ITS STRATEGY
& IMPLEMENTATION PLAN

David Laoide-Kemp – Senior Engineer (ITS)

Intelligent Transport Systems

- Defined as **'the integration of information and communication technologies with transport infrastructure, vehicles and users'**

- ITS enables TII to manage its network more efficiently, in greater safety & more sustainably

- Increasingly essential to achieving the objectives of the Roads Act Section 17.... *'to secure the provision of a safe & efficient network of national roads'*

ROADWORKS AT J1 DUNKETTLE 1 LANE BLOCKED

Intelligent Transport Systems

VMS (Efficiency and Safety)

CCTV (Safety)

School Warning Signs (Safety)

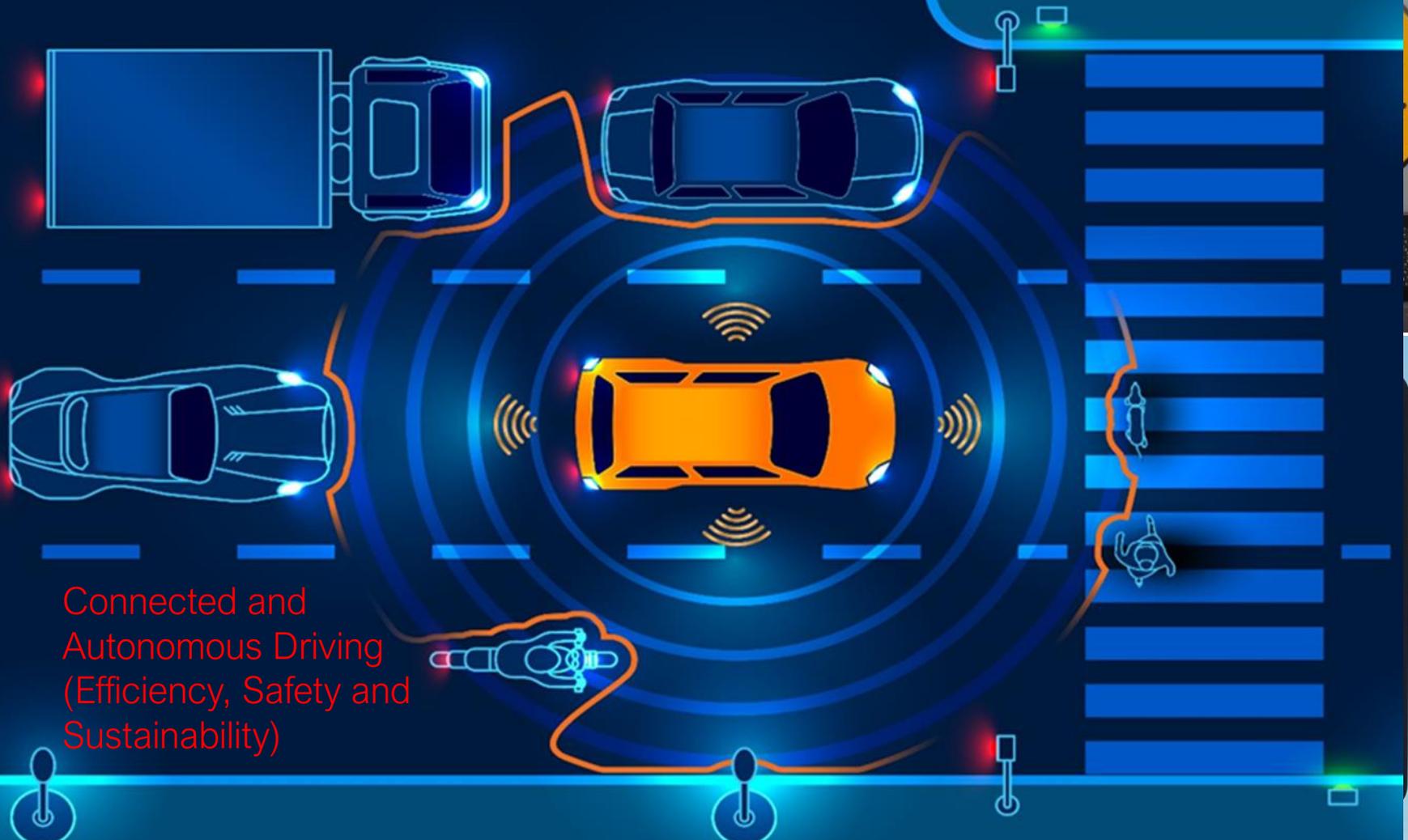TRAVEL TIME MINS J9 DROGHEDA 19 J16 DUNDALK 34

