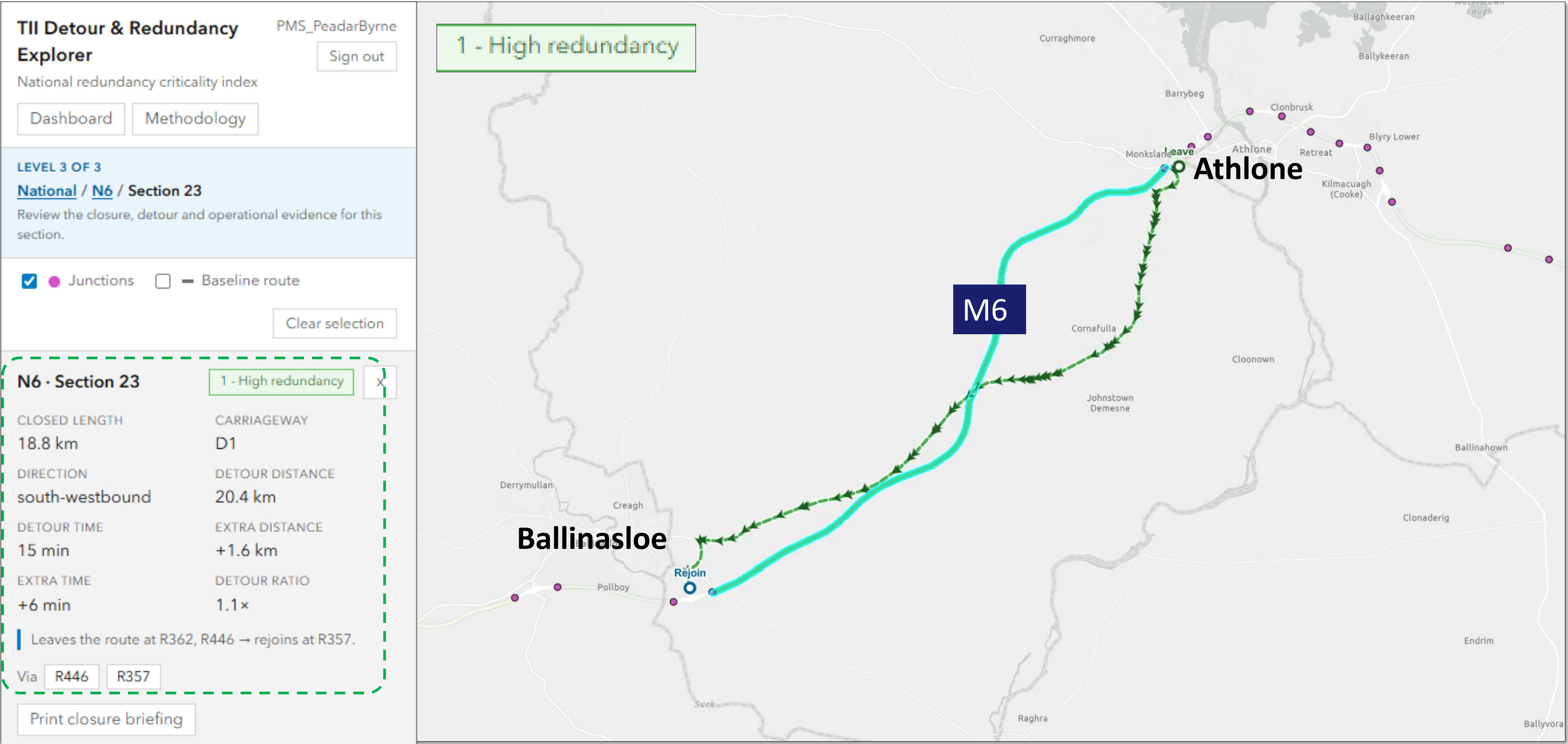
Map of the National Roads network showing assigned Tier 1 to Tier 5 criticality levels based on AADT

CAF – Detour & Redundancy Analysis (Prototype)



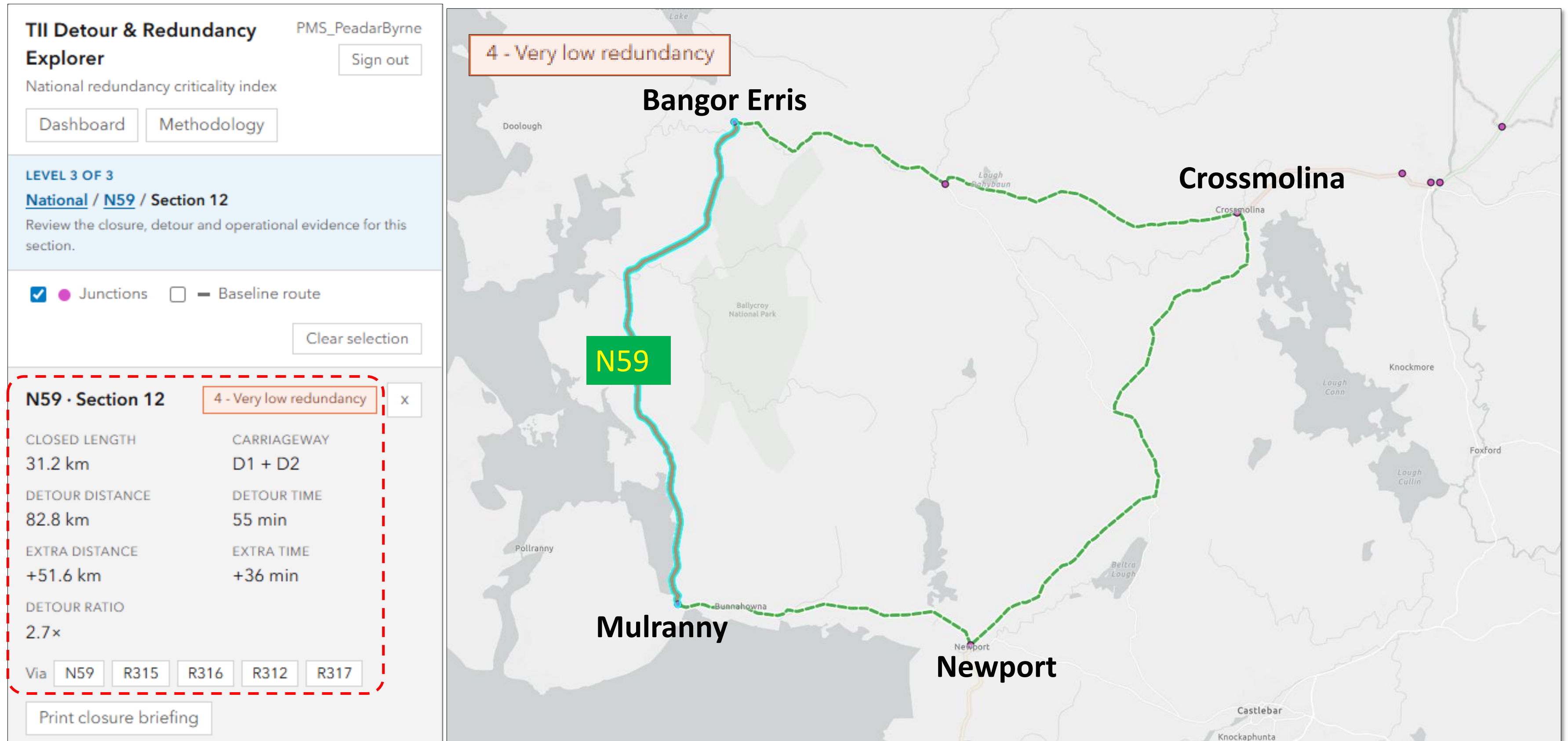
National Redundancy Analysis prototype

CAF – Detour & Redundancy Analysis (Example 1)



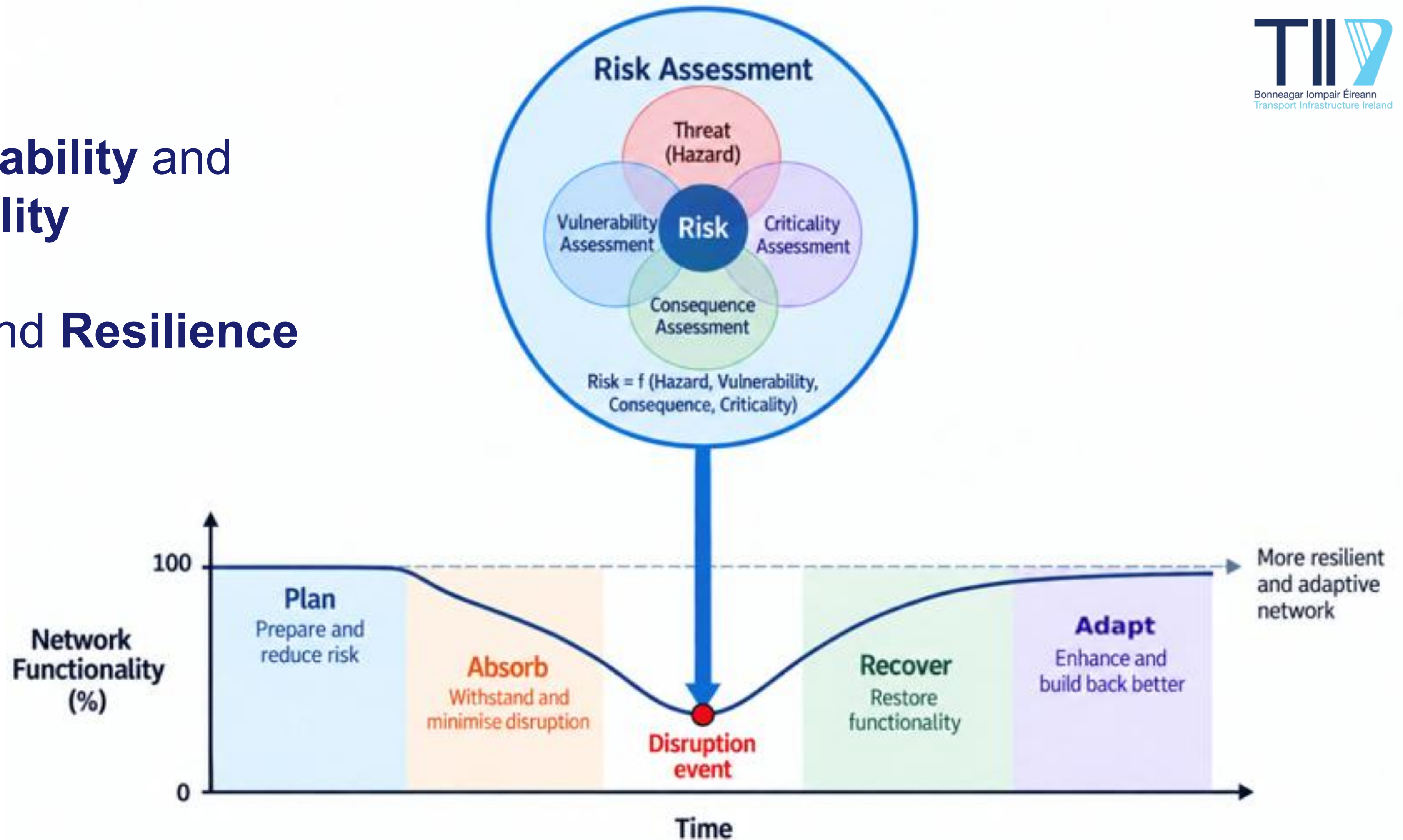
Mapping Detour Routes and classifying Redundancy along section of M6.

CAF – Detour & Redundancy Analysis (Example 2)



Long detour along N59 and an example of Low Redundancy.

From Vulnerability and Criticality to Risk and Resilience



Conclusions & Perspectives



Weather-related events impact on network's ability to provide mobility to the road user



Improving resilience of network requires identification and prioritisation of vulnerable segments



GIS provides ideal platform for identifying vulnerable segments using multiple data sets

Thank You

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TRANSPORT INFRASTRUCTURE IRELAND & BREEDON

Reclaimed Asphalt in Surface Courses

Kevin Crawley, Senior Engineer Pavement Engineering and Technology, TII
Corin Bridson, Senior Technical Manager, Breedon

Reclaimed Asphalt in Surface Courses – Opportunities & Challenges!

Kevin Crawley

Senior Engineer – Pavement Engineering & Technology
Network Management | Transport Infrastructure Ireland



Current use of Reclaimed Asphalt (RA) in Bituminous Materials in TII Publications

CC-SPW-00900

- ✓ Asphalt Concrete base & binder courses
- ✓ SMA binder course
- ✓ Low Energy Bound Materials (LEBM)
- ✗ Use in surface course mixtures is currently not permitted within CC-SPW-00900

Table 13c Mixture Design Evaluation when Reclaimed Asphalt is a Constituent

Characteristic	RA content by mass of the mixture			Test Method
	≤20%	>20% and ≤50%	>50% and ≤70%	
Recovered Penetration of mixture	n/a	To be reported		EN 12697-3 plus EN 1426
Recovered Softening Point of mixture	n/a	To be reported		EN 12697-3 plus EN 1427
Binder drainage	n/a	Maximum 0,3%		EN 12697-27
Stiffness ¹	n/a	To be reported		EN 12697-26:2018 Annex C IT-CY 20°C, 124ms
Fatigue ¹	n/a		To be reported	EN 12697-24:2018 Annex E, IT-CY at 20°C, 0.1Hz

Notes:

What is the situation in other countries?

- EN13108 Series
 - Permitted in surface courses (including SMA & HRA) with additional requirements when >10% used
- Actual usage limits set by National Annexes & standards
- UK - PD 6691:2022
 - Up to 10% in surface courses as standard
 - Up to 20% with additional testing
- Other EU countries
 - Some European jurisdictions permit up to 30% RA in certain surface course applications

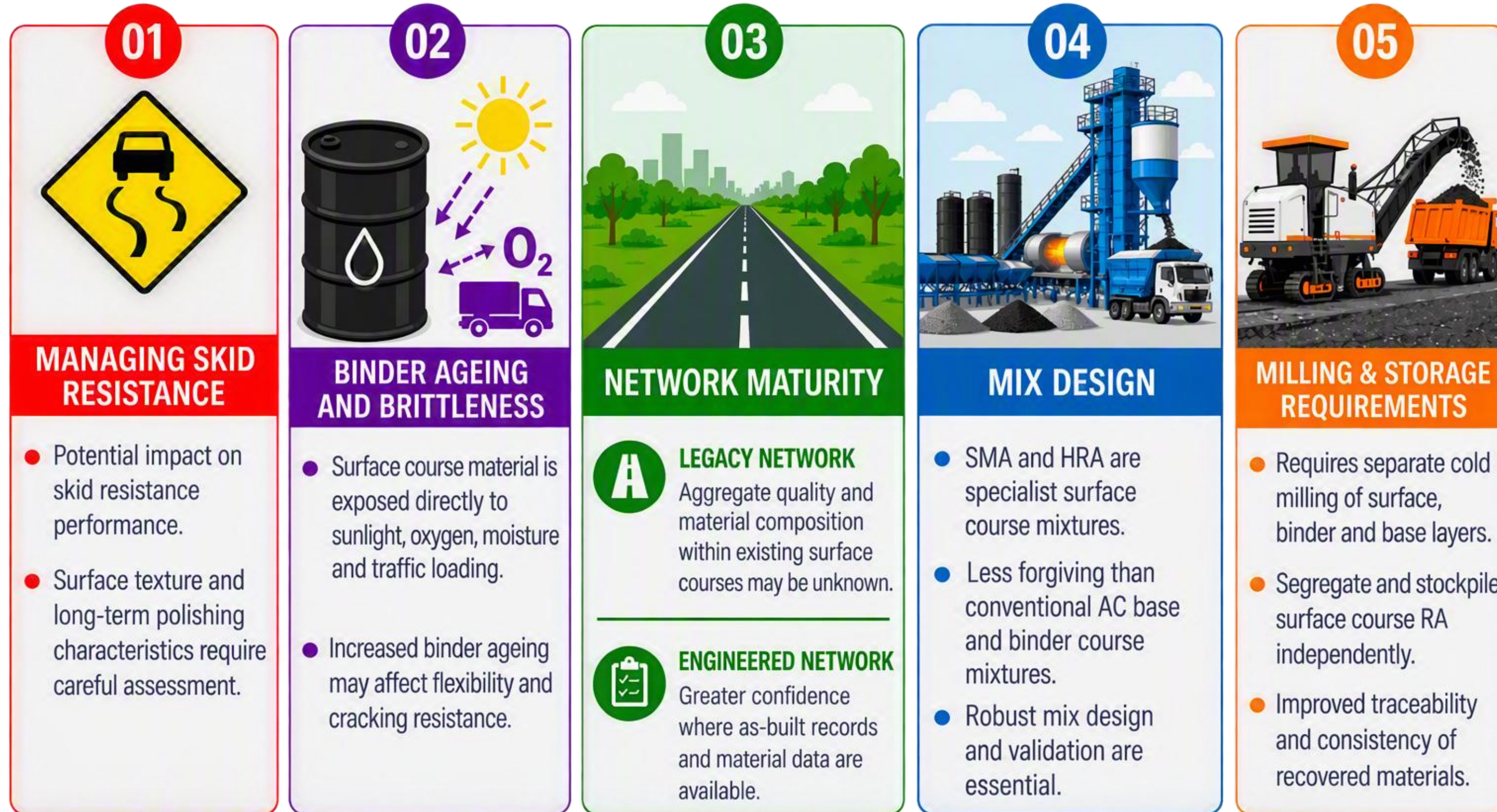


Benefits of using RA in Surface Courses

- ✓ Carriageway acts as a linear quarry
- ✓ Potentially conserves high PSV virgin aggregates
- ✓ Potentially reduces virgin bitumen content
- ✓ Reduces waste
- ✓ Lower carbon footprint (GWP)
- ✓ Helps meet TII Sustainability & TII Circular Economy goals



Key Challenges of RA in Surface Courses

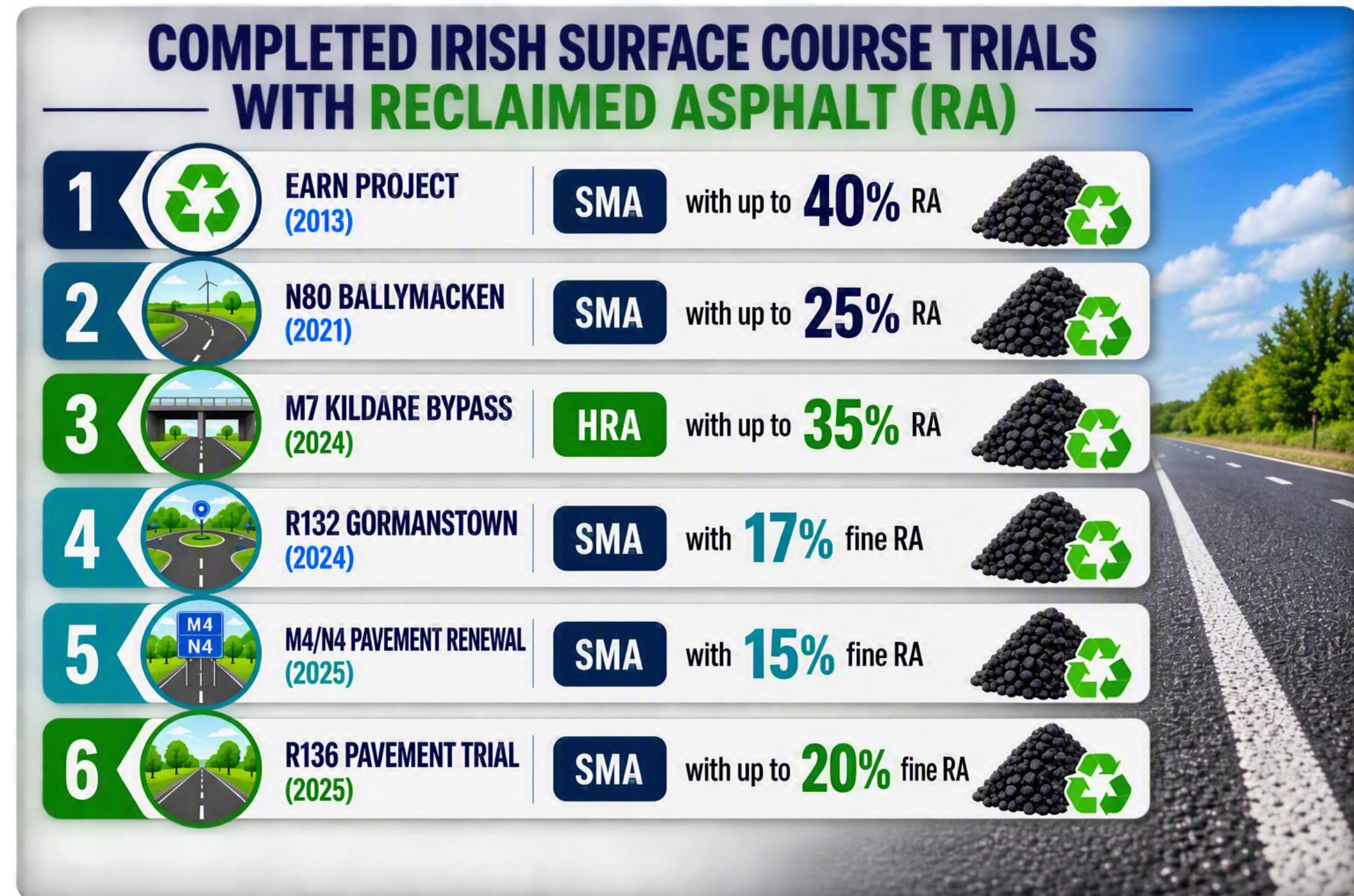


Careful planning, material knowledge and proper processing of RA are essential to ensure durable, safe and high-performing surface course pavement materials.



