

Pavement Asset Management

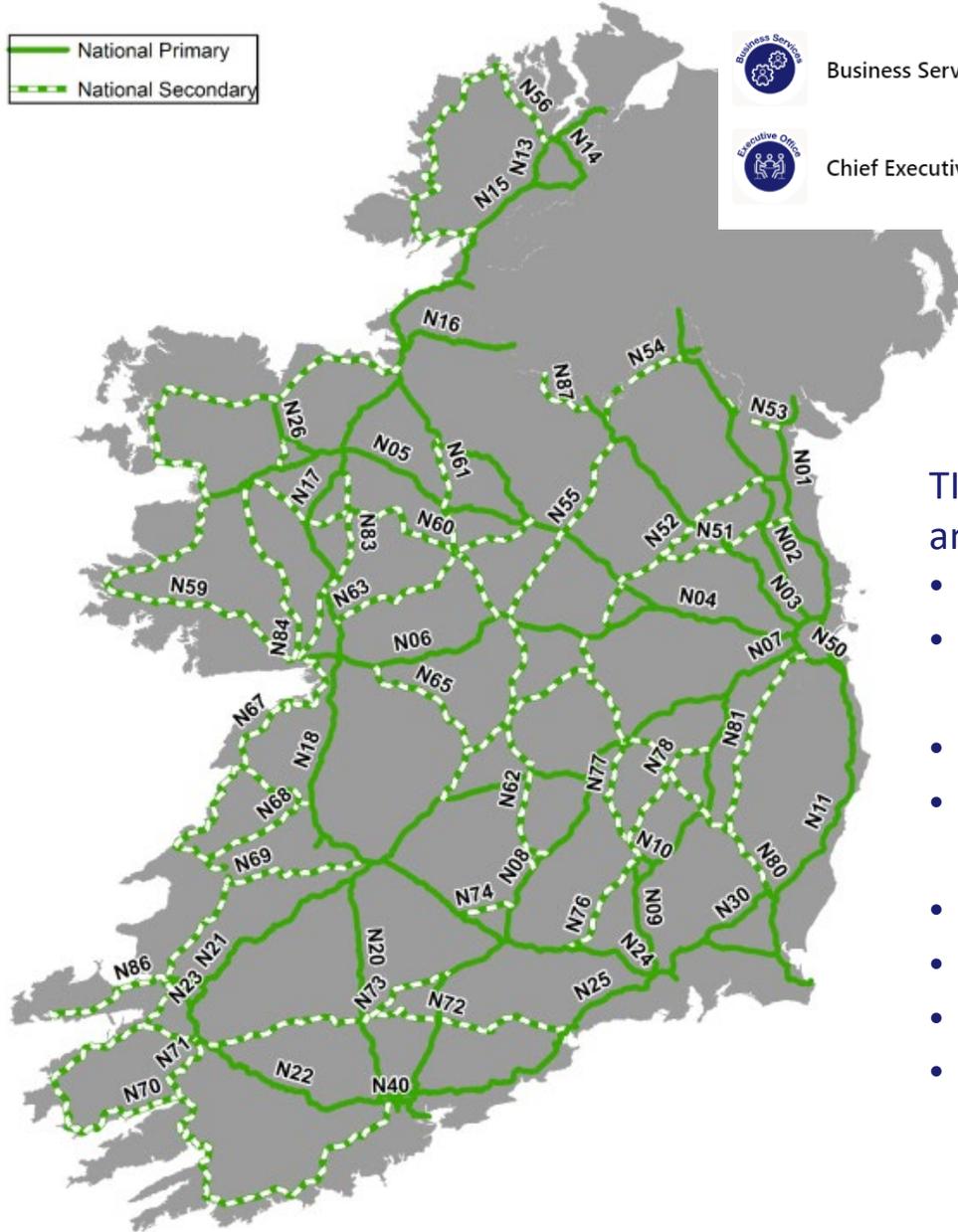
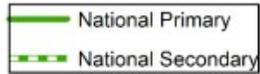
TII Standards Roadshow – 1st & 2nd May 2024

1 - Introduction

Presentation Outline:

1. Introduction to Network Management
2. Pavement Asset Management Guide;
3. Upcoming Revisions to AM-PAV docs;
 1. dTIMS EMS;
 2. IAPDM;
 3. FWD Guidelines;
 4. MapRoad;
4. Greenway / Active Travel Renewals;