ANPR (Efficiency)

Weather Stations (Safety)

Traffic Monitoring (Efficiency)

ERT (Safety)

4

Connected and
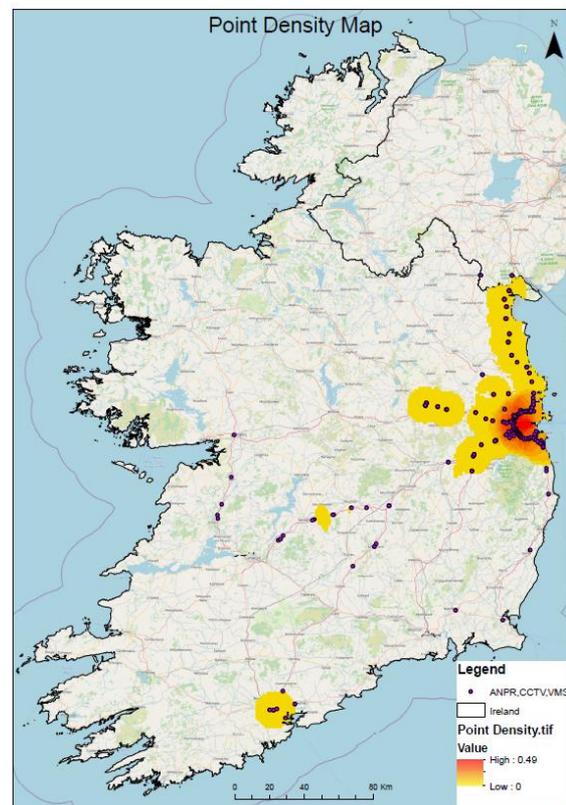Autonomous Driving
(Efficiency, Safety and
Sustainability)

Current ANPR/CCTV/VMS Density

Deployed through various projects 2005 to 2020

- Majority of ITS deployment is based around Greater Dublin Area

- Some deployment of VMS/ANPR exist beyond GDA, but these are sparse in comparison

Evolution to Mobility

2010	2016	2017	2018	2019-2024

ITS Directive 2010/40/EU

'A European strategy on Cooperative Intelligent Transport System C-ITS, a milestone towards cooperative, connected and automated mobility'

'Council Conclusions on the Digitalisation of Transport'

'Europe on the Move III'
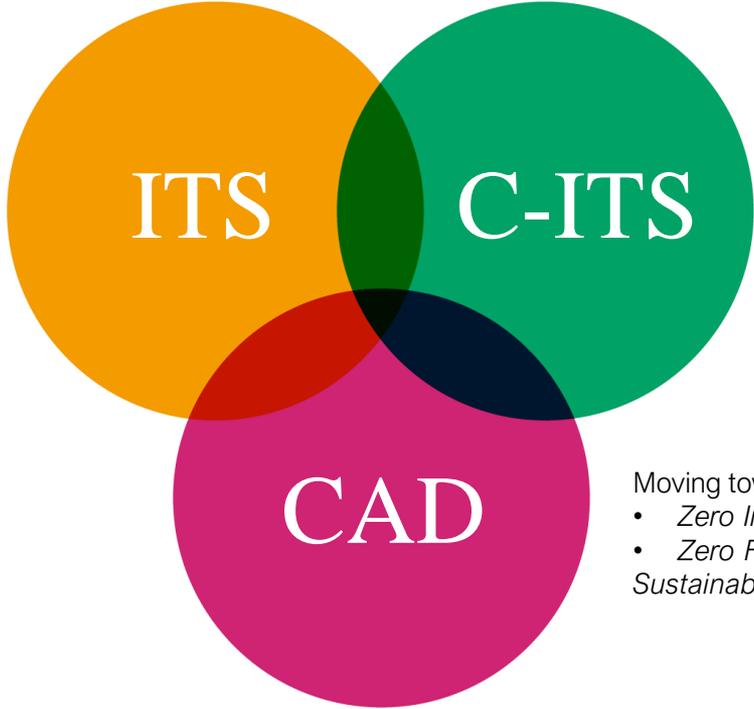
C-ITS and Beyond