Pathway Forward - Pilots & Trials

- Undertake trials in collaboration with Industry
- Risk Assessment & Management
- Ongoing Performance Monitoring
- Consider progressive network implementation based on monitored performance, risk assessment and evidence from trials



Why getting it right matters?

Engineering Risk

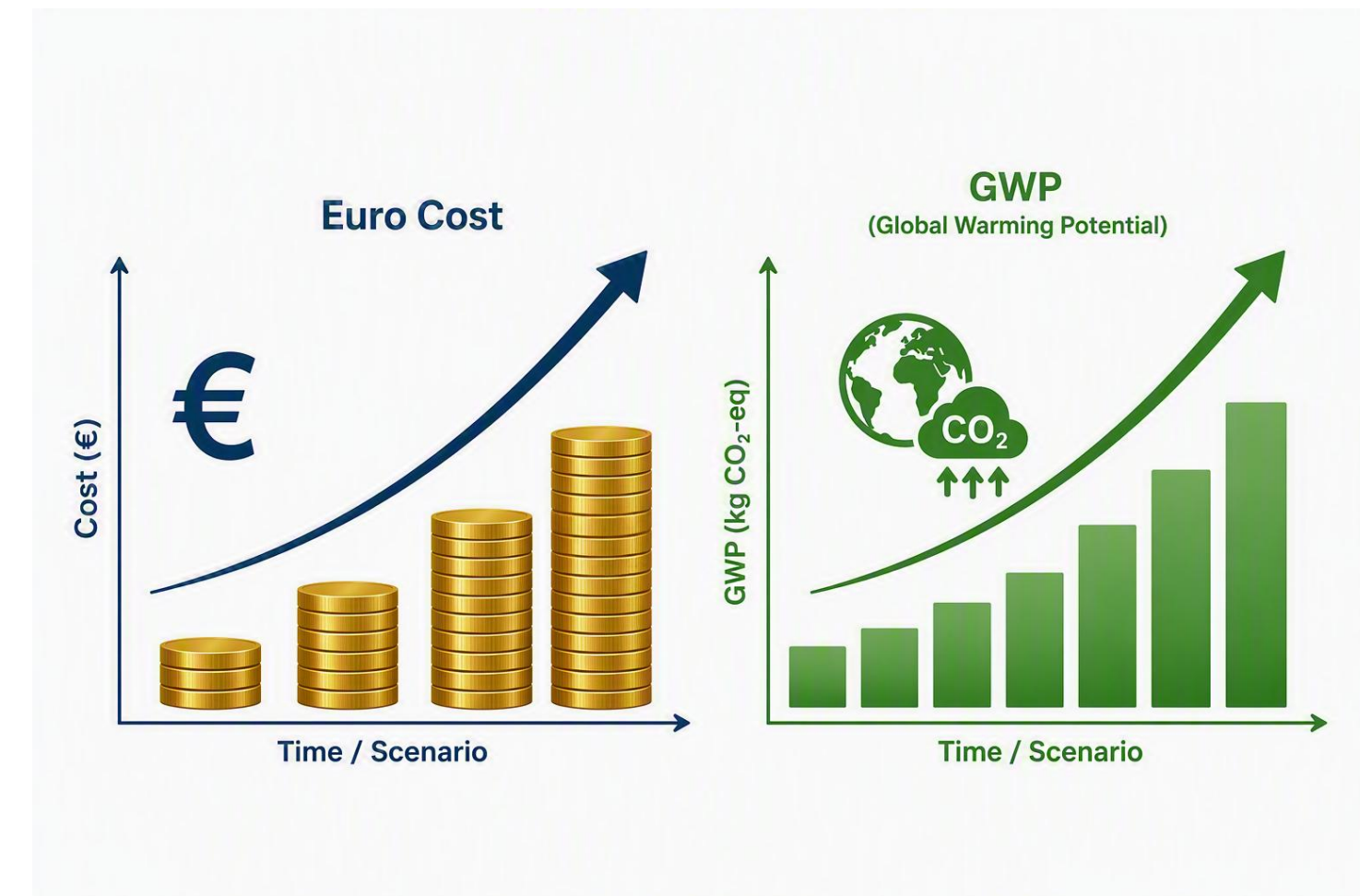
- Skidding Resistance
- Reduced durability

Environmental & Sustainability Risk

- Premature maintenance interventions
- Increased whole-life carbon impacts

Financial & Reputational Risk

- Increased agency & user costs
- Reputational damage



**Fit for its intended use &
Durable for its expected life!!**



The question is not whether RA can be used in surface courses.

The question is how it can be introduced safely, sustainably and with confidence through evidence-based implementation.

Thank you for your attention



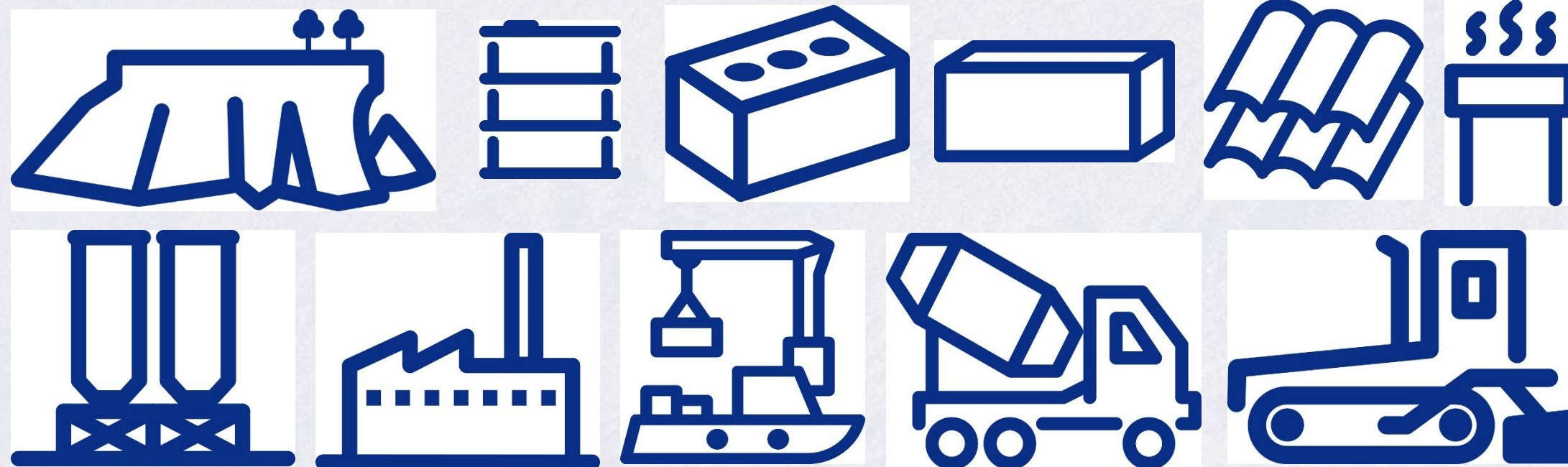
An aerial night photograph of a multi-lane highway under construction. The scene is illuminated by the headlights of a line of trucks and the work lights of construction equipment. A large excavator and a truck are positioned in the center of the road, with workers visible nearby. The surrounding landscape is dark and wooded.

Breedon Ireland

**Corin Bridson MIEI MIAT NZCE (Civil)
Senior Technical Manager**

Breedon Ireland

Brief Summary of Breedon Ireland



17 Quarries

1 Cement Plant

13 Asphalt Plants (7 RA Capable)

12 Ready Mix Concrete Plants

6 Concrete Block Yards

Contracting and Surfacing

2 Bitumen Terminals

1 Clay Brick Factory

1 Clay Pot and Flue Factory

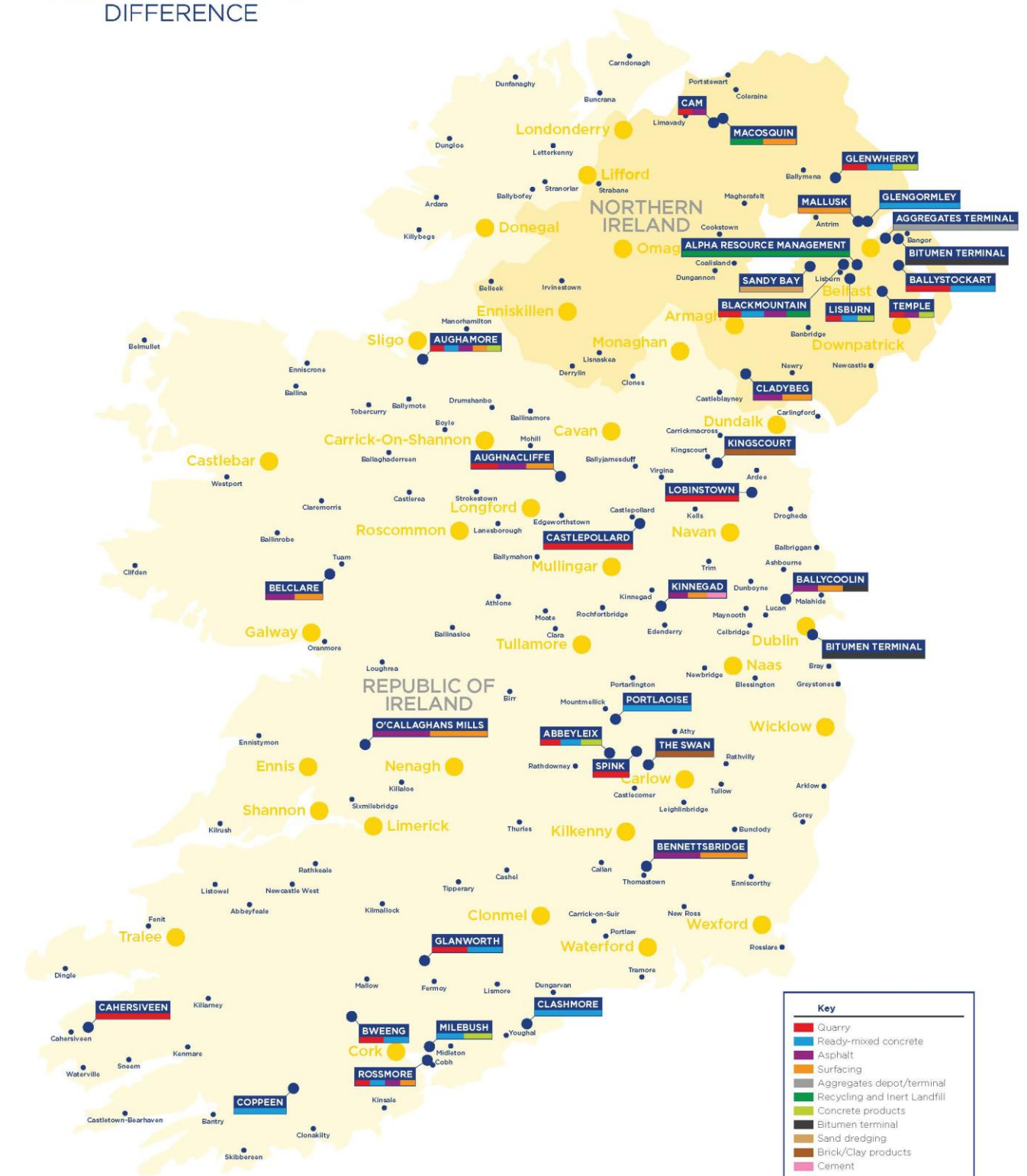
1 Emulsion Plant

1 Aggregate Export Terminal

1 Concrete Roof Tile Factory



BREEDON IRELAND



Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

The Opportunity

- Every tonne of RA contains valuable aggregate and bitumen.
- Surface course remains largely under valued as is typically used in Base and Binder or as Unbound.

The road industry is being challenged to deliver more sustainable pavements while maintaining performance and safety standards.

Building the Trial

- Opportunity identified during the N4/M4 Pavement Renewal Scheme
- Detailed project plan developed for a 15% Fine RA SMA 14 surface course trial.
- RA sourced from planings recovered from the same project.
- Laboratory assessment and mix design completed before seeking approval.
- Trial proposal accepted for construction of a dedicated 500 m trial section.

“The question wasn't whether RA works. The question was whether it could work in a surface course.”



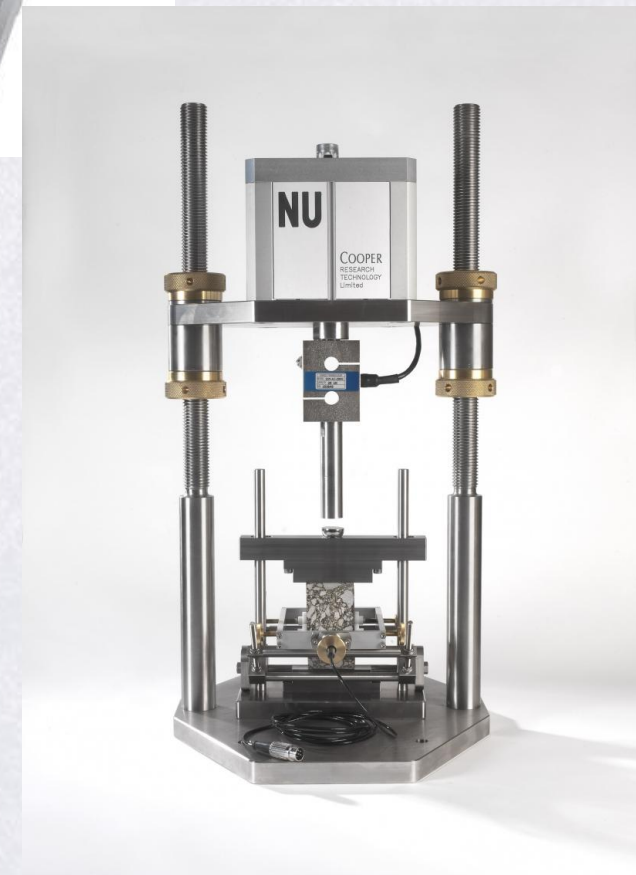
Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

Assessment of the RA



Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

Mix Design



Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

Producing the SMA 14 + 15% RA Mix



- Road planings were processed over an 8mm mesh to produce a 0/6 RA or a “Fine RA”.
- This meant that after stripping the binder 97% passed a 6.3mm sieve and 82% passed a 4mm sieve.



Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

Laying the Trial



Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

Testing and Performance

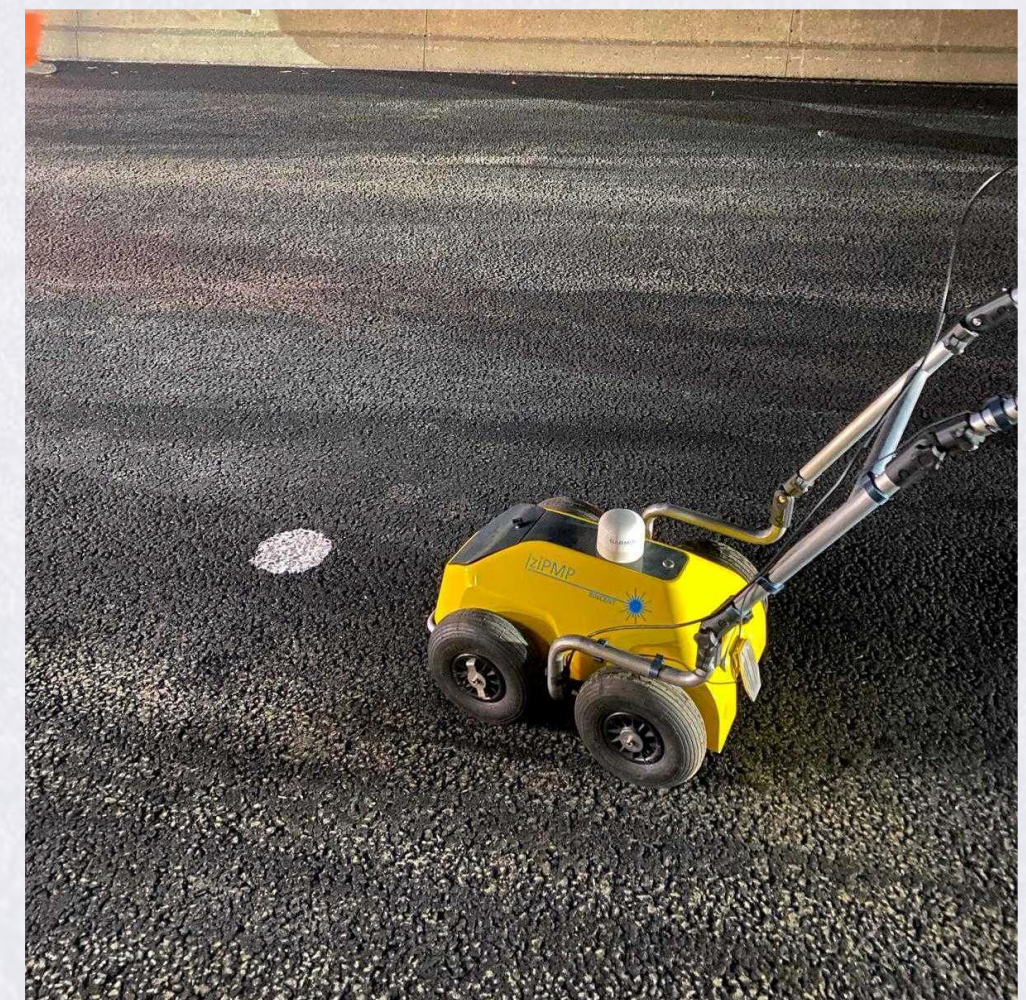
Standard Test Requirements

- 3m Rolling straightedge
- Surface Texture
- Laying Record & Temperatures
- Binder Content & Grading
- ITSR - Water Sensitivity
- Resistance to Permanent Deformation

Extra Tests performed

- Air void content
- Recovered Penetration, Softening Point & DSR
- FAP
- Stiffness (ITSM)
- ITSR – MIST
- Fatigue
- Texture Scanner