Green Deal
- Climate Neutrality
- Sustainable Mobility

Need to align Irish ITS ambitions/requirements with EU

A Connected Ecosystem
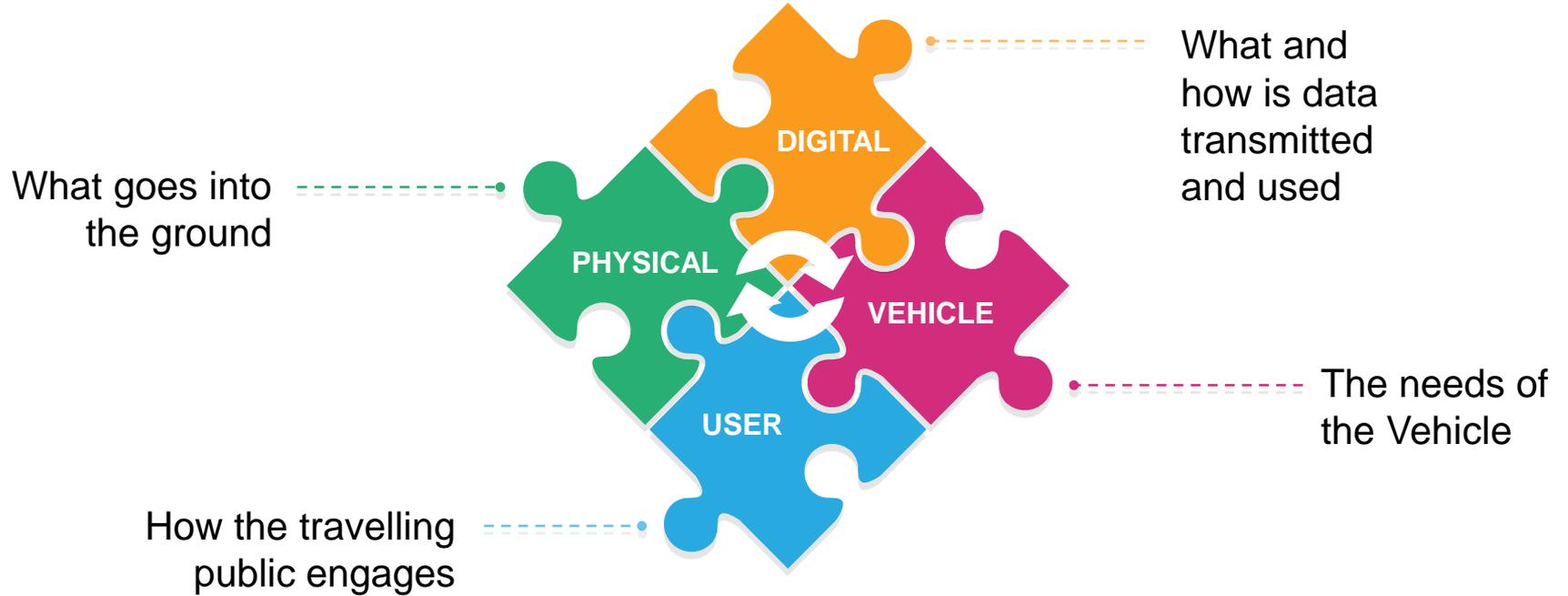

Using roadside equipment to manage the Network

ITS

C-ITS

Using Connected Technology