All Tests showed compliance with Specification



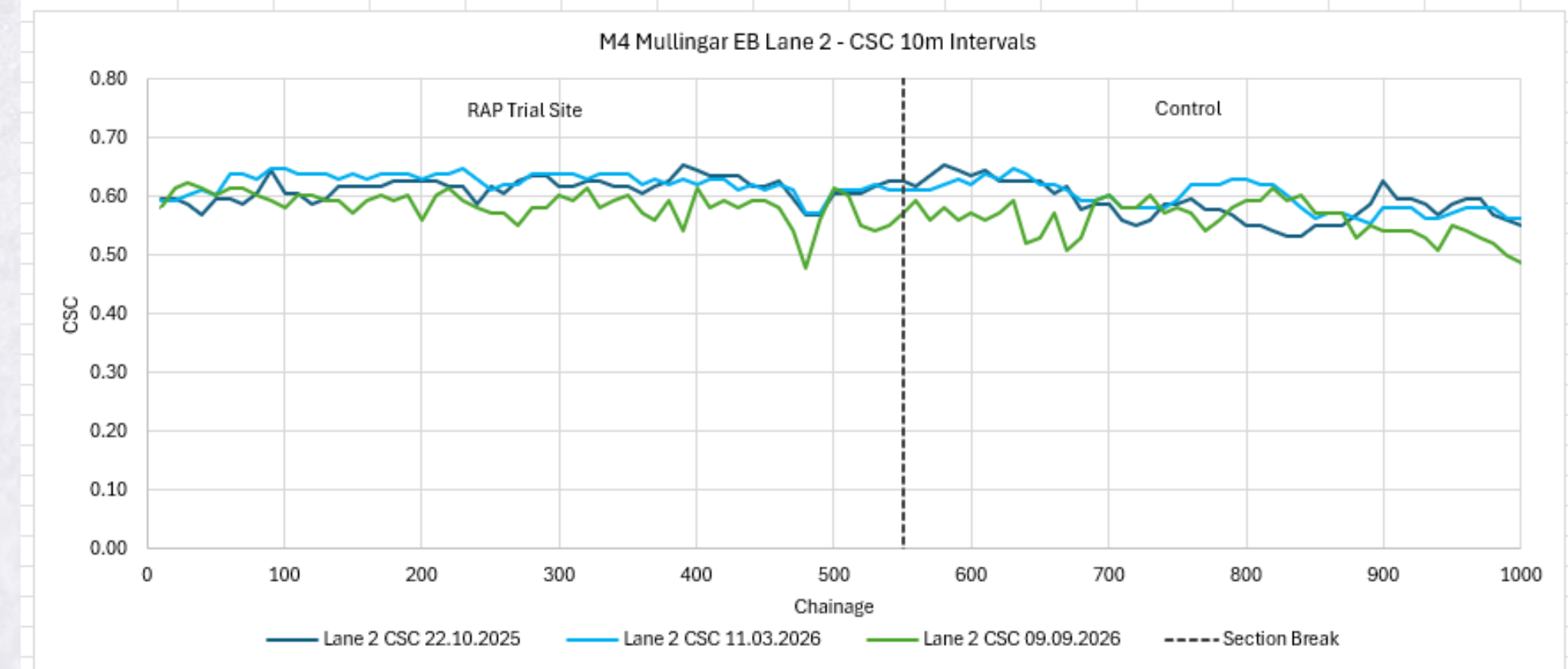
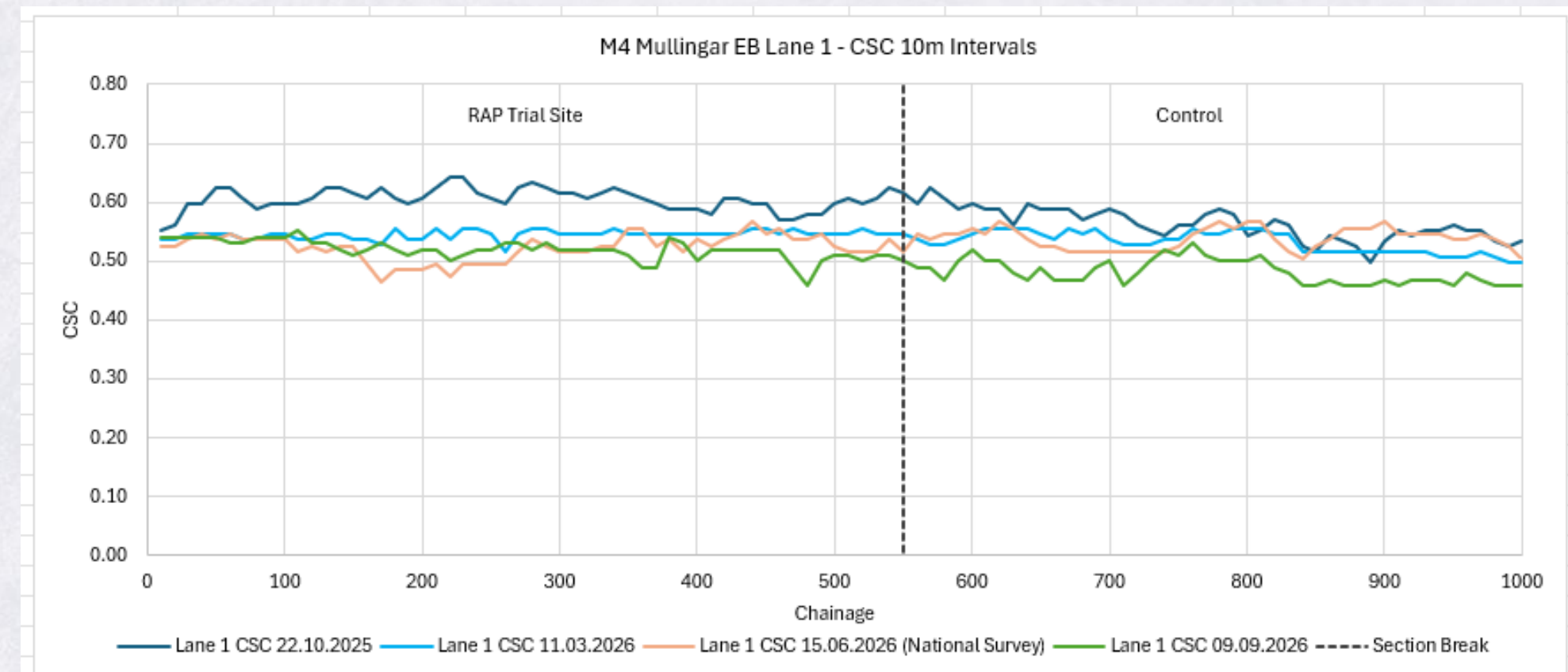
Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

Performance in Service

SCRIM Tests have been performed.

- At completion of works
- After 6 months in service
- After 12 months in service

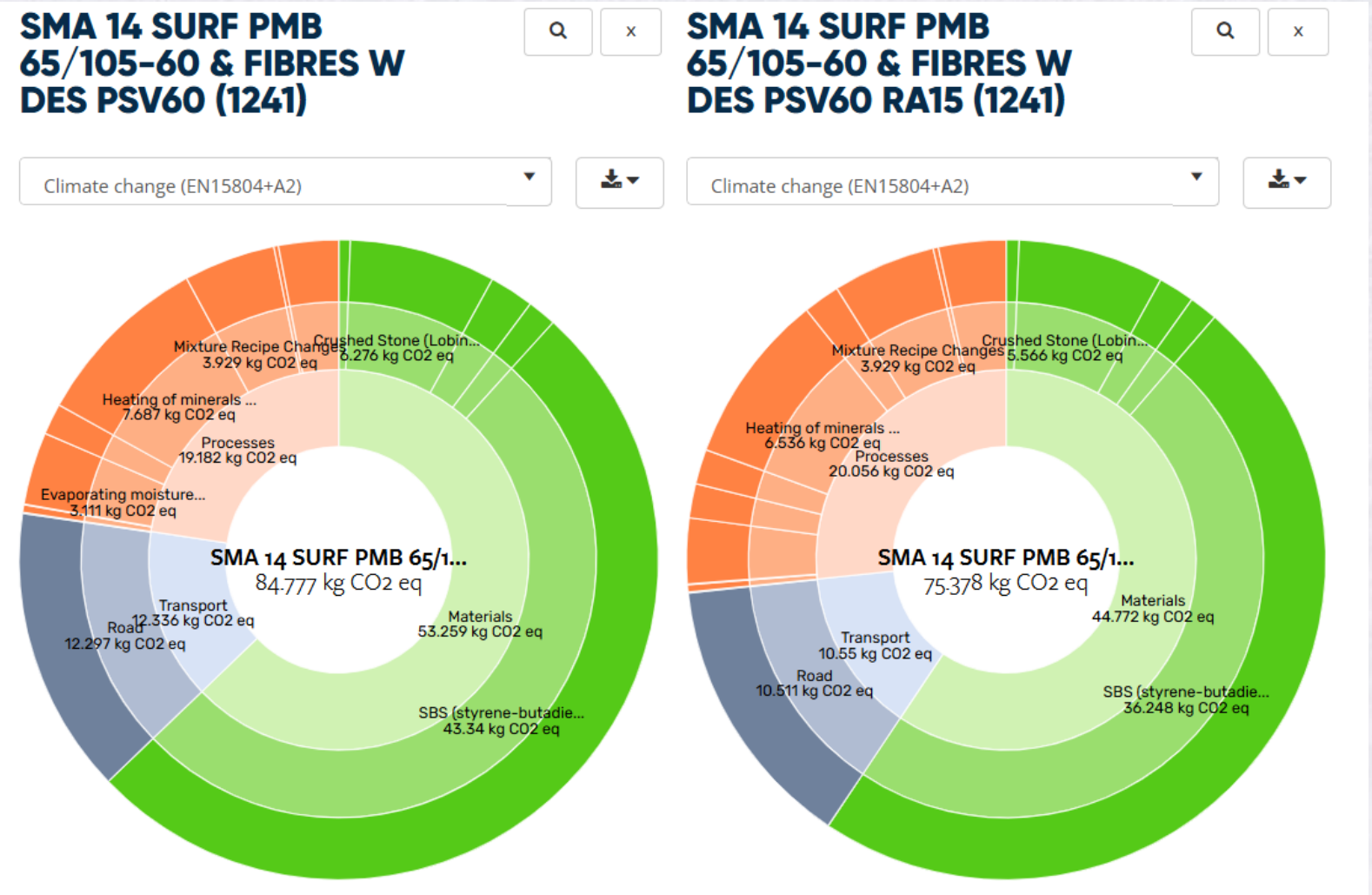
The Trial and Section and Control section are performing equally well and well above IL 0.35



Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

Carbon Reduction Results

Using TII’s c-PCR to prepare Environmental Product Declarations (EPDs) the Stone Mastic Asphalt (SMA) surface course incorporating 15% RAP achieved a reduction in carbon emissions of greater than **9 kg of CO₂** per ton of asphalt produced when compared with the control mix.



SMA 14 SURF PMB 65/105-60 des PSV60 (Traditional Hot Mix) **86.622** kg GWP

SMA 14 Surf PMB 65/105-60 W des PSV 60 (Control Mix) **84.777** kg GWP -1.443

SMA 14 Surf PMB 65/105-60 W des PSV60 RA15 (Trial Mix) **75.378** kg GWP -9.399

Added benefits of stacking technologies. -11.244

Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

What We Learned

- RA can be successfully incorporated into SMA Surface Course.
- Production, laying and compaction were achieved using standard operations and equipment currently available.
- Laboratory and in-service performance have been comparable to the control section.
- Significant carbon savings were achieved (>9 kg CO₂/t).
- Collaboration between contractor, supplier and client is critical to successful innovation.

What Next?

- Continued performance monitoring
- Further site trials
- Use of Coarse RA to claim the PSV Aggregate at the highest value
- Greater industry confidence
- Specification evolution
- Lower-carbon road networks

"This trial has shown what is possible. The next step is to build the confidence, evidence and experience needed to increase the use of RA in surface courses without compromising safety, durability or performance."

Case Study – SMA 14 Surface Course with 15% RAP Trial on the M4 Motorway

1. Introduction 2. Background 3. Project Overview 4. Materials 5. Construction 6. Results 7. Conclusion

Thank You



ROAD MANAGEMENT OFFICE, DONEGAL

Joint Utility Transport Clearing House

Stephen Flynn, Road Management Office Donegal



Joint Utility Transport Clearing House

TII ANNUAL CONFERENCE 2026

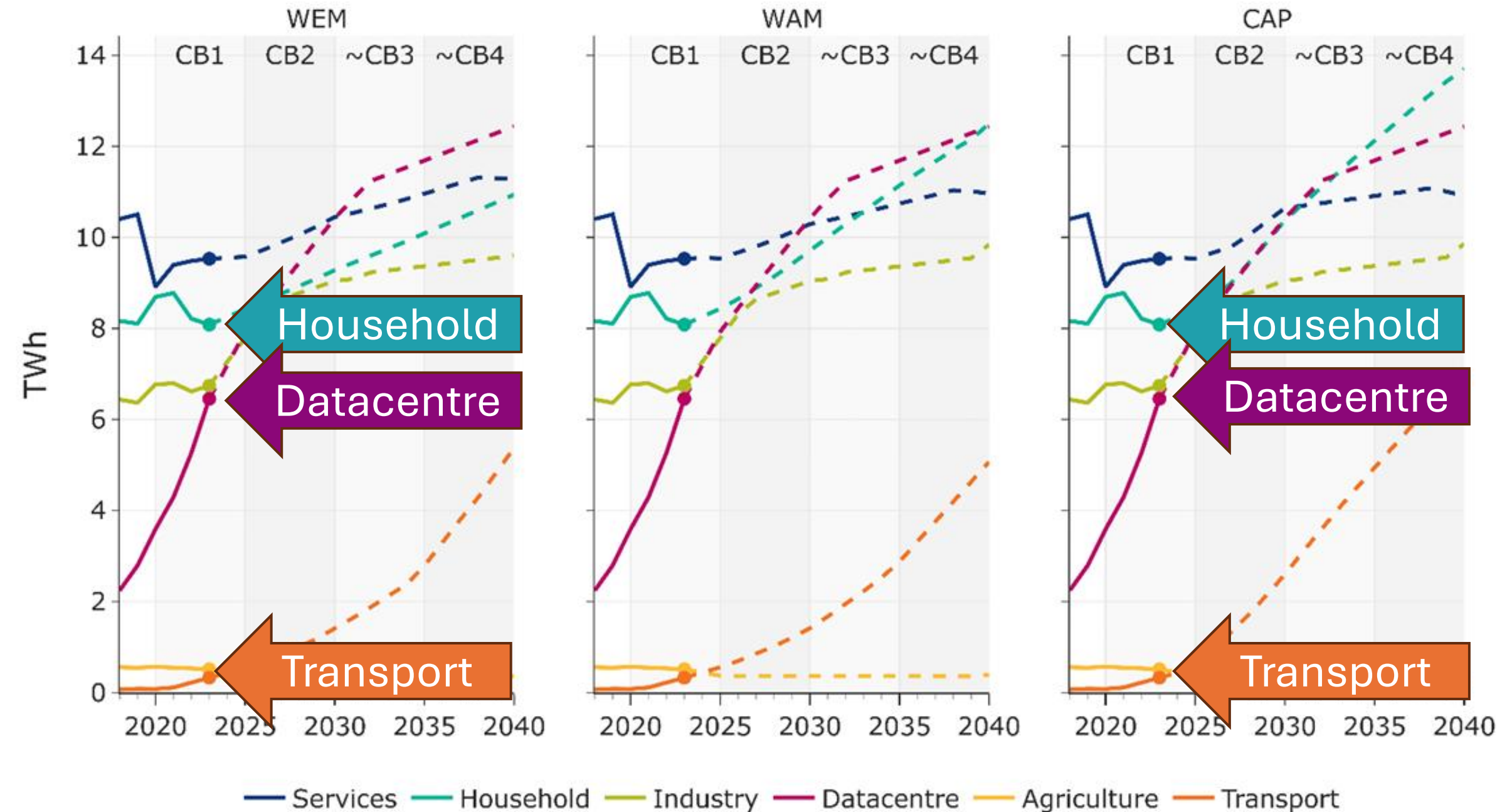


Thursday 1st – Friday 2nd October
Greenhills Hotel, Limerick

What is JUTCH about?

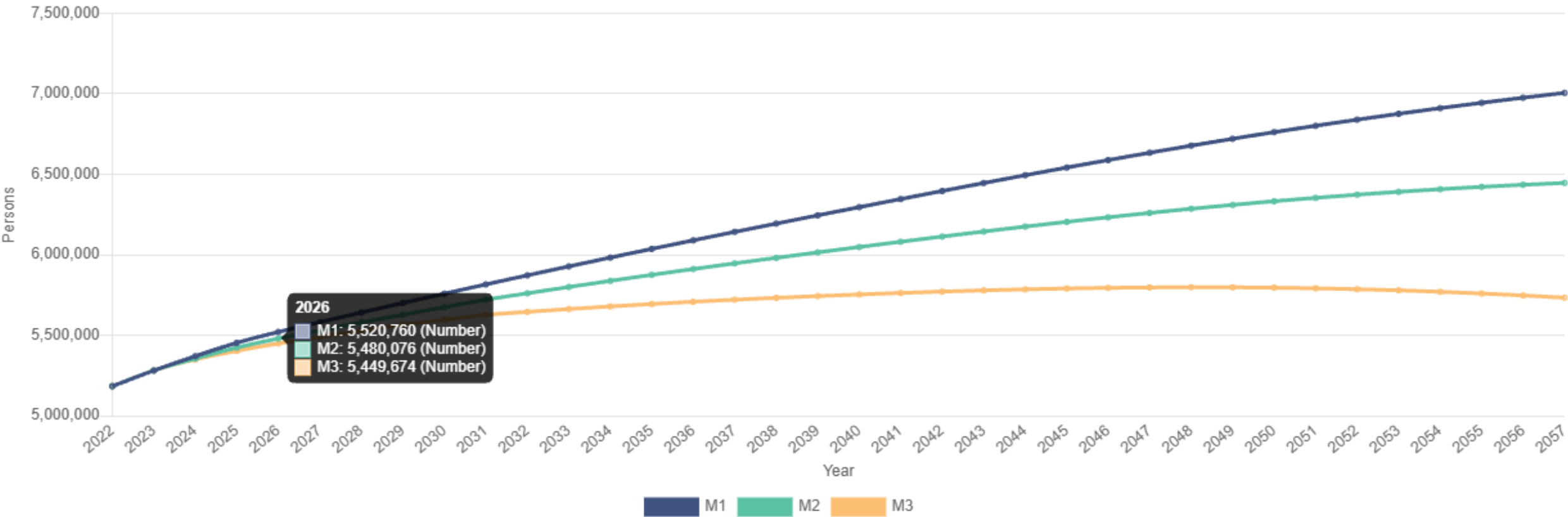
- Background
- Accelerating Infrastructure
- JUTCH
- Issues
- Actions

National Energy Projections 2025



Decarbonisation of electricity generation is crucial to achieve climate obligations.

Figure 2.1 Projected population, 2022 - 2057



© Central Statistics Office, Ireland
<https://data.cso.ie/table/PEC19>





Average Household Size in Ireland

Historic decline and recent stagnation across Census years (1981–2022)

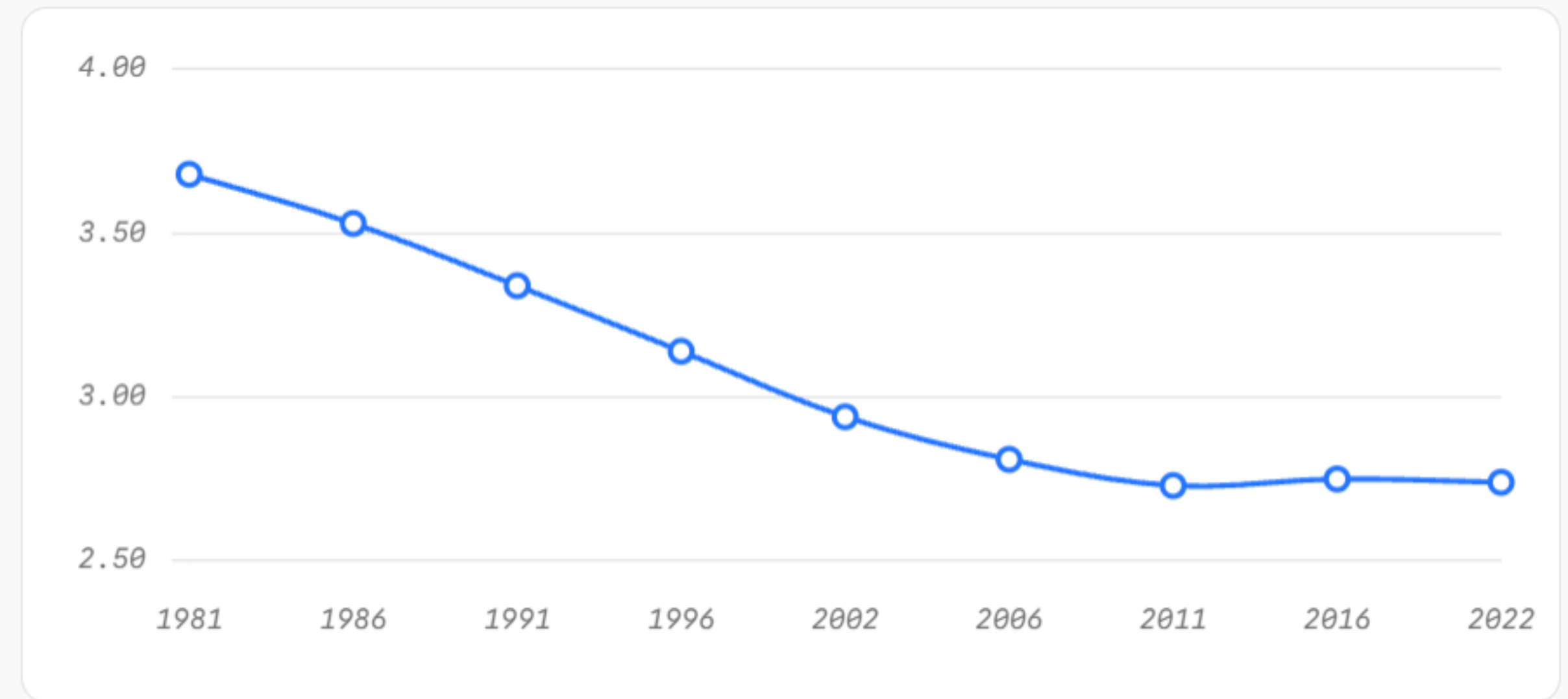
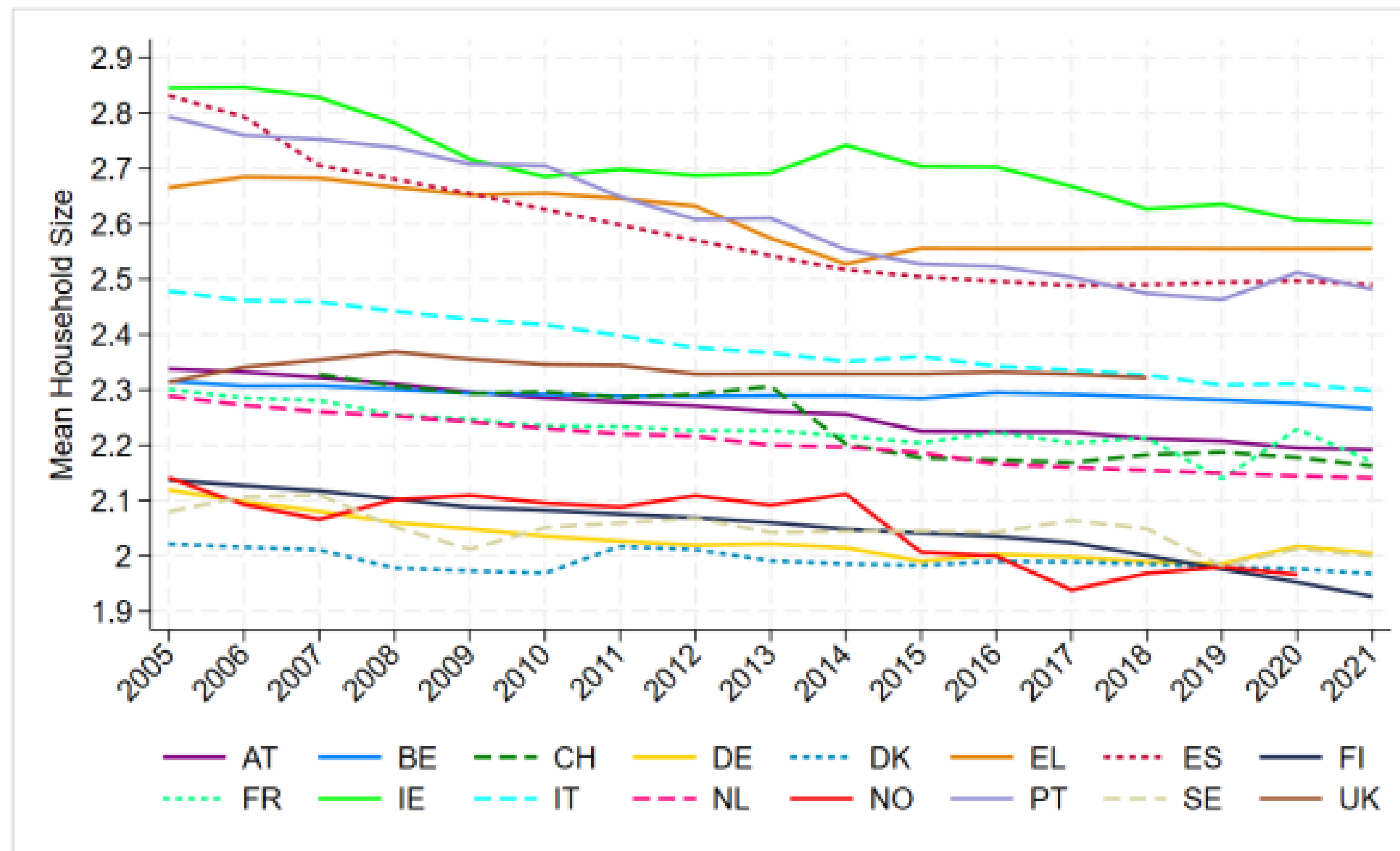


FIGURE 1 **HOUSEHOLD SIZE (AVERAGE NUMBER OF PERSONS PER HOUSEHOLD): 2005–2021**



Source: Authors' analysis of Eurostat EU-SILC data.

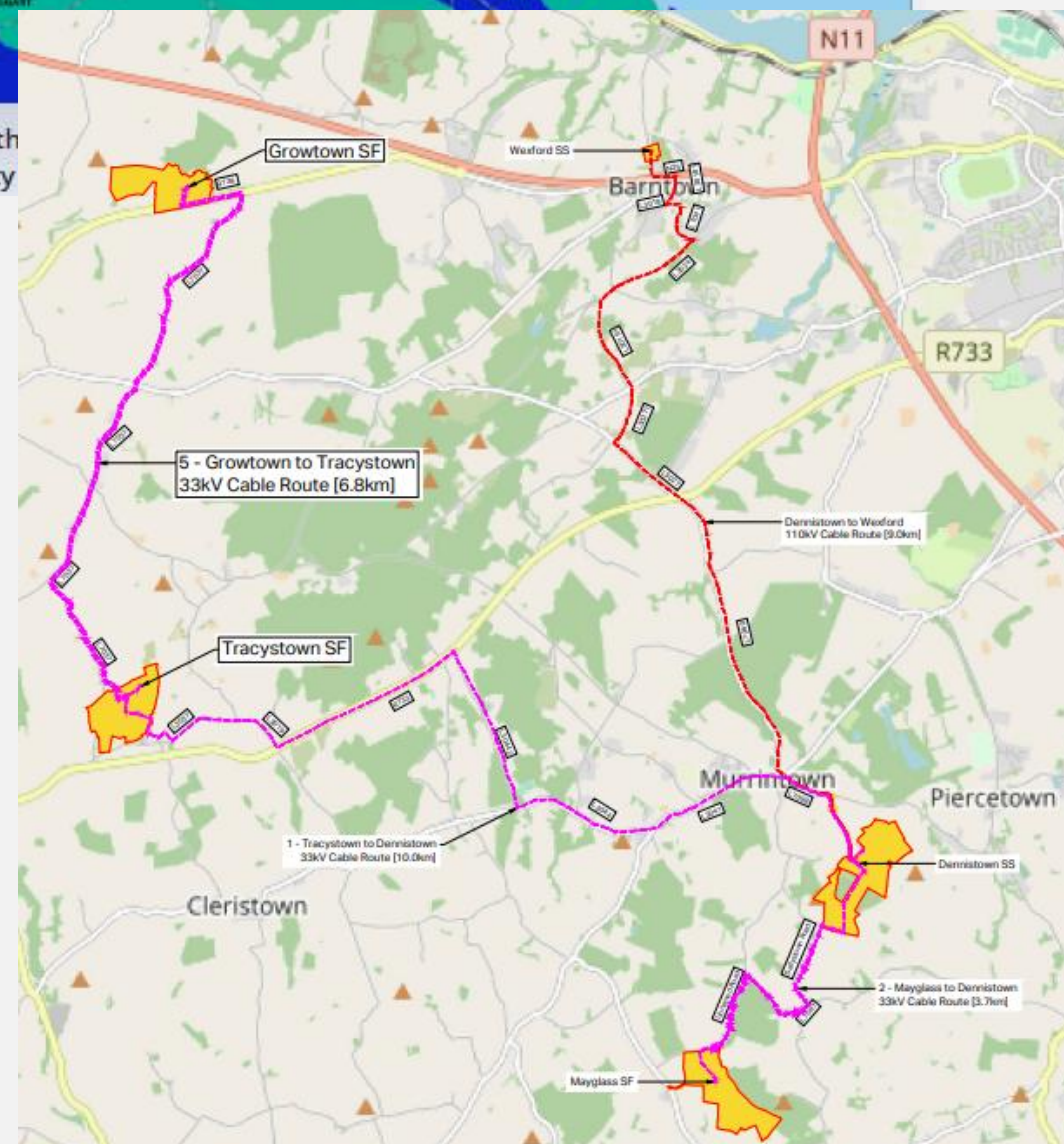
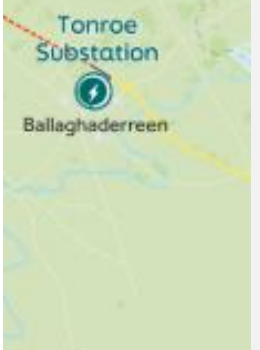
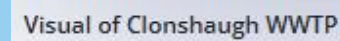
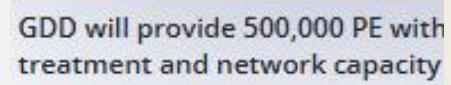
Background- Government Policy

- is to build 300,000 homes by 2030.
- is to deliver a pathway to cut Ireland's greenhouse gas emissions by 51% by 2030
- expand renewable energy, supporting cleaner transport, enhancing energy security, and delivering wider benefits.

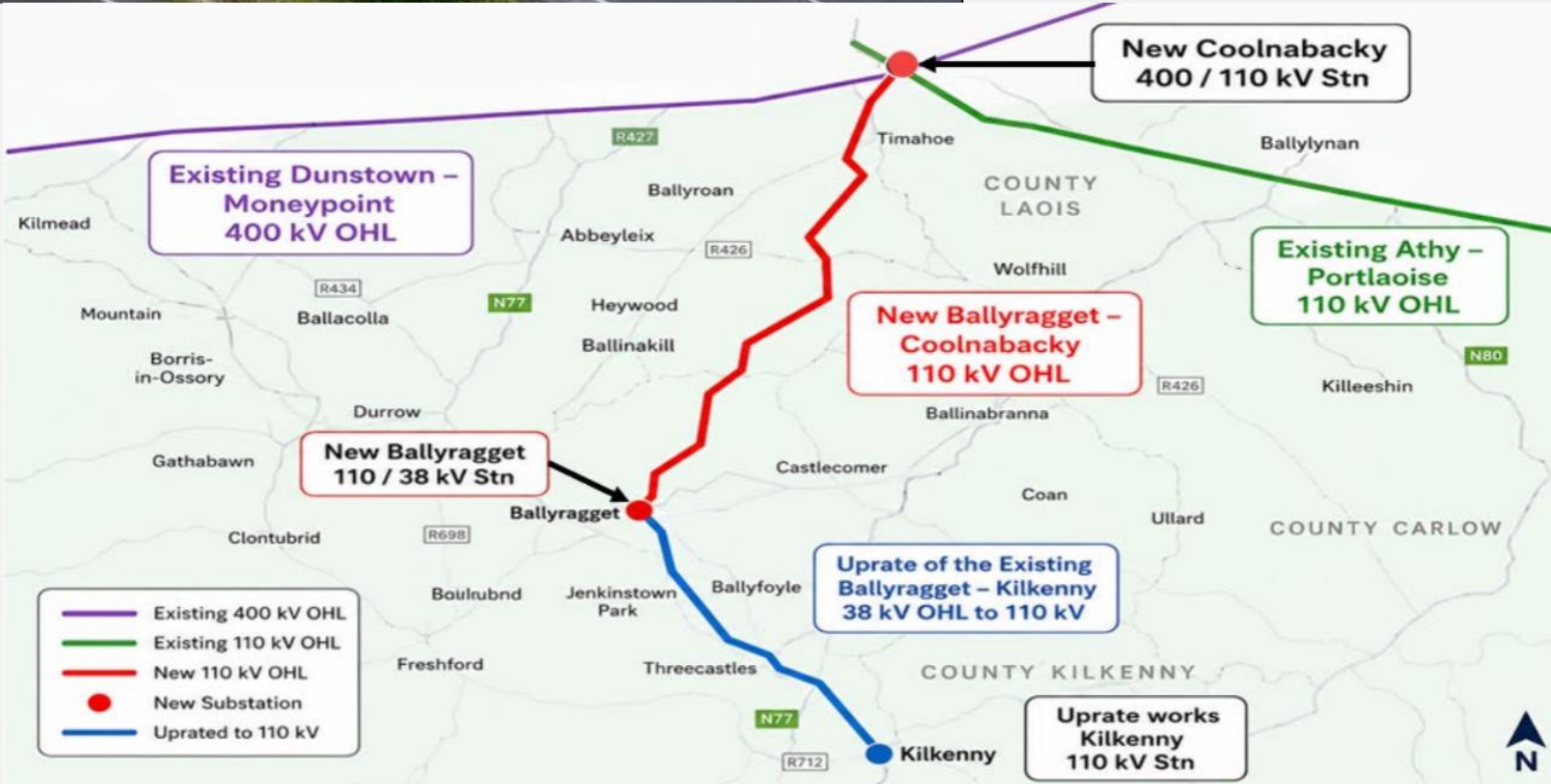


To enable this

- €11.7 billion for the additional water services capacity required for the new housing projections.
- Between €13.8 and €18.9 billion investment in electrical infrastructure
- €24.3 billion for transport infrastructure to 2030



Construction of Critical and Strategic Infrastructure



Its not being achieved quickly enough

Accelerating Infrastructure Taskforce established in 2025 by Minister for Public Expenditure, Infrastructure, Public Service Reform, and Digitalisation.

- Speed up infrastructure delivery
- Identify barriers
- Develop a small number of high impact reform actions that are robust, achievable, time-bound and are rigorously focused
- Oversee the subsequent implementation of these reform actions



Joint Utility Transport Clearing House

The **Joint Utilities and Transport Clearing House** is a non-statutory Taskforce established as part of **Action 21** of the Accelerating Infrastructure Report

Terms of Reference

- Identify and resolve issues with structures and processes that create bottlenecks and negatively impact the delivery of critical infrastructure;
- Invite relevant bodies to explain the rationale for current practices in the context of the above;
- Discuss options for the resolution of any identified inter utility – transport – local government sector issues and adopt these changes;
- Set up clear contact points in key bodies.



Action 21: Improve Utility Coordination at National and Local Level

Establish a new Joint Utilities and Transport Clearing House (JUTCH) to enhance collaboration between utilities. Supplement this with formal engagement structures at local level to promote more effective engagement between utilities and Local Government in the delivery of critical infrastructure.

Sub action	Timeline	Responsible Body
i. Establish a Joint Utilities and Transport Clearing House with representatives from DCEE, D/Transport, DHLGH, DPER, utilities, transport authorities, and Local Authorities, and agree terms of reference	Q4 2025	DPER
ii. Establish sub-group of JUTCH between national utilities and Local Authorities to enhance coordination and accelerate infrastructure delivery	Q1 2026	DHLGH
iii. Mandate formal engagement structures, with regular coordination, at local and regional levels between nominated points of contact from each utility and local authority	Q1 2026	DPER
iv. Ensure regular consultation and engagement with local councillors on strategic plans of utilities delivering infrastructure services.	Q2 2026	DHLGH
v. Develop work programme for JUTCH including: ➔ Facilitate early and ongoing engagement on major electricity, water, and transport projects ➔ Update codes of practice and technical standards (e.g. road openings, abnormal loads, no-dig technologies, emergency access) ➔ Coordinate linear infrastructure works to reduce duplication, disruption, and cost ➔ Act as an escalation point to resolve conflicts and remove barriers promptly	Q1 2026	JUTCH

Expected Outcome

- Reduced duplication and disruption in road openings and utility diversions
- Accelerated delivery of critical electricity, water, and transport infrastructure
- Improved coordination and predictability in project planning and execution
- More effective and proportionate licensing processes
- Timely resolution of issues as they arise

KPI

- Number of utility projects accelerated through coordinated road access
- Reduction in average time for road opening approvals
- Reduction in time for agreeing diversions of utilities needed for transport projects
- Decrease in repeated road openings for separate utility works

Supporting Stakeholders

DCEE, D/Transport, DHLGH, DPER, County and City Management Association (CCMA), CRU, ESB Networks, EirGrid, Uisce Éireann (UE), Transport Infrastructure Ireland/I

Joint Utility Transport Clearing House

Membership 14 agencies and departments

- Department of Public Expenditure, Infrastructure, Public Service Reform, and Digitalisation
- Department of Climate, Energy and the Environment
- Department of Housing, Local Government, and Heritage
- Department of Transport
- Representatives of Local Government
 - County and City Management Association
 - Local Government Management Agency
- Representatives from state bodies involved in the development of infrastructure:
 - ESB Networks
 - Uisce Éireann
 - EirGrid
 - National Transportation Authority
 - Transport Infrastructure Ireland
 - Gas Networks Ireland
 - Land Development Agency

JUTCH Terms of Reference

The Joint Utilities and Transport Clearing House is a non-statutory Taskforce established on foot of the Government Decision on the Accelerating Infrastructure Report and Action Plan of 3rd December.

Mission Statement

The mission statement of the Clearing House is to improve collaboration between utilities in the delivery of critical infrastructure. This will involve State utilities, transport infrastructure providers, and national and local government working together to improve the structures for cooperation and coordination in the delivery of critical infrastructure.

Terms of Reference

The terms of reference of the Clearing House are:

- Identify and resolve issues with structures and processes that create bottlenecks and negatively impact the delivery of critical infrastructure;
- Invite relevant bodies to explain the rationale for current practices in the context of the above;
- Discuss options for the resolution of any identified inter utility – transport – local government sector issues and adopt these changes;
- Set up clear contact points in key bodies.

Working Principles

The working principles of the Clearing House are:

- The Clearing House will avoid duplication and seek to complement and add value to the existing groups.
- The Clearing House will discuss issues and seek to reach a resolution that prioritises the delivery of infrastructure.
- While individual projects may be used to illustrate structural and process issues, the group will not be responsible for the delivery of individual capital projects, which remain the responsibility of relevant Departments.

The Clearing House will meet every 6-8 weeks or more frequently as required.

Membership

The Clearing House will be chaired by the Deputy Secretary General of the Department of Public Expenditure, Infrastructure, Public Service Reform, and Digitalisation.

The membership of the Clearing House will be comprised of Senior Officials from the following Government Departments:

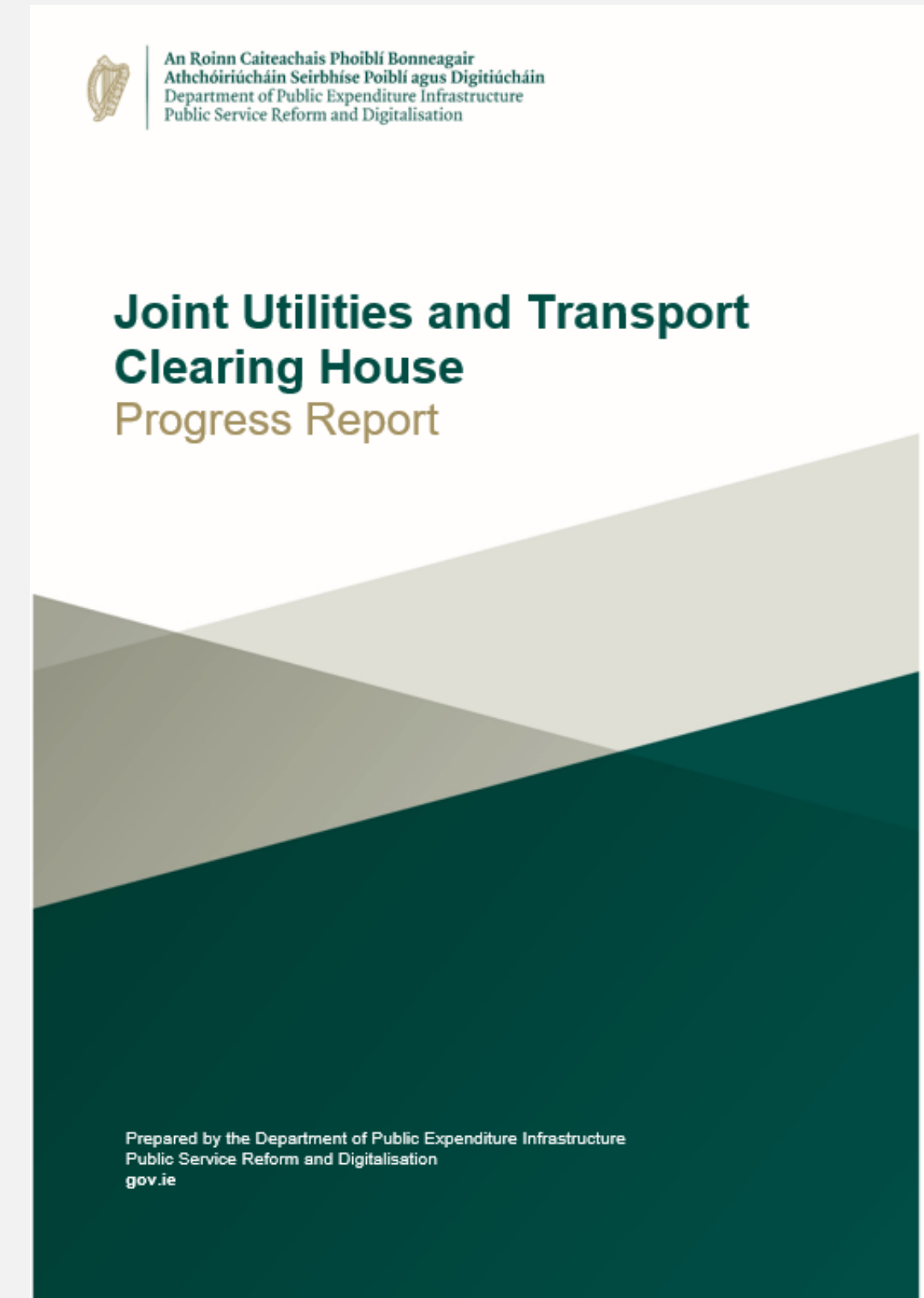
- Department of Public Expenditure, Infrastructure, Public Service Reform, and Digitalisation
- Department of Climate, Energy and the Environment
- Department of Housing, Local Government, and Heritage
- Department of Transport

In addition, representatives of Local Government:

- County and City Management Association
- Local Government Management Agency

Work since January

- Identified eleven priority issues affecting infrastructure delivery.
- Ownership, timelines and delivery actions have been agreed for each issue



Issues Identified

- Clarity on the designation of Strategic Infrastructure Development

Issue 1:



- Lack of Prioritisation in the processing of Planning and Consent Applications for Critical Infrastructure

Issue 2



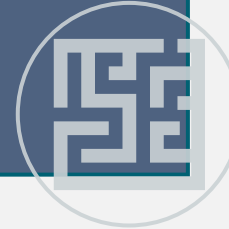
- Lack of fixed Timelines for Planning and Consenting Processes

Issue 3



- Slow, non-transparent Validation Processes and Further Information Requests

Issue 4



- Access to Private Land and the use of Statutory Powers, including CPO

Issue 5



- Lack of Formalised Engagement Structures between Utilities and Local Authorities.