to deliver SERVICES
to the driving public and
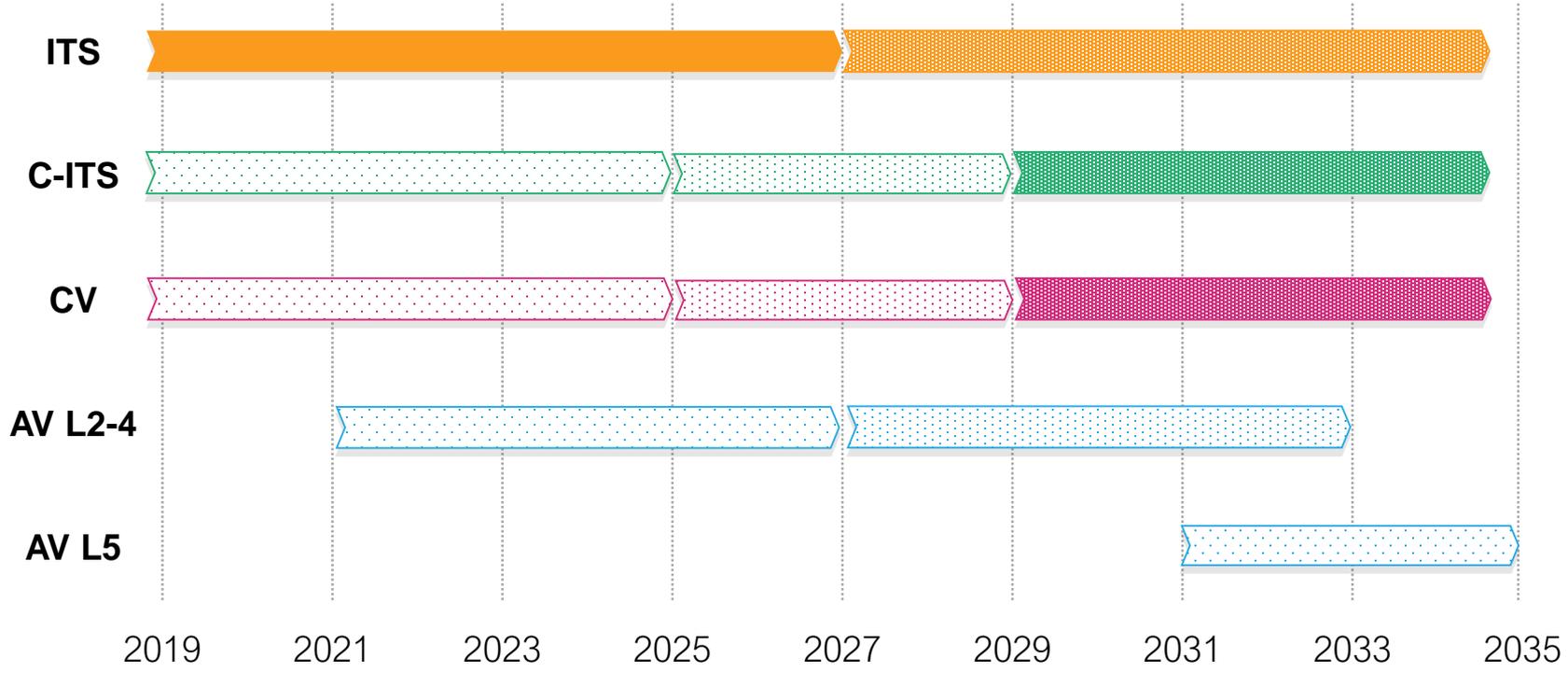Network Operator
- Infrastructure to Vehicle

CAD

Moving towards ZERO:
- *Zero Infrastructure*
- *Zero Fatalities*
Sustainable Mobility

ITS/C-ITS/CAD:

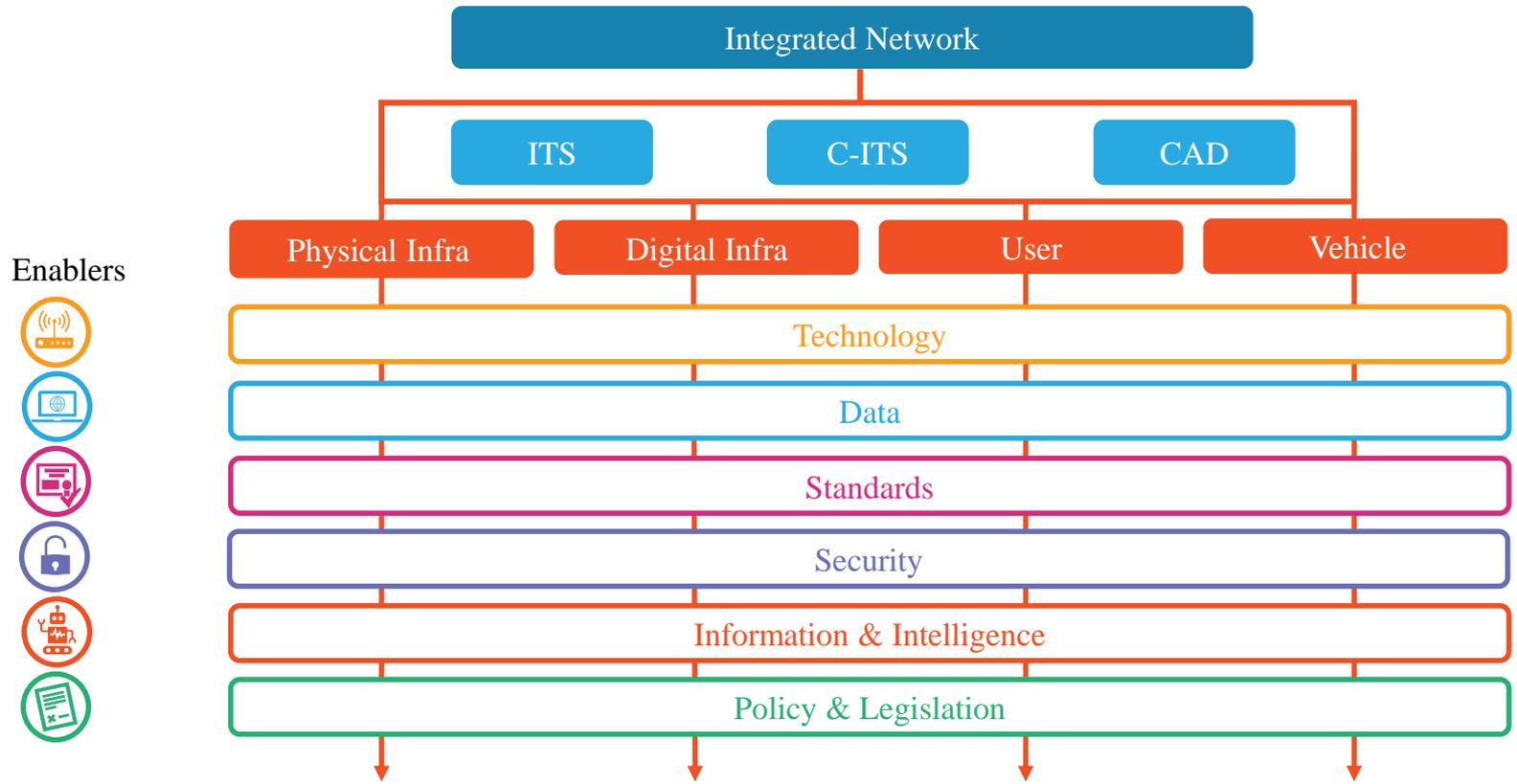*Complementary Areas of Focus:*

What and how is data transmitted and used

What goes into the ground

The needs of the Vehicle

How the travelling public engages

DIGITAL

PHYSICAL

VEHICLE

USER

Technology Timelines

Cross Cutting Enablers

ITS Levels of Service

Service Level 1	Service Level 2	Service Level 3
Inform	Inform and Monitor	Inform, Monitor and Control

Service Level 3
- Variable Speed Limits
- Lane Control
- Loops
- ANPR
- CCTV
- VMS
- Website
- Apps