Issue 6:



- Improving Alignment of Infrastructure Plans between Utilities and Local Authorities

Issue 7



- Variability in Standards Across Local Authorities

Issue 8



- Inefficiencies in the Application Process of Road Opening Licenses

Issue 9



- Prioritisation of Finite Subsurface of the Road Network for State Infrastructure

Issue 10



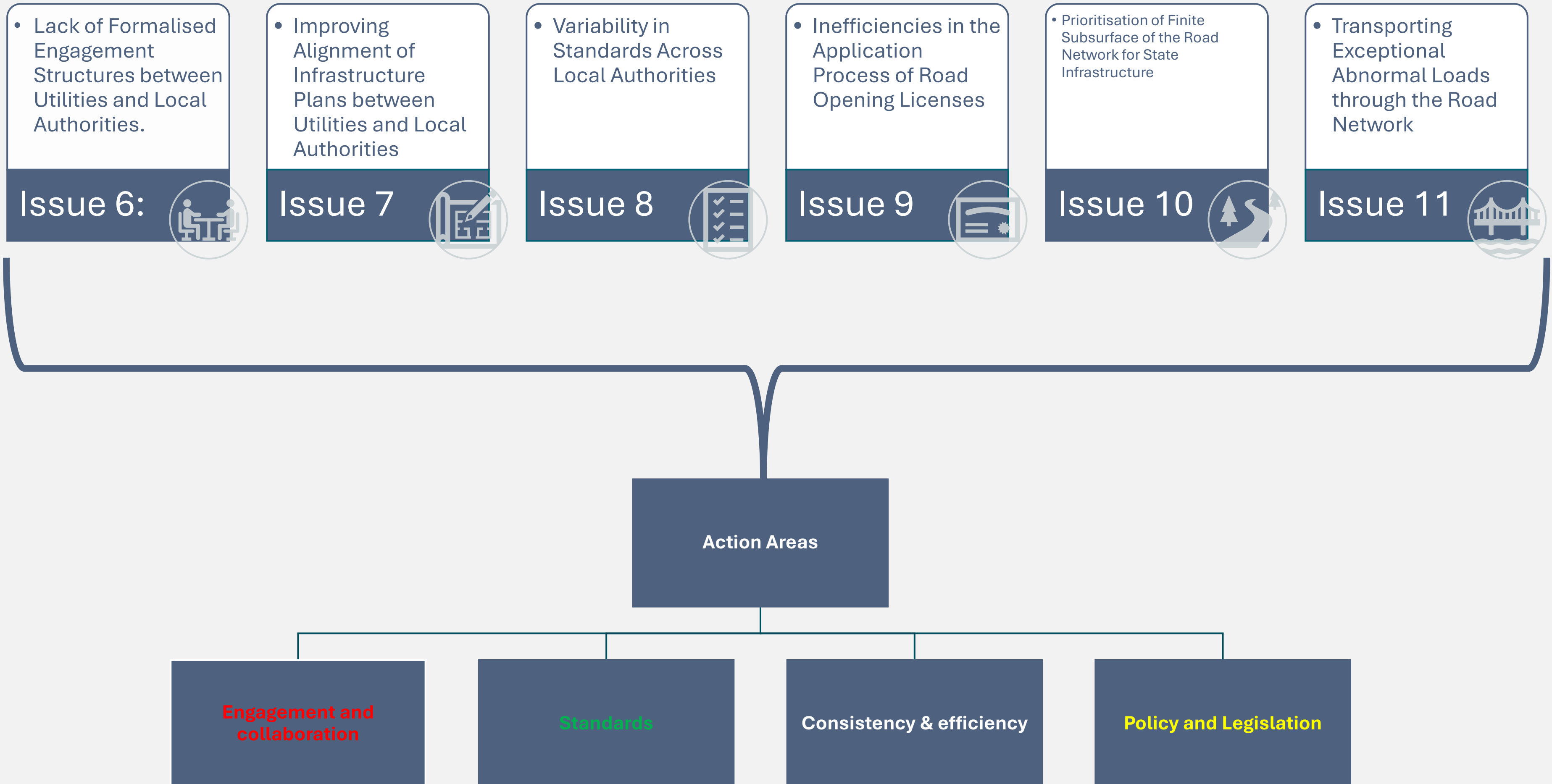
- Transporting Exceptional Abnormal Loads through the Road Network

Issue 11



Issues Identified with direct TII- Road Authority actions





- Lack of Formalised Engagement Structures between Utilities and Local Authorities.

Issue 6:



- Create **Infrastructure Liaison Officer** in each local authority for critical infrastructure and designated strategic infrastructure
 - **single accountable point of contact**
 - **timely and appropriate response**
 - **adherence to national protocols and standards**
 - **prioritisation and resourcing**
 - **Reporting**
- Regional Housing Activation Steering Groups



- Lack of Formalised Engagement Structures between Utilities and Local Authorities.

Issue 6:



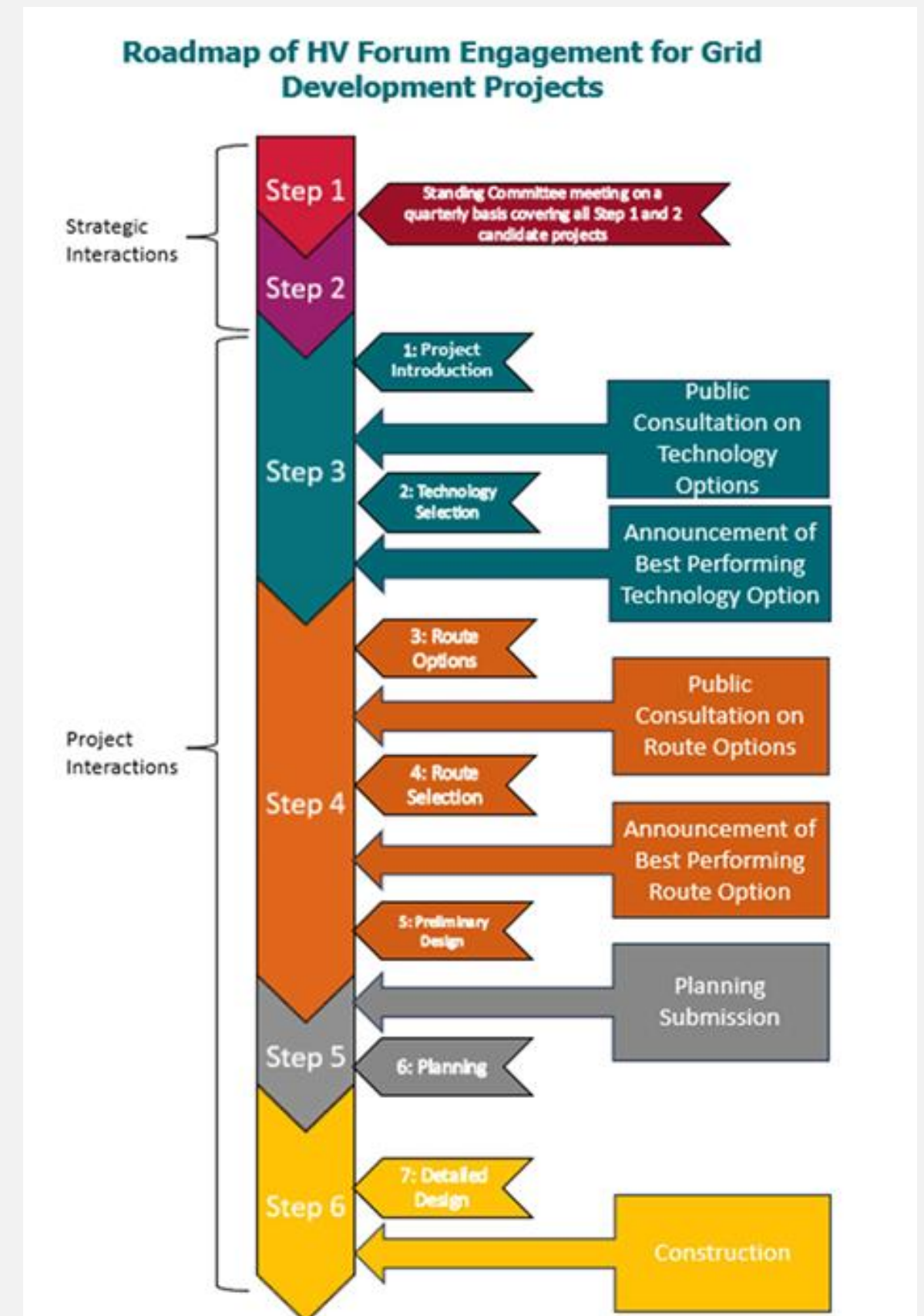
- **Strengthen existing Joint Utility Local Authority JULA Forum through**
 - Updated TOR
 - **Widen membership** to include renewable generation and grid infrastructure - WEI, SI, IBEC, EirGrid and all major utilities, TII and LAs
 - **Oversight** through an interdepartmental committee



Action Area 1: Engagement and Collaboration

Expand the Electricity Transmission Infrastructure Development Roads Sector Engagement Framework

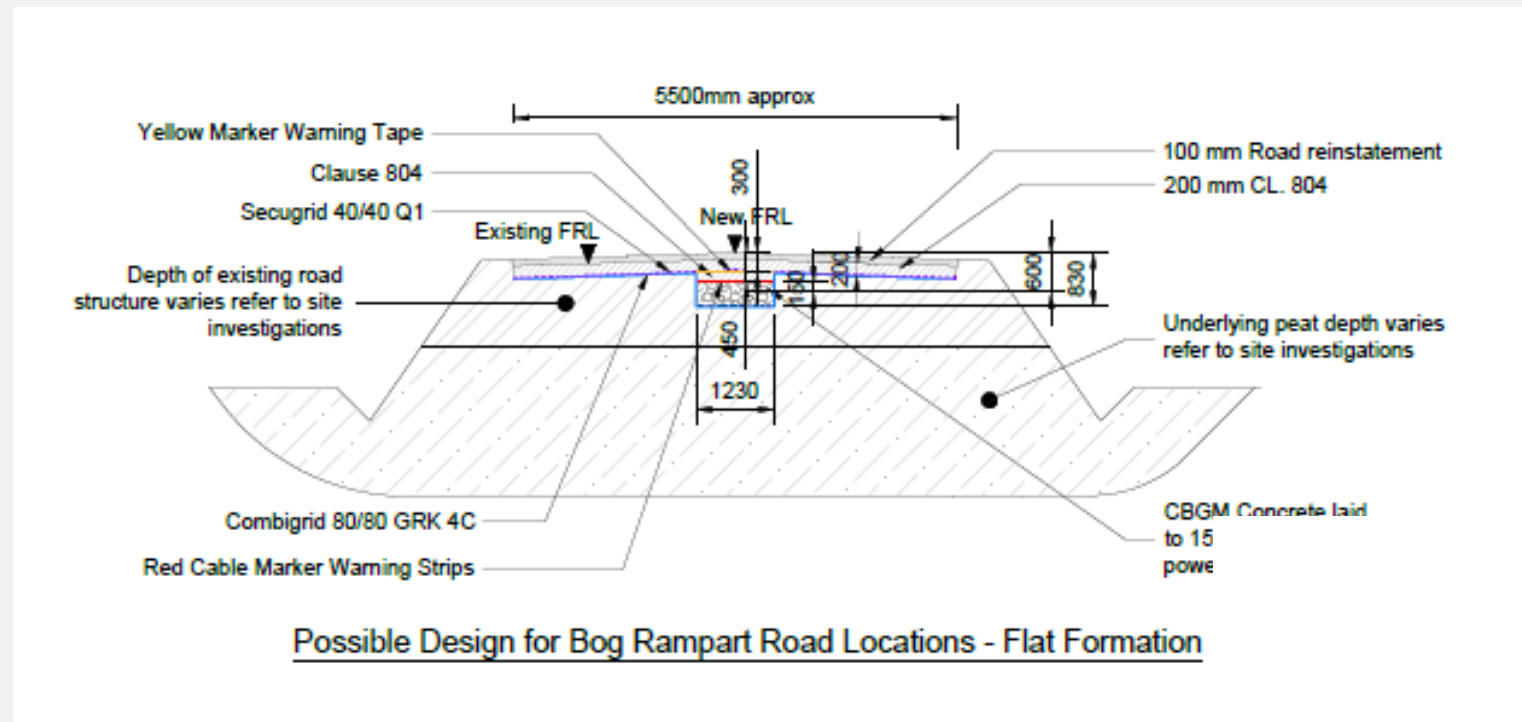
Feature	Planned Design Pre-Workshops	Amended Design Post-Workshop	
		Workshop 1	Workshop 2
N26			
Number of All JBs on N26	16	9	9
Number of JBs in carriageway of N26	16	4	3
Length of UGC Trench in Road of N26	8.7km	7.3km	5.1km
Length of UGC Trench in Margin of N26 or with HDD	0.4 km	1.8km	4km
N5			
Number of All JBs on N5	34	23	23
Number of JBs in carriageway of N5	34	4	0
Length of UGC Trench in Road of N5	26.2 km	12.5 km	0.05km
Length of UGC Trench in Margin of N5	0.3 km	14 km	26.45 km



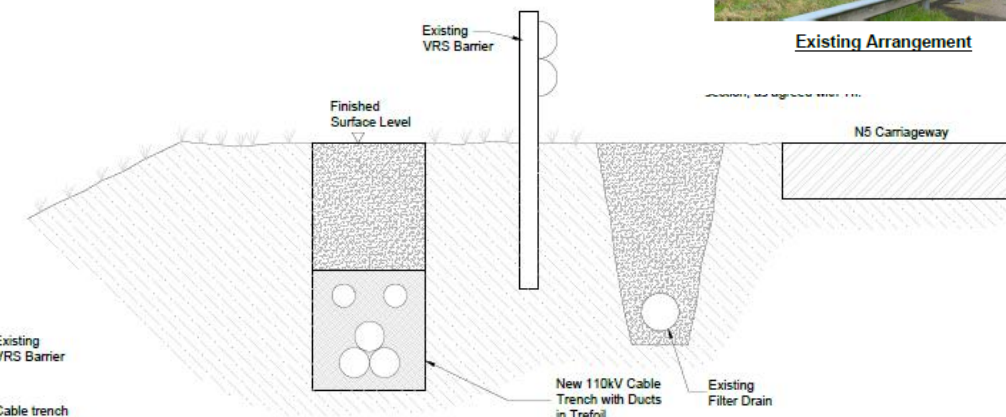
62

Action Area 2: Standards

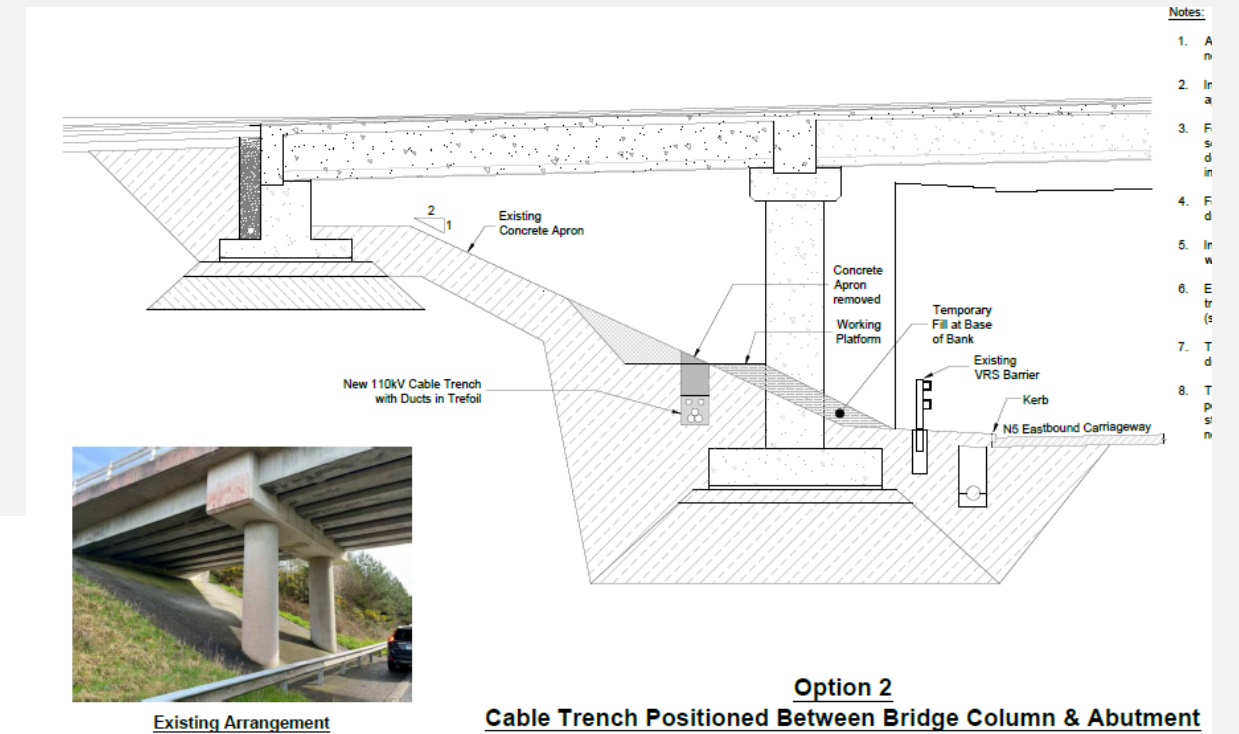
Electricity infrastructure in roads standards— further work



Proposed Arrangement



Cable Trench Positioned Between VRS Barrier & Edge of Fill Embankment



Existing Arrangement

Notes:
1. A
n
2. In
a
3. F
s
d
in
4. F
d
5. In
w
6. E
tr
(t
7. T
d
8. T
p
s
n

- Purple Book Review e.g.
 - Directional Drilling
 - Reinstatement standards
- Strengthen status as a code of practice

Guidelines for Managing Openings in Public Roads

Guidelines for the Opening, Backfilling and Reinstatement of Openings in Public Roads

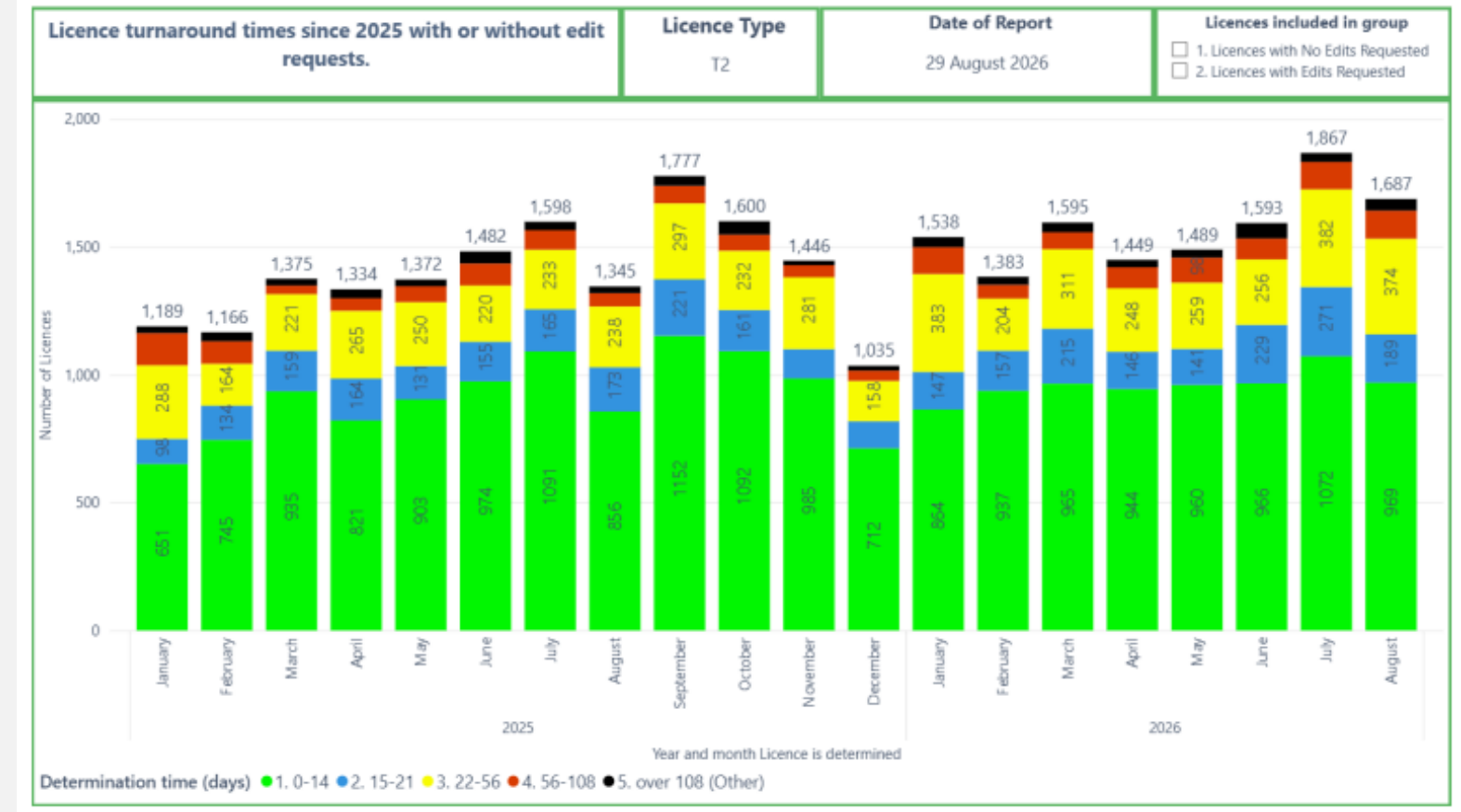


Action Area 3 Consistency and efficiency

- Monitoring of turnaround times for consent through JULA
- Provision of necessary support to local authorities to implement consistency measures particularly standards from DOT and TII
- Creation of Electrical Infrastructure Support Unit in RMO
- Review and publish a standardised national fee structure for road opening charges

Figure 2: T2 licence turnarounds over time since 2025 with or without edit requests

- The turnaround of T2 applications is relatively consistent over time with approximately 61% of applications determined in the last 6 months being within 14 days.
- The overall number of T2 applications has increased for the period May - August 2026 in comparison to the same period in 2025.
- Some applications are complex and some have edit (i.e. further information) requests. The RMO is not aware of utility issues with these licence turnaround times.
- Further detail provided in Figure 5 below

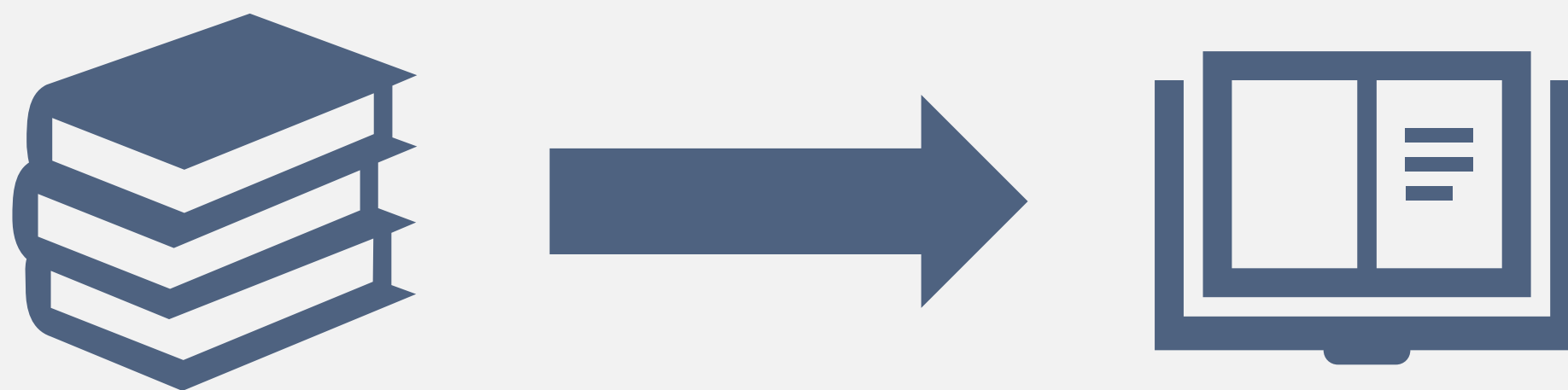


Action Area 3 Consistency and efficiency

- Abnormal Load Working Group moving the application process to a single application, payment and permit system for Road Hauliers.
- For Exceptional Abnormal Loads mapping to be developed from Q1 2027 assessing each structure on key routes
- The engineering expertise required to assess structural impacts on road surfaces and bridges will be procured centrally with input from sector.