Service Level 2
- Loops
- ANPR
- CCTV
- VMS
- Website
- Apps

Service Level 1
- VMS
- Website
- Apps
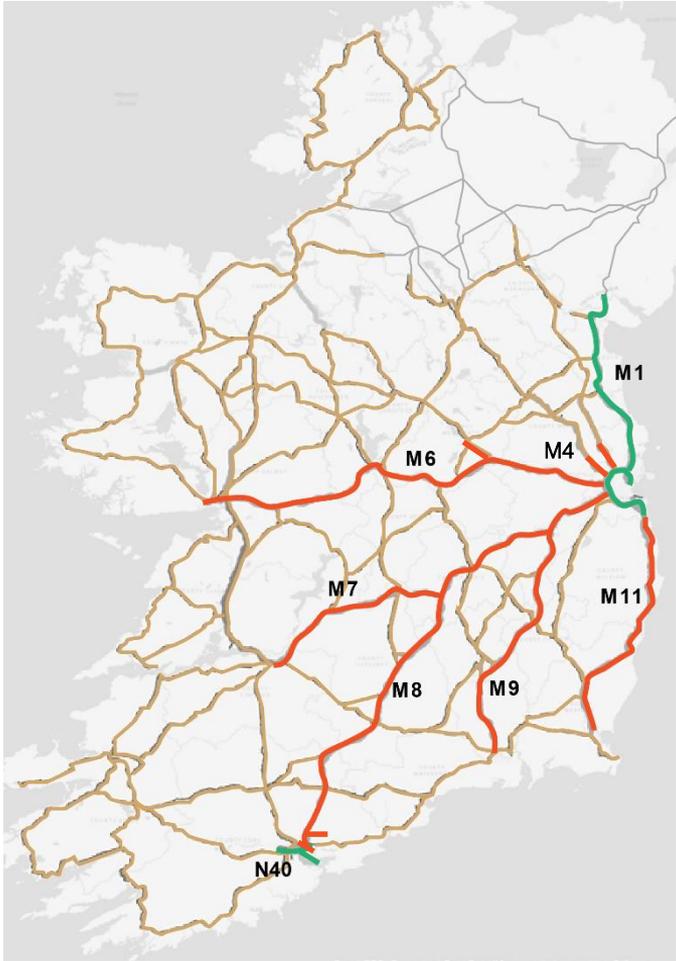
Safety and Efficiency
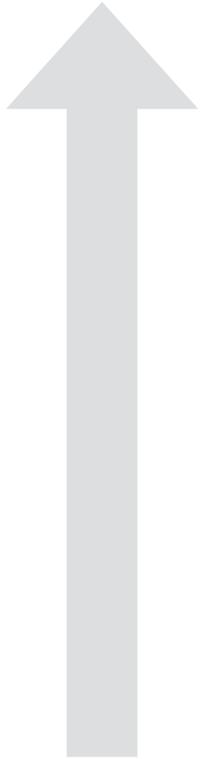
Base Level: Weather Stations / Counters / School Warning Signs / etc.

ITS – Current Deployment – 2005 to 2020

- Base Level - Nationwide

- Level 1 - VMS – Strategic locations - MIU

- Level 2 - VMS and ANPR/ CCTV/ Traffic Loops – M1 and M50

Base Level

Level 1
Information - ITS

Level 2
Information and
Monitoring - ITS

ITS/C-ITS/CAD – An Overall Approach

A layered approach:

1. Co-ordinated approach - co-location of ITS and C-ITS infrastructure

2. Integrate emerging and proven technologies to ensure transition from ITS to C-ITS/CAD is managed

3. Significant Physical and Digital Investment required

Technology enabled:

1. Real time monitoring.

2. Quick responses to incidents. Optimise traffic flows/speeds where appropriate

3. Reduce event/ weather incidents with targeted advice or controls

4. Long term roadmap trending towards reduced roadside infrastructure as C-ITS/CAD is becomes more prevalent

Base Level

Level 1
Information – ITS Only

Level 2
Information and Monitoring - ITS and/or C-ITS

Level 3
Information, Monitoring and Control – ITS and C-ITS
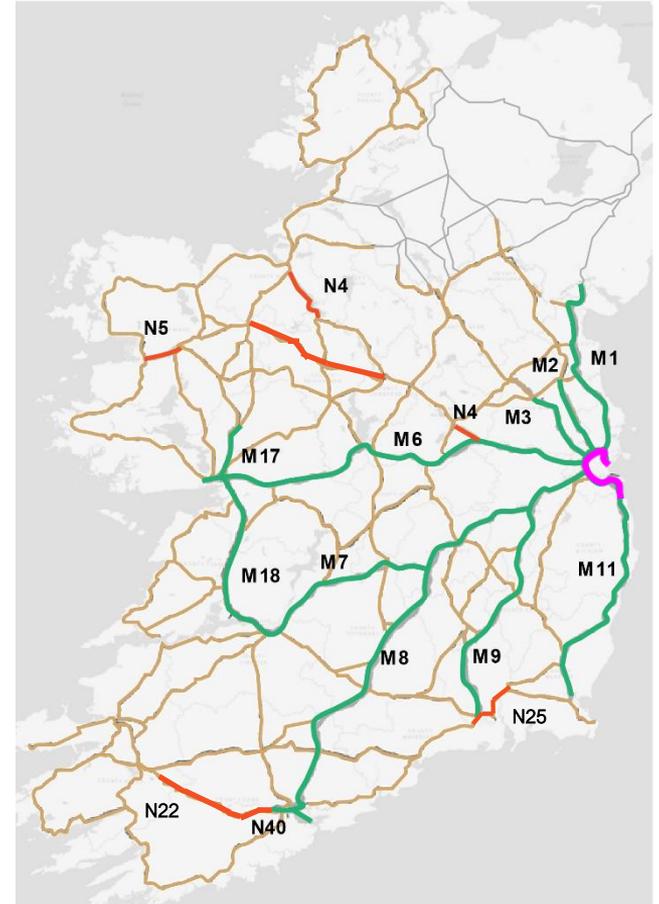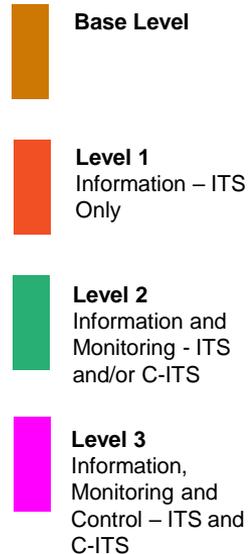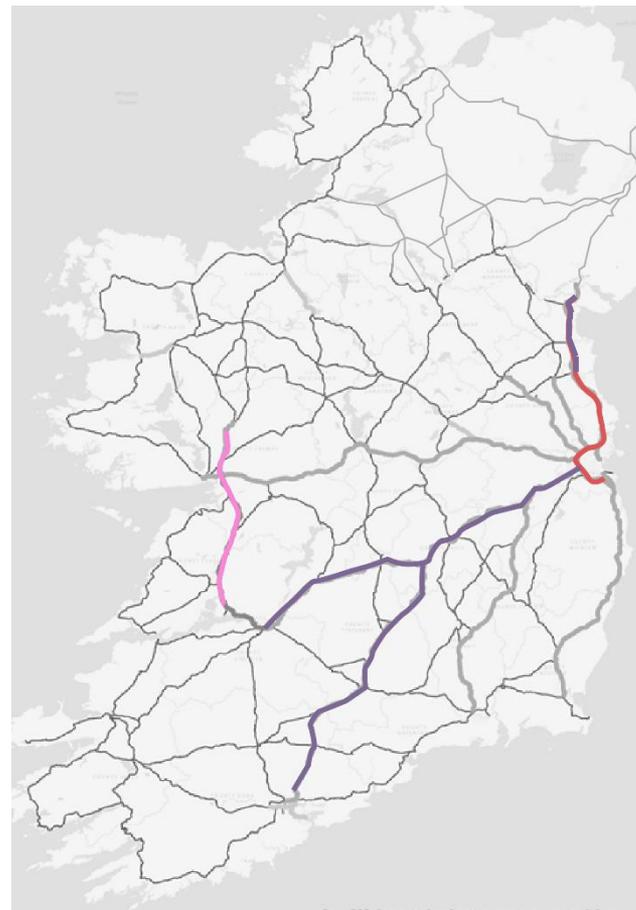
ITS/C-ITS/CAD – An Overall Approach

Pilot Projects:

- CAD Pilot (Jaguar Land Rover) – M18 – DoT approval required

- C-ITS Pilot (2019 to 2023) – M50, M1, M7 and M8 (NB JLR stakeholder)

Technology enabled:

- ITS 5G (favoured by EU)

- CV2X (favoured by US/ Asia)

CV2X 5G Pilot

ITS G5 Pilot

CAV Pilot

Implementation Plan – Programme – 2021-2025

Actions						
VMS/CCTV/ANPR/Weather Detection Delivery Plans		2021	2022	2023	2024	2025
1.00	**Works Document**					
1.10	Phase A 25 Strategic + 1 Tactical VMS, 30 ANPR, 12 CCTV	███				
1.20	Phase B 27 Strategic + 5 Tactical VMS, 42 ANPR 14 CCTV		███			
1.20	Phase C 20 Strategic + 1 Tactical, VMS, 34 ANPR, 10 CCTV			███		
1.30	Phase D 18 Strategic + 0 Tactical VMS, 28 ANR 8 CCTV				███	
1.40	Phase E 9 Strategic + 2 Tactical VMS, 22 ANPR, 11 CCTV					███
	Digital Implementation					
1.10	Package 1 Data Insight and Analysis Strategy	███				
1.20	Package 2 Security and Engagement Strategy		███			

Conclusion

- Existing Deployment (2005-2020) – GDA focused

- MIU Deployment (2020-2025)

    - Complete beyond GDA

    - Investment planned over 5 years

- C-ITS preparation (2019-2024)

    - €10m C-ITS Pilot – secured funding (50% EU)

    - C-ITS Deployment (2023-25) (Fibre dependent)

- Sets up CAD live data preparation (2025+)