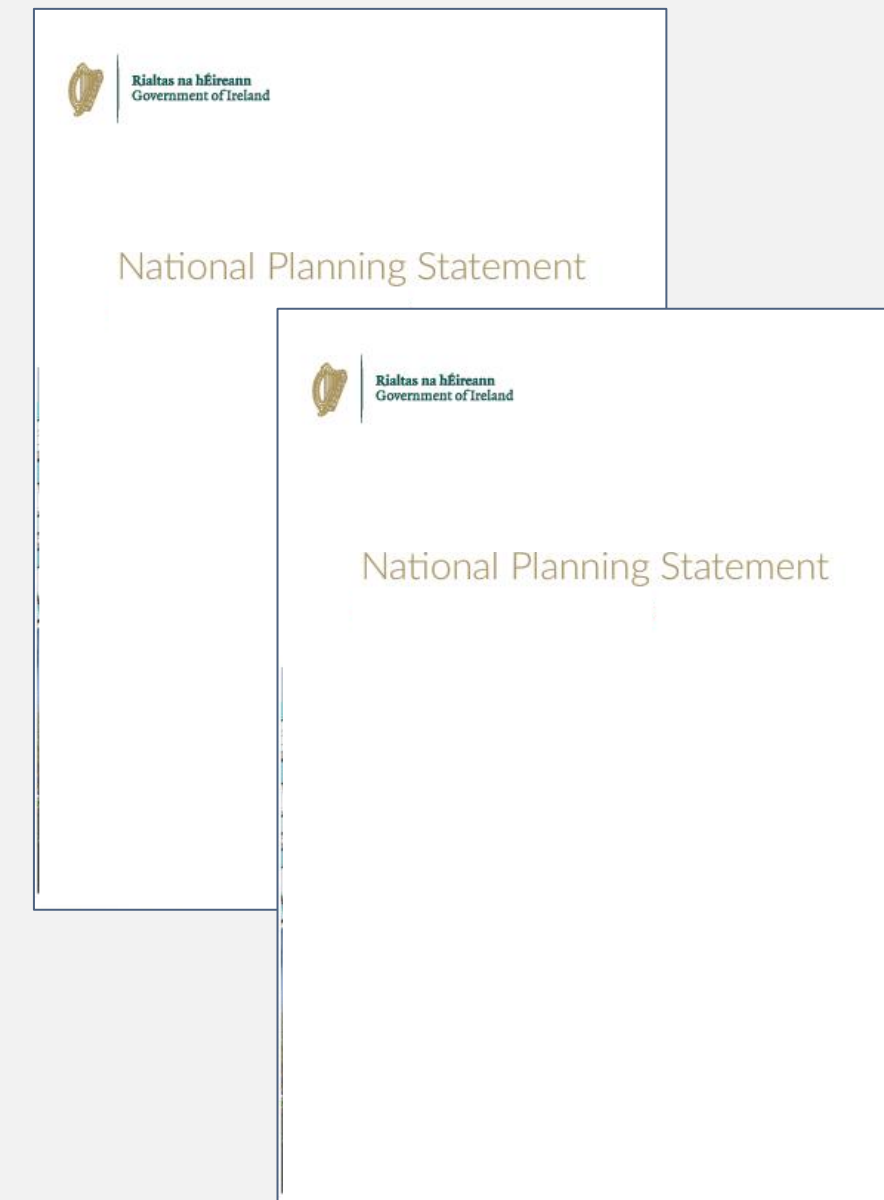


- Currently eight pieces of legislation relate to road openings
- The Department of Transport is consulting on a Road Traffic and Roads Bill to mandate a single, consistent national approach to the management of roadworks and licence coordination.



Action Area 4 Policy and Legislation

- National Planning Statement on Critical Infrastructure
- Improving Alignment of Infrastructure Plans between Utilities and Local Authorities
- Prioritisation framework is being explored to grant preferred access to the road network for State utility infrastructure



Implementation and next steps

- Immediate (Q3 2026):
 - Local authority Infrastructure Liaison Officers, Purple Book standards and interim guidance updates, performance reporting on road opening licence turnaround times initiated.
 - RW 18 /2024 EAL movements being updated
- Short-term (Q4 2026):
 - Rollout of the MyCoCo digital portal for single EAL applications;
 - Standards & process updates
 - Road and Road Traffic Bill; drafting
- Medium Term (2027):
 - Implement engagement framework for new infrastructure to their areas
 - Consolidation of Legislation in conjunction with DPER, Policy statements, central assessments for EAL.
 - Further Road Standards update ongoing

Implementation and next steps

- DPER developing a reporting template for the implementation of agreed solutions.
- DPER reviewing and consolidating the remaining bottlenecks raised
- DPER completing bilateral meetings with departments to confirm the legislative work programme
- Designated Projects under the Critical Infrastructure Act awareness that every Public Sector body is obliged to accelerate any touchpoint they have with a designated project under the Critical Infrastructure Act.

What is JUTCH about?

- Background
- Accelerating Infrastructure
- JUTCH
- Issues
- Actions

Thank you.



TRANSPORT INFRASTRUCTURE IRELAND

Using AI to Detect Road Traffic Incidents

Sean Hollywood, Assistant Motorway Operations Manager

Using AI to Detect Road Traffic Incidents

Seán Hollywood

Assistant Motorway Operations Manager, TII



TII's Motorway Operations Control Centre (MOCC)



- **Located within Dublin Tunnel Control Building, East Wall Road, Dublin**
- **Combined motorway and tunnel control centre**
- **Monitoring 1,300km of Motorways and high-speed Dual Carriageways**
- **Monitoring Dublin Tunnel and Jack Lynch Tunnel**
- **Operated by Egis Road and Tunnel Operations (ERTO)**

Existing Incident Detection Methods

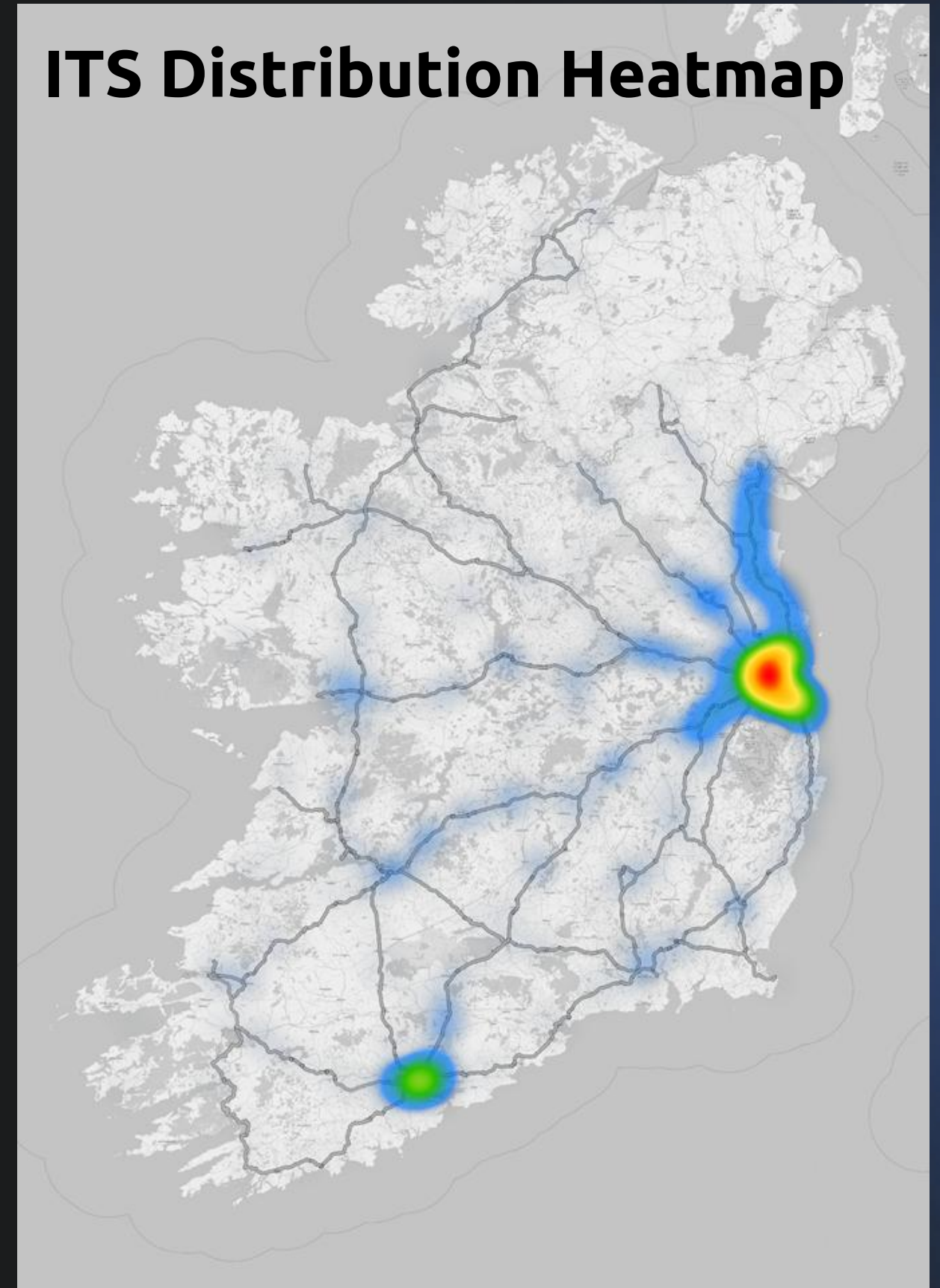
ITS Equipment

- CCTV Cameras
- Automatic Incident Detection Loops (AID)
- Journey Time Management System

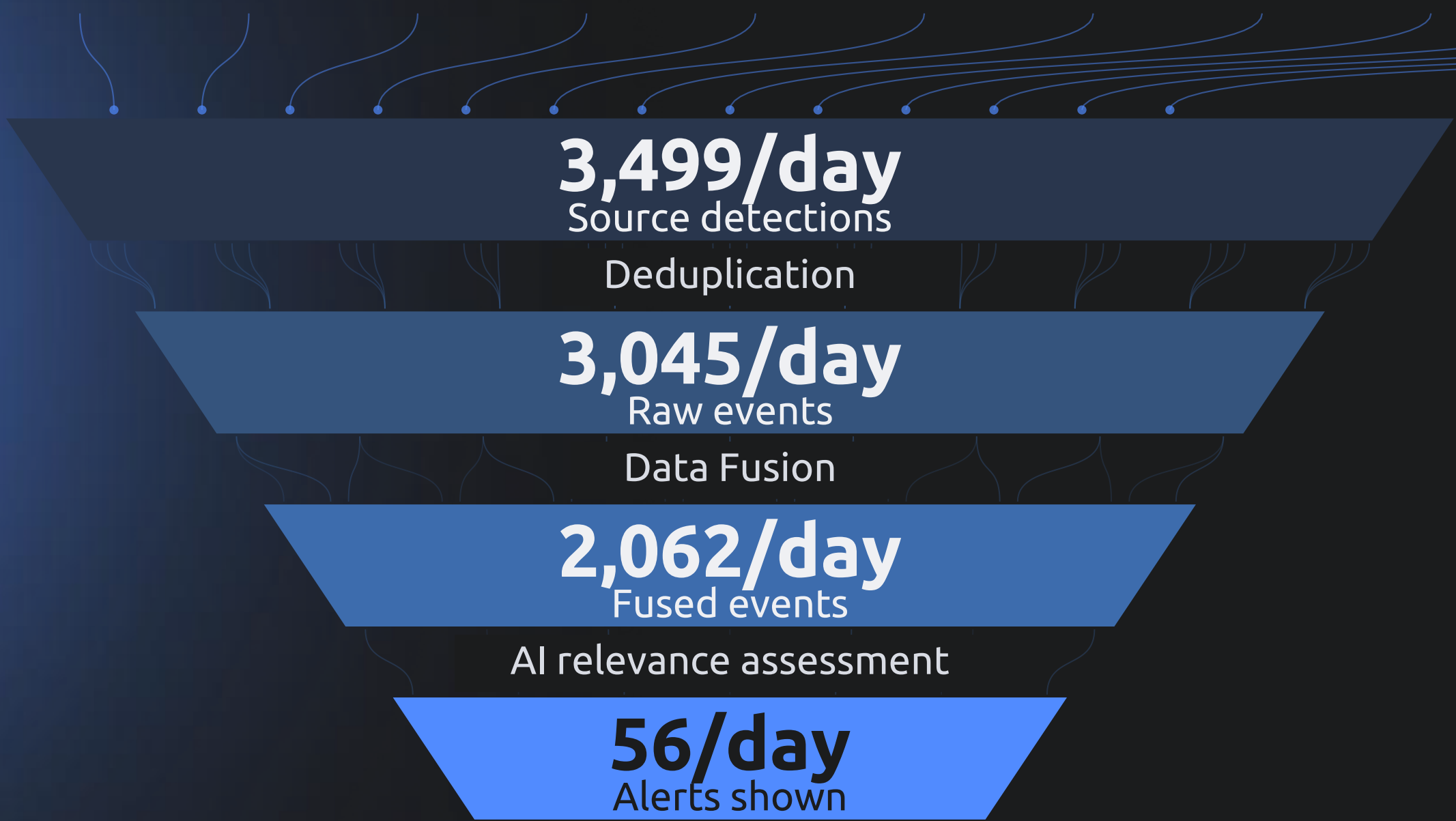
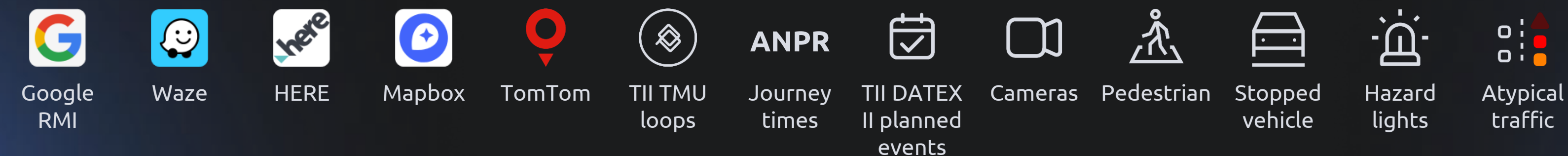
Phone

- An Garda Síochána
- General Public
- Emergency Roadside Telephones (ERT)
- MMarC / PPP companies

ITS Distribution Heatmap



Lanternn – Incident Detection through Data Fusion



↓ **98.4%**

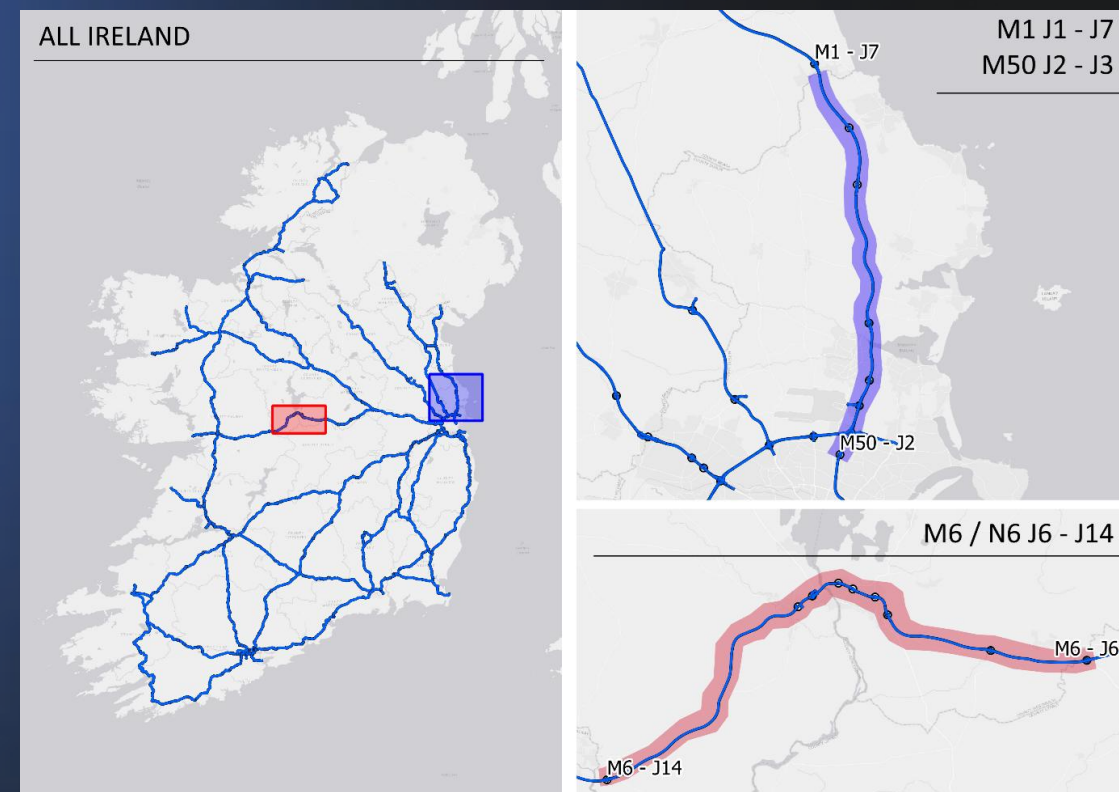
Fuses and filters detections to only alert relevant events

Lanternn Rollout on the Motorway and Dual Carriageway Network

JUN 24–AUG 25

Localised pilot

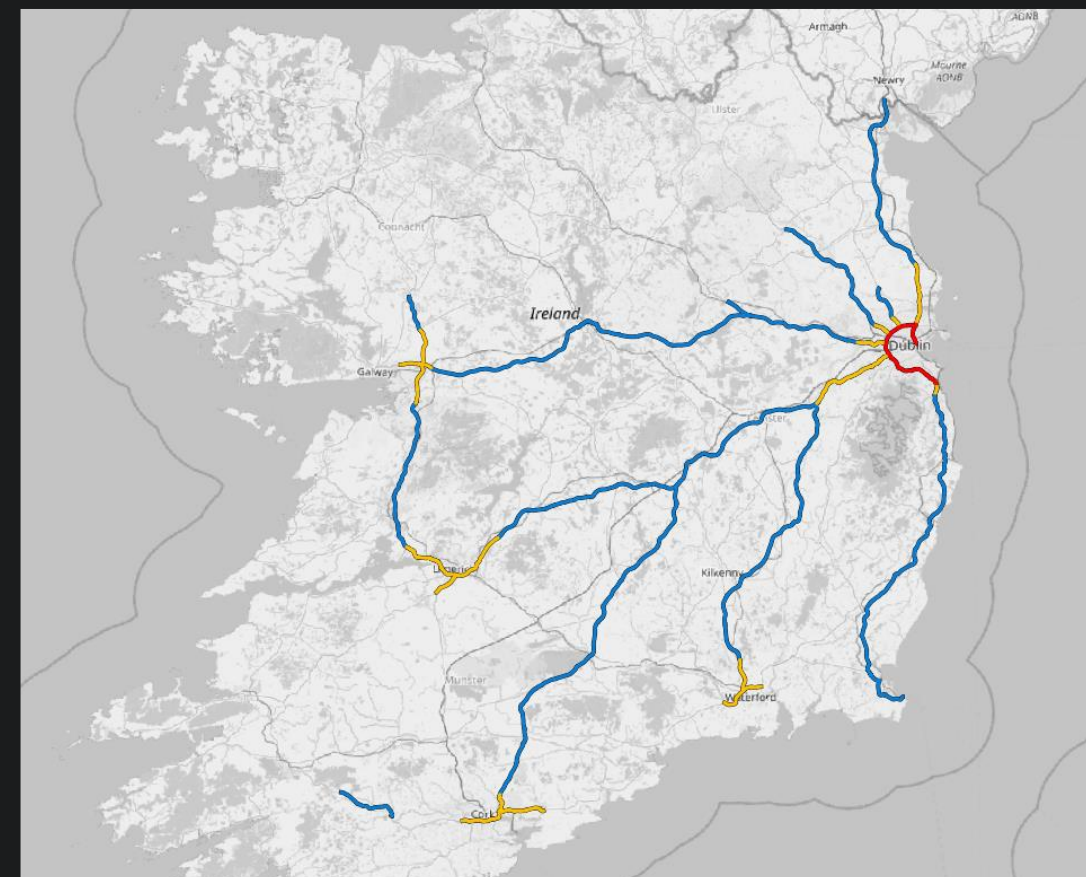
≈70 km across two corridors



SEP 25–JAN 26

Nationwide rollout

16 motorway and national-road routes



FEB 26–NOW

Nationwide operation

All regions, all operators



Lanternn Actionable Events Since April 2025

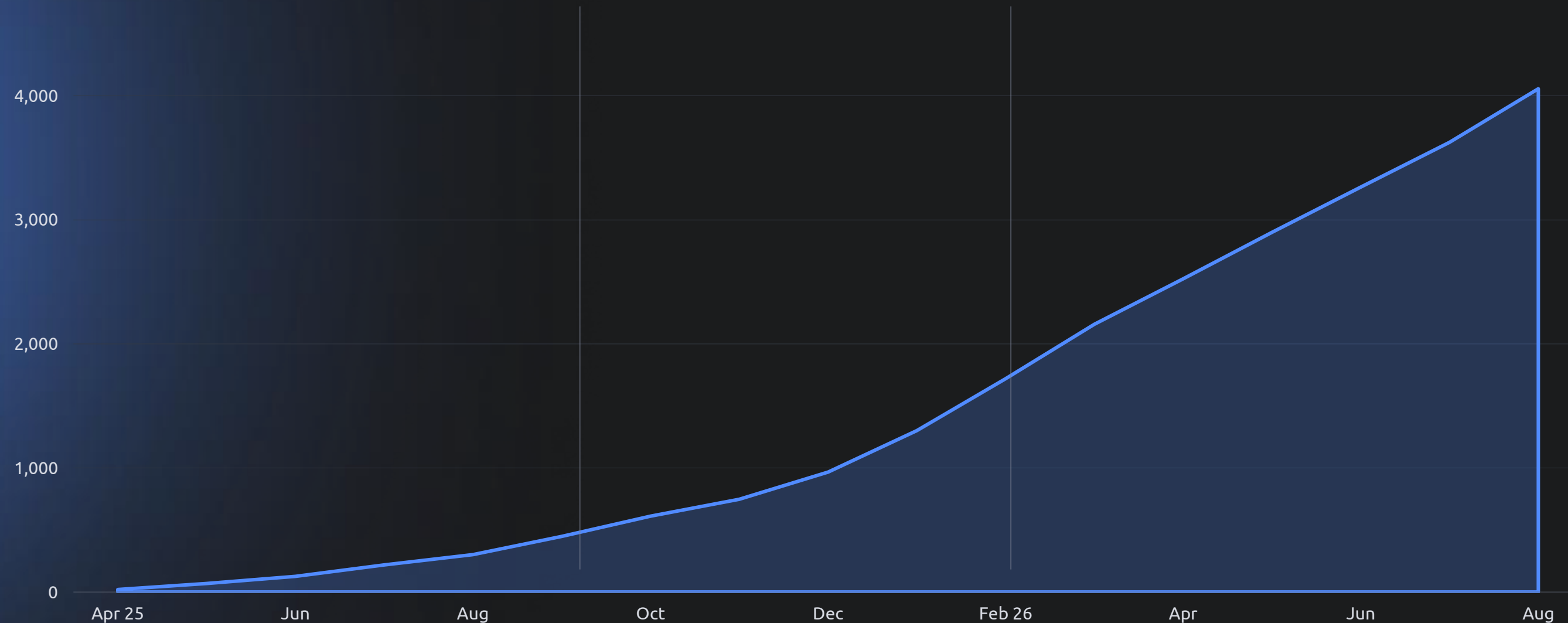
4,057 Actioned events since April 2025

SEP 2025

Rollout agreed

24 FEB 2026

Nationwide go-live



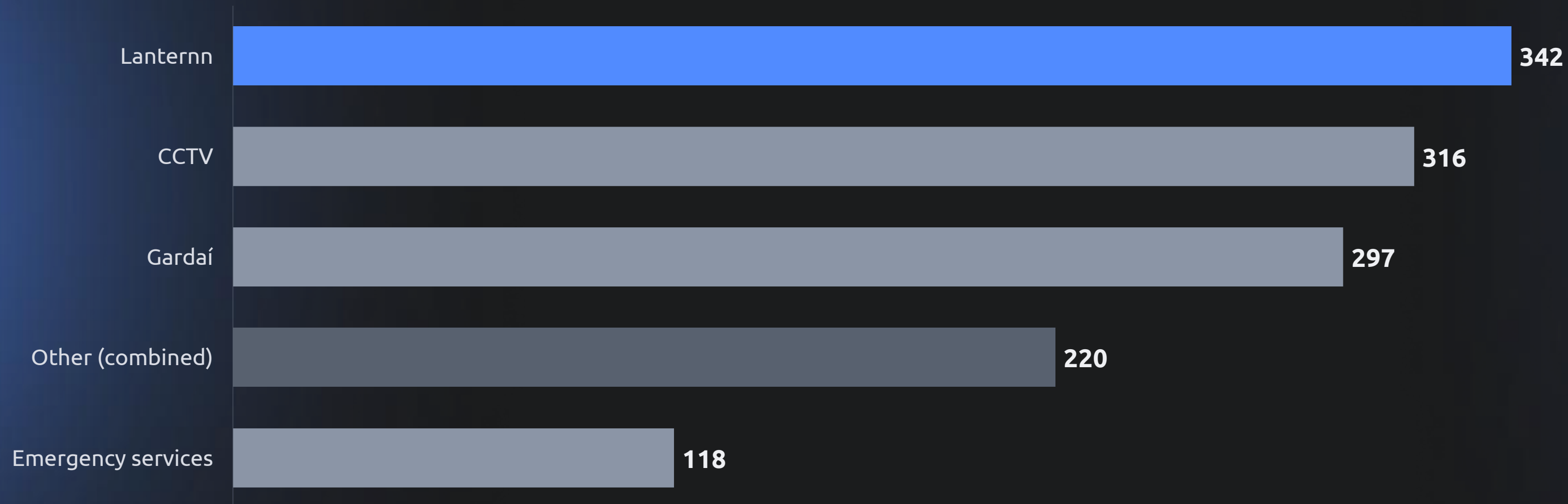
Cumulative Actioned events, April 2025–August 2026



Actioned event locations

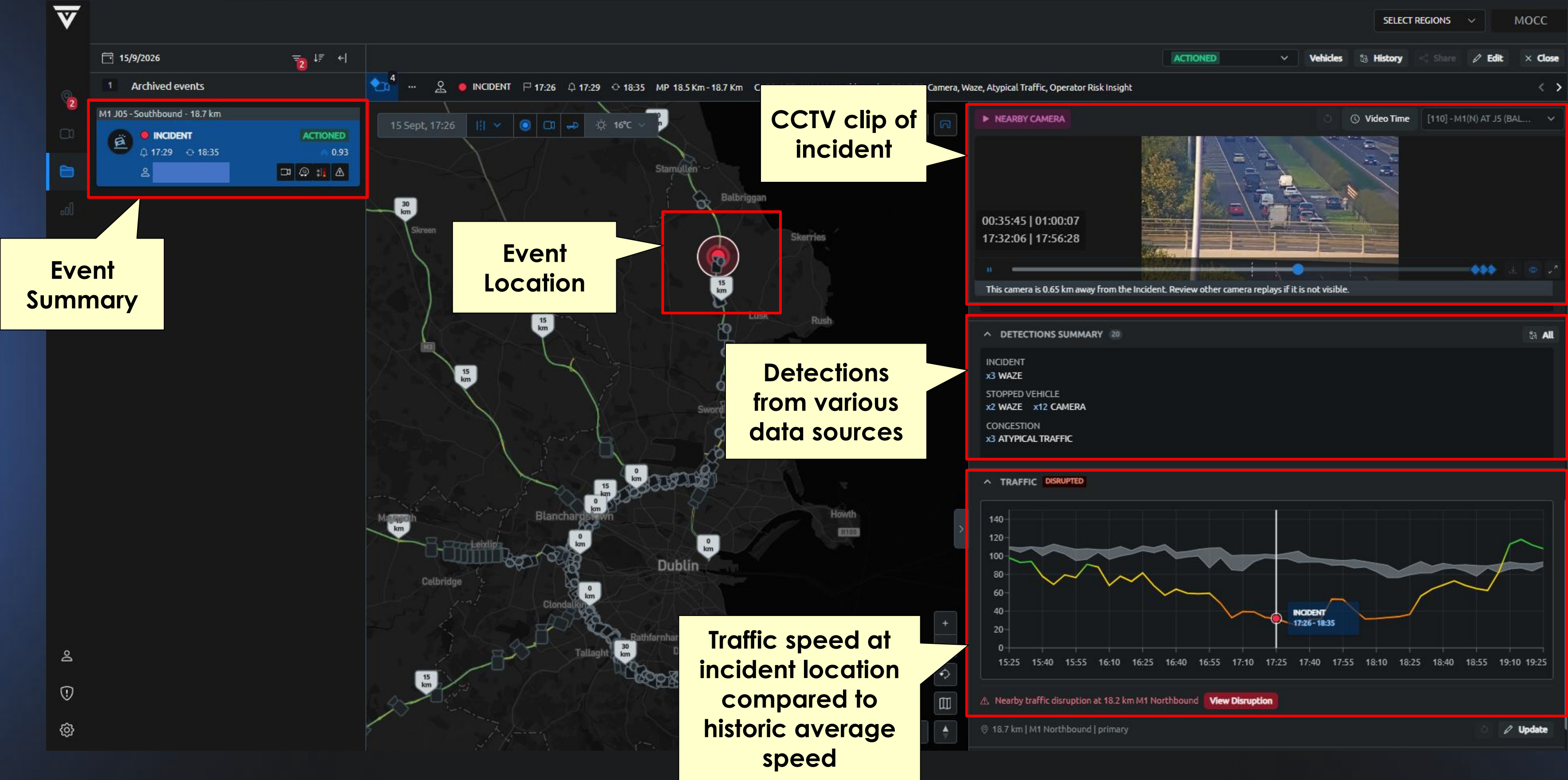
Lanternn is now the MOCC's largest single source of collision notifications

26% of collision notifications now come from Lanternn.



March–August 2026

Lanternn User Interface



It combines disparate evidence to surface relevant incidents faster

- Incident, 3 August 2026, M50 J5-J6 southbound
- High system confidence level that incident is genuine
- Detected by Waze and CCTV – backed up by previous similar incidents

M50 J05-J06 - Southbound - 15.3 km

INCIDENT

🔔 21:29 🕒 22:17

👤 Unassigned

ACTIONED

📶 0.96

📺 📷 ⚠️

3/8/2026

30 Archived events

M4 J01-J02 - Westbound - 1.3 km

STOPPED VEHICLE **ASSESSED**

🔔 23:12 🕒 23:32

👤 Unassigned

M50 J05-J06 - Southbound - 15.3 km

INCIDENT **ACTIONED**

🔔 21:29 🕒 22:17

👤 Unassigned

M7 J27-J26 - Eastbound - 152.3 km

INCIDENT **ACTIONED**

🔔 20:32 🕒 23:06

👤 Unassigned

M50 J06-J05 - Northbound - 14.7 km

STOPPED VEHICLE **ACTIONED**

🔔 19:39 🕒 20:24

👤 Unassigned

M50 J11 - Southbound - 29.2 km

STOPPED VEHICLE **ACTIONED**

🔔 19:16 🕒 20:06

👤 Unassigned

M8 J11-J12 - Southbound - 81.3 km

INCIDENT **ACTIONED**

🔔 18:45 🕒 19:57

👤 Unassigned

M8 J18-J19 - Southbound - 139.1 km

3 Aug, 21:27

16°C

[525] - M50(N) MP15.1 Before J5 (N2)

[526] - M50(N) MP15.5 After J6 (N3)

6: N3 Blanchardstown

Elm Green Nursing Home

Elm Green Pitch and Putt

15 km

SELECT REGIONS MOCC

ACTIONED Vehicles History Share Edit Close

NEARBY CAMERA

Video Time [525] - M50(N) MP15.1 B...

00:32:24 | 01:00:21

21:29:27 | 21:57:24

This camera is 0.14 km away from the Incident. Review other camera replays if it is not visible.

ADDITIONAL EVENT DATA

DETECTIONS SUMMARY

TRAFFIC NOT DISRUPTED

140

120

100

80

60

40

20

0

19:40 20:00 20:20 20:40 21:00 21:20 21:40 22:00 22:20 22:40 23:00 23:25

INCIDENT 21:27 - 22:17

15.3 km | M50 Southbound | primary

Update

RISK FACTORS



RISK FACTORS

RISK RATING: MODERATELY ELEVATED

Low High

Historical Pattern 5 Similar Events

Weekday Monday

Rush Hour Active

Speed Fast 108 Km/H

Rain Light 2.0 Mm/H

Data Fusion in areas of low ITS coverage

M4 J08-J09 - Westbound - 25.6 km

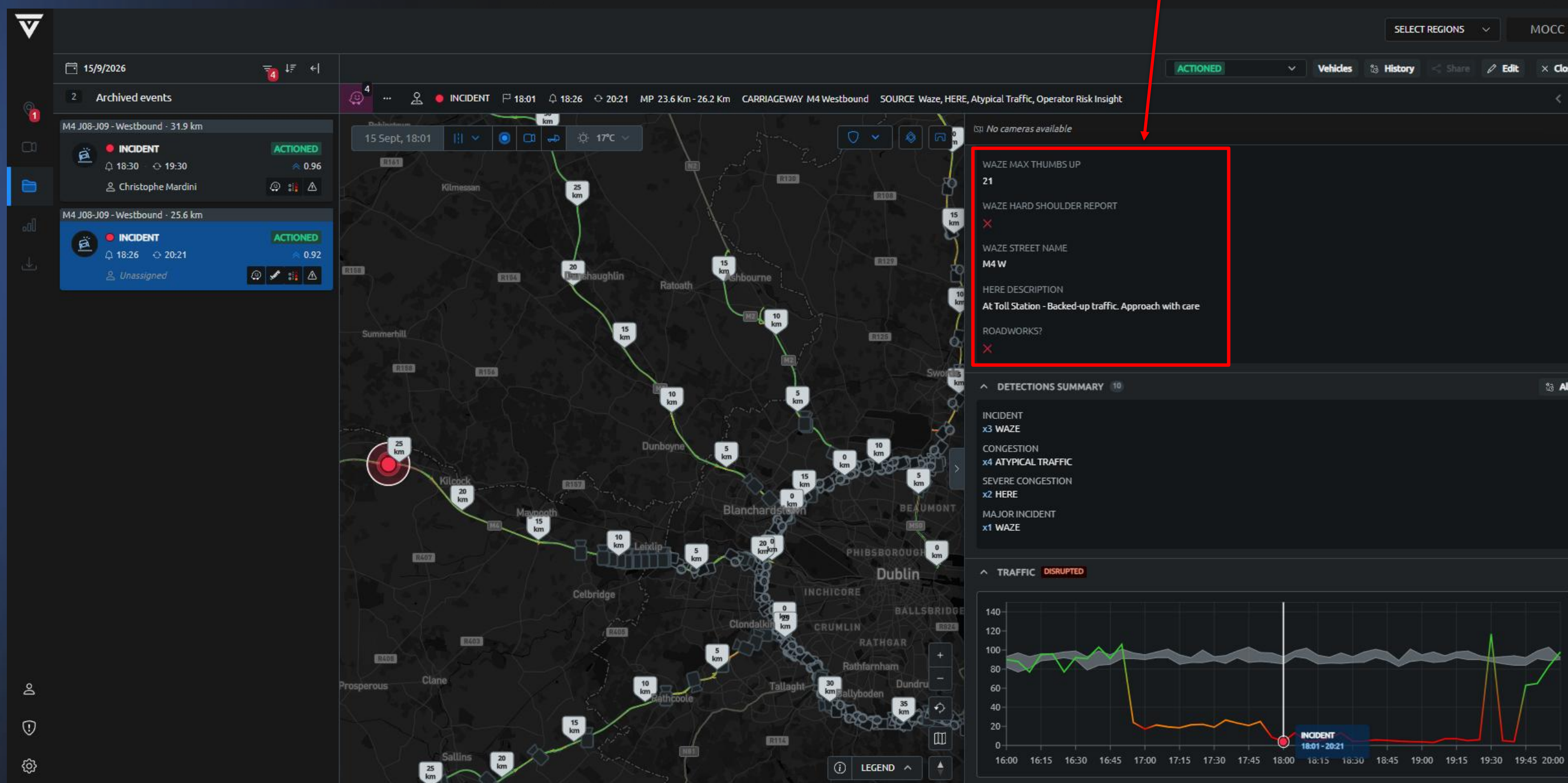
INCIDENT **ACTIONED**

🔔 18:26 · 🕒 20:21

👤 *Unassigned*

🕒 📍 📊 ⚠️

- Incident, 15 September 2026, M4 J8-J9 westbound
- Detected by Waze, Here and atypical traffic
- Verified by metadata in the absence of CCTV



Data Fusion frequently highlights collisions beyond (or behind) cameras

M11 J05 - Southbound · 10.7 km

 **INCIDENT** ACTIONS

🔔 16:27 🔄 17:52 📶 0.98

👤 *Unassigned*






- Incident, 9 September 2026, M11 J4-J5 southbound
- Detected by Waze, Here, and atypical traffic
- Verified by CCTV



9/9/2026

72 Archived events

- M11 J06-J05 - Northbound - 12.7 km
 - STOPPED VEHICLE ASSESSED
- N40 J04-J05 - Eastbound - 5.3 km
 - STOPPED VEHICLE ASSESSED
- M7 J03-J04 - Westbound - 5.4 km
 - INCIDENT INVALID
- M50 J05-J03 - Northbound - 11.8 km
 - PEDESTRIAN ON ROAD ASSESSED
- M11 J05 - Southbound - 10.7 km
 - INCIDENT ACTIONED**
- M4 J02-J01 - Eastbound - 1.3 km
 - STOPPED VEHICLE ACTIONED
- N40 J06-J07 - Eastbound - 9.3 km
 - STOPPED VEHICLE ACTIONED
- M8 J04-J05 - Southbound - 32.0 km
 - INCIDENT ASSESSED
- M7 J11-J12 - Westbound - 32.9 km
 - STOPPED VEHICLE ASSESSED
- M50 J05 - Southbound - 12.8 km
 - STOPPED VEHICLE ASSESSED

9 Sept, 16:26

[601] - M11(S) MP10.3 Before J5 (Bray North)

[602] - M11(N) MP11.5 Before J4 (M50)

5: Bray

11.5 km

NEARBY CAMERA

00:29:07 | 01:00:03
16:25:54 | 16:56:50

This camera is 0.23 km away from the Incident. Review other camera replays if it is not visible.

ADDITIONAL EVENT DATA

WAZE MAIN TYPE MAX THUMBS UP 100

WAZE MAX THUMBS UP 100

WAZE HARD SHOULDER REPORT

WAZE STREET NAME M11S

HERE DESCRIPTION At Bray North, Shankill - Traffic congestion

ROADWORKS?

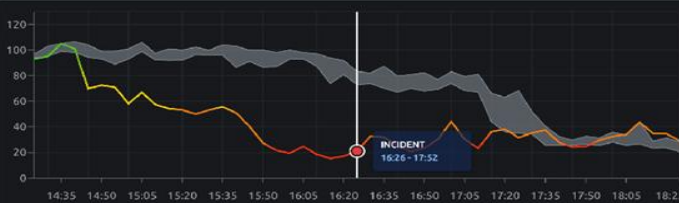
DETECTIONS SUMMARY

INCIDENT x1 WAZE

STOPPED VEHICLE x2 WAZE

SEVERE CONGESTION x1 HERE

TRAFFIC DISRUPTED





Data Fusion frequently highlights collisions beyond (or behind) cameras

M50 J03-J05 - Southbound · 11.1 km

 **INCIDENT** ACTIONED

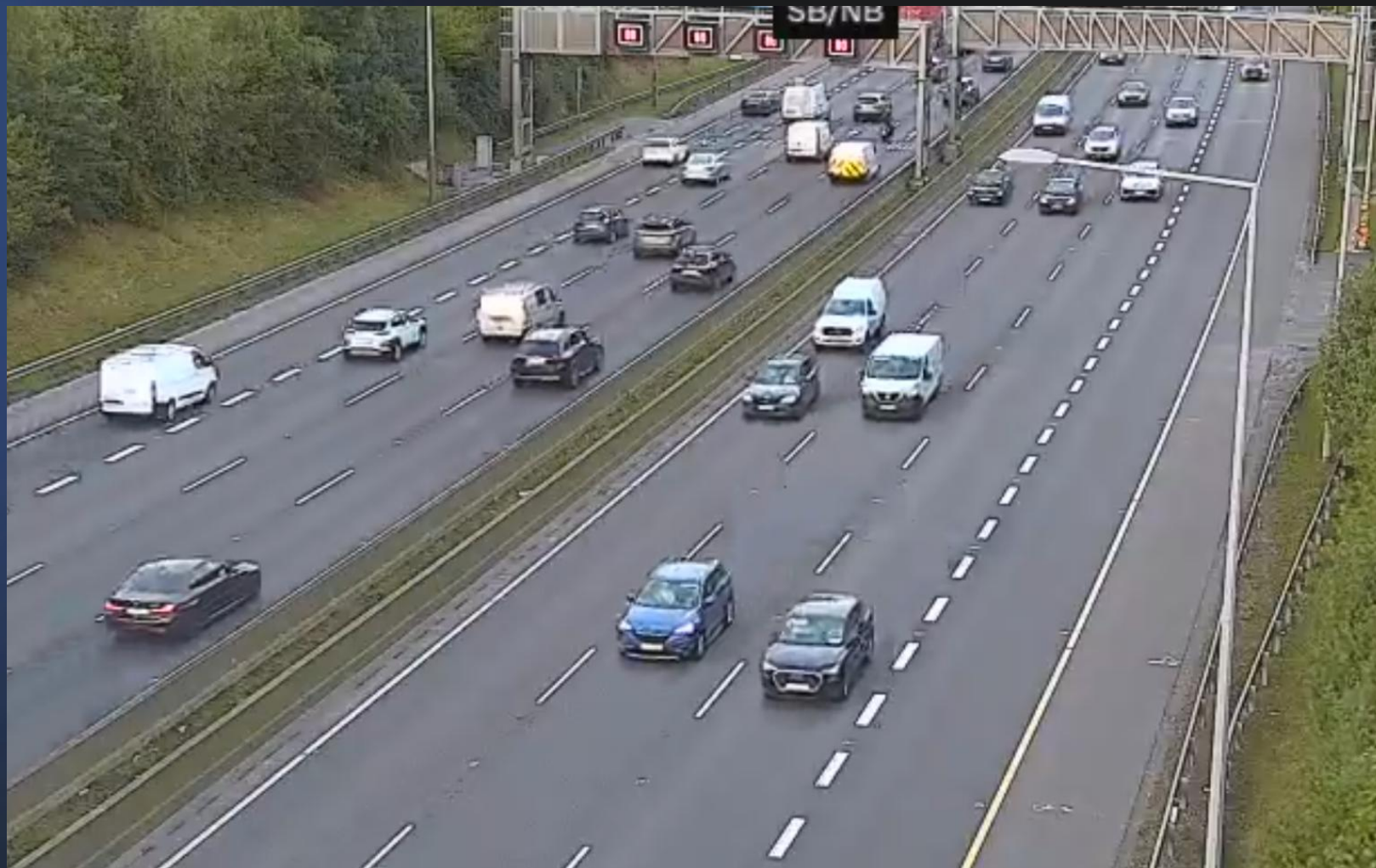
🔔 07:26 · 🔄 08:42 ⬆ 0.98

👤 *Unassigned*



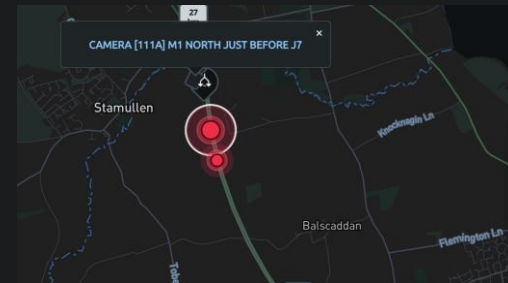
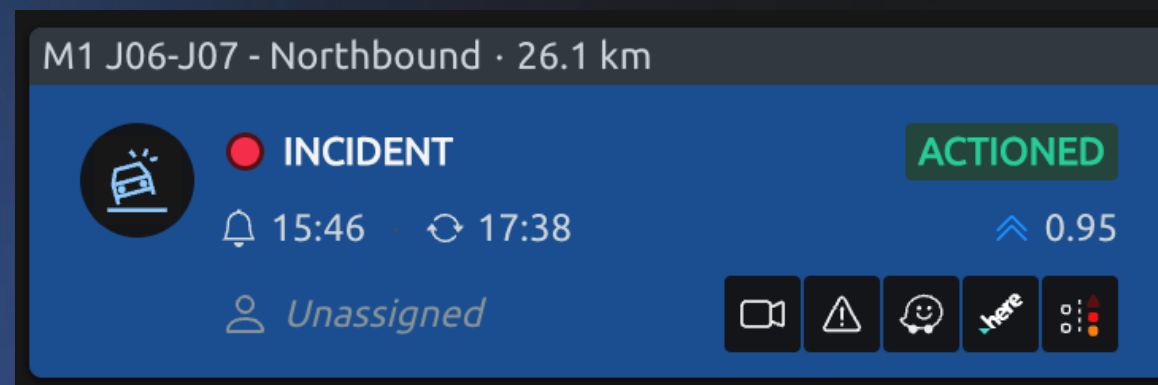


- Incident, 1 September 2026, M50 J4-J5 southbound
- Detected by Waze and atypical traffic
- Verified by CCTV

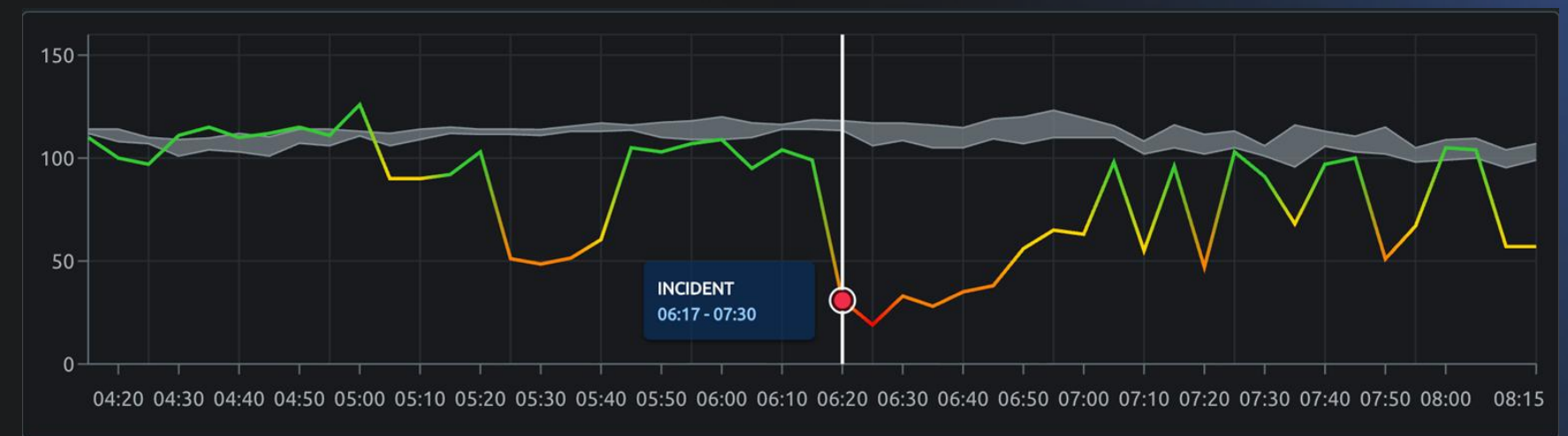
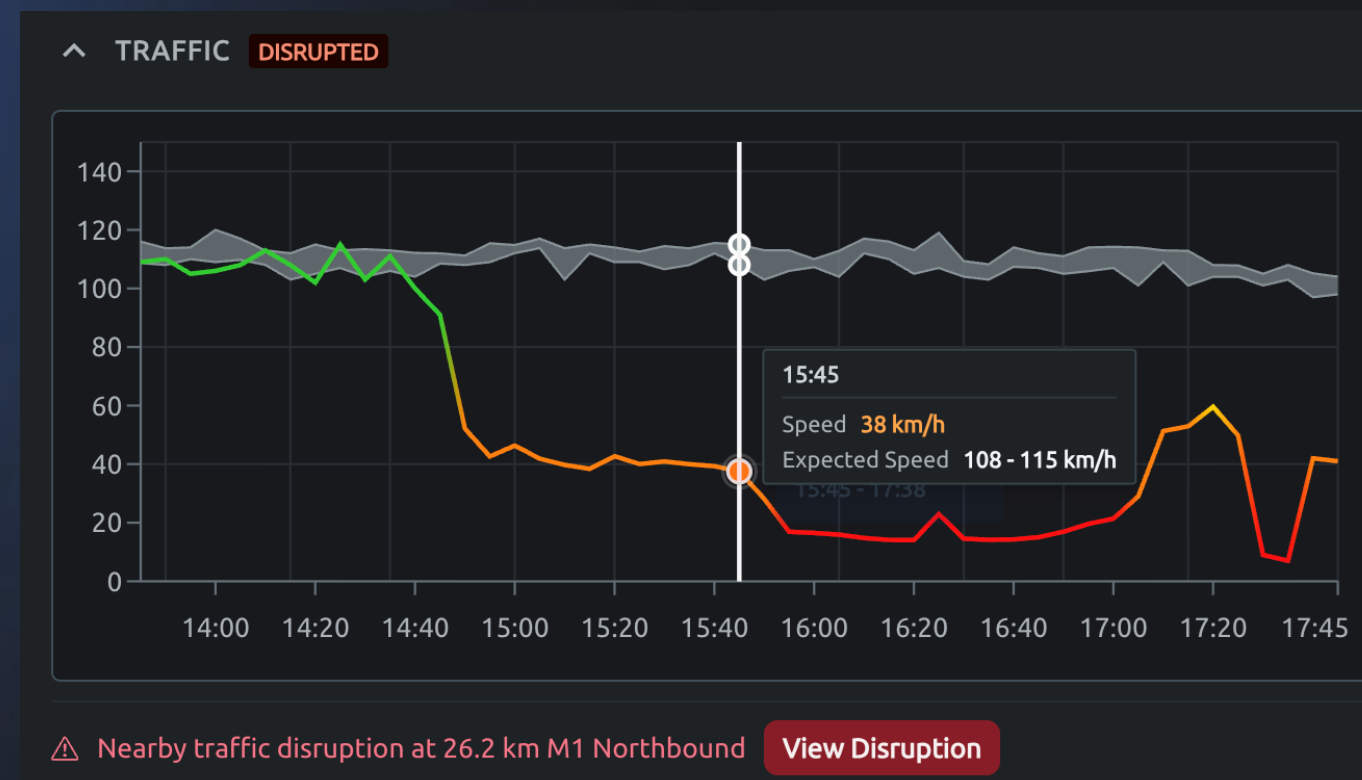
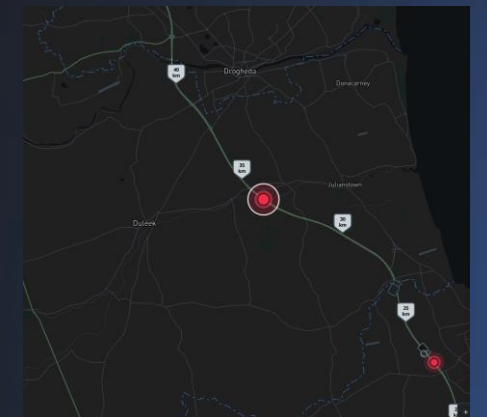
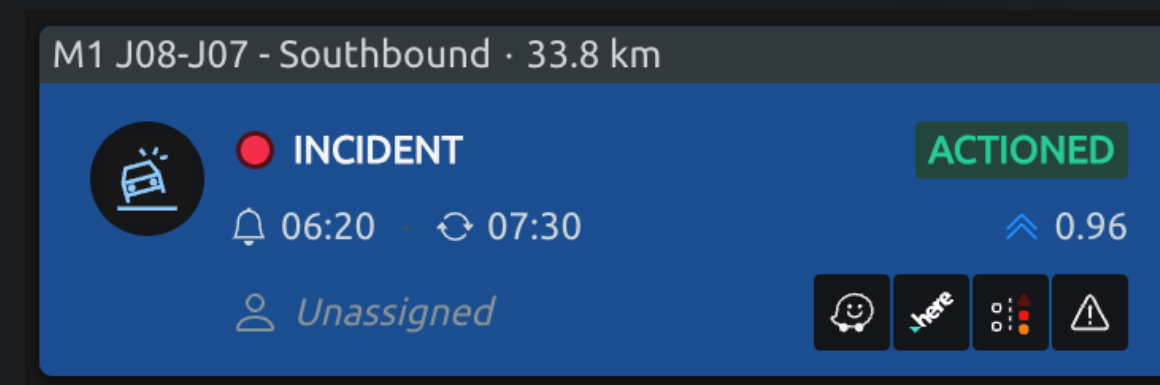


Traffic Disruption and machine learning flag relevant crowdsourced reports faster

- Incident, 10 September 2026, M1 J6-J7 northbound
- Detected by CCTV, Waze, Here and atypical traffic

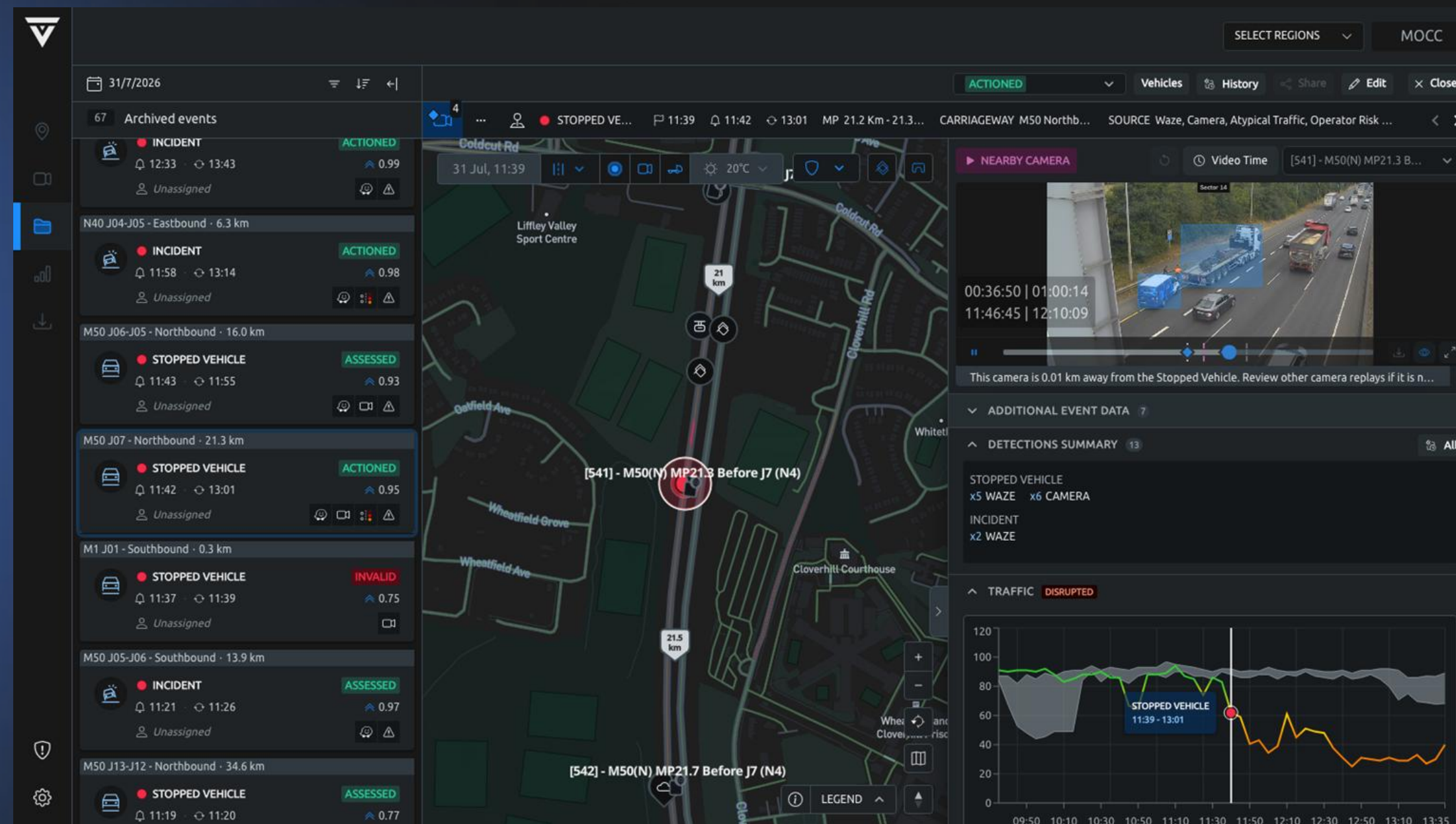


- Incident, 2 September 2026, M1 J8-J7 southbound
- Detected by Waze, Here and atypical traffic



Live-Lane Detection from Cameras

- Stopped Vehicle, 31 July 2026, M50 J9-J7 northbound
- Detected by Waze, CCTV and atypical traffic



Flagged as live lane detection



Pedestrian Detection from Cameras

LOW-LIGHT

3 August 2026

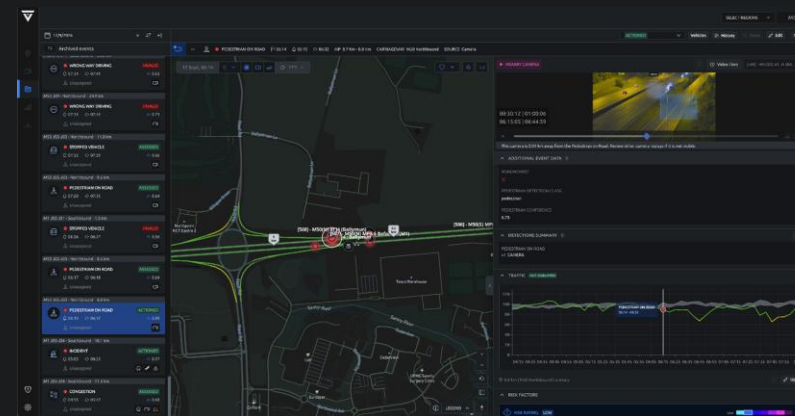
M50 J13 southbound



LOW-LIGHT

12 September 2026

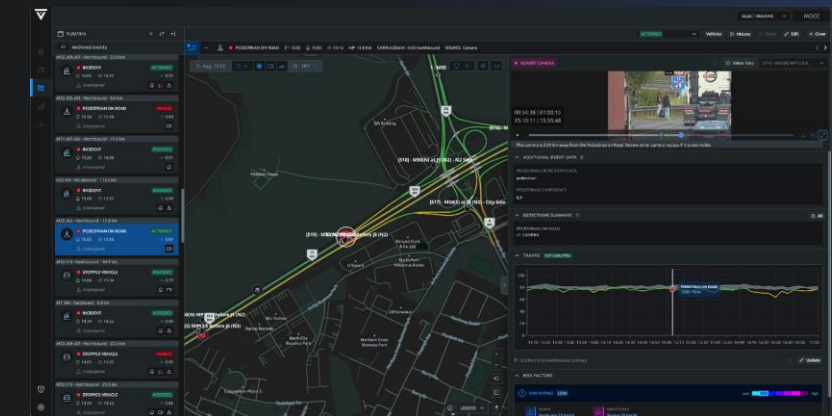
M50 J5–J3 northbound



DAYTIME

31 August 2026

M50 J5 northbound



Wrong-Way Driving Detection from Cameras

M50 WRONG-WAY DETECTION

Staging/Test environment



Thank you

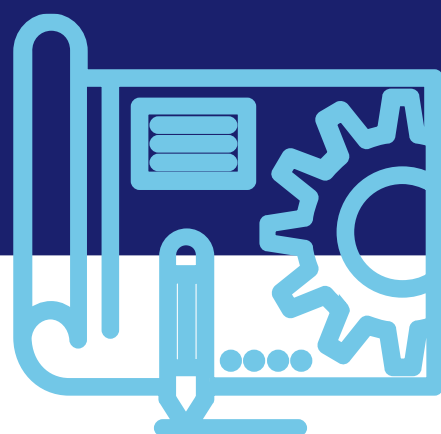
Seán Hollywood

Assistant Motorway Operations Manager, TII



Lanternn in use at TII's MOCC

Q&A



Session 5: Protection & Renewal – Asset Management and NRN Operations

Q&A

Chair: Finola O’Riordan, Senior Engineer, Cork National Road Office

- **Joe Joyce, TII**
- **Kevin Crawley, TII Network Management**
- **Corin Bridson, Breedon**
- **Stephen Flynn, Road Management Office**
- **Sean Hollywood, TII**

Comfort Break

Session 6 starting at 11:15