1.1 - TII Network Management



Business Services



Chief Executive



Capital Programme Management



Network Management



Commercial Operations



Professional Services



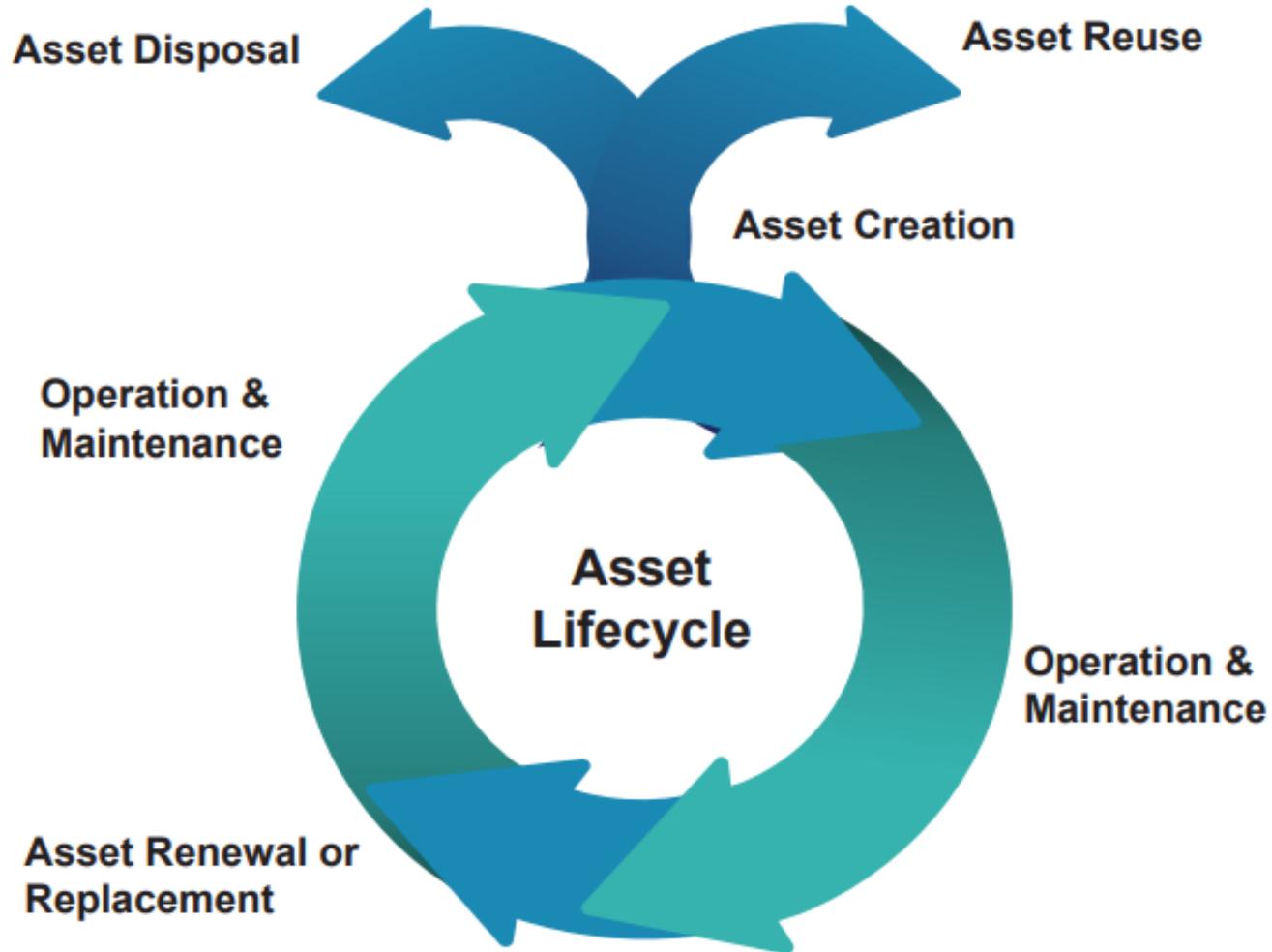
Corporate Services

NRN single carriageway primarily managed by LAs, motorways and dual carriageways predominantly managed under MMarC or PPP Concession Companies

TII Network Management Division responsible for management, operation and maintenance including:

- Overall plans for network management;
- Operation and maintenance of the dual carriageway network, and the Dublin and Jack Lynch tunnels;
- Operational oversight of Public Private Partnerships;
- Traffic management (including a Traffic Control Centre, ITS policy and application, and speed limits);
- Maintenance (including winter and network operations);
- Asset management (including pavements and bridges);
- Approval of new structure designs;
- Development and maintenance of physical and performance data.

1.2 - Asset Management



Asset Management Definition:

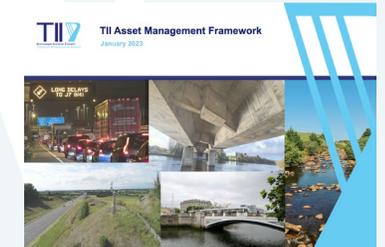
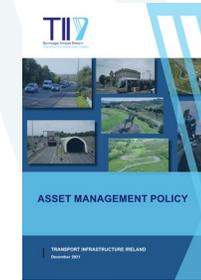
ISO 55000: *the co-ordinated activity of an organisation to realise value from assets. Realising value will normally include a balancing of costs, risks, opportunities and performance benefits.*

Asset Management Vs Infrastructure Asset Management

1.3 – Asset Management in TII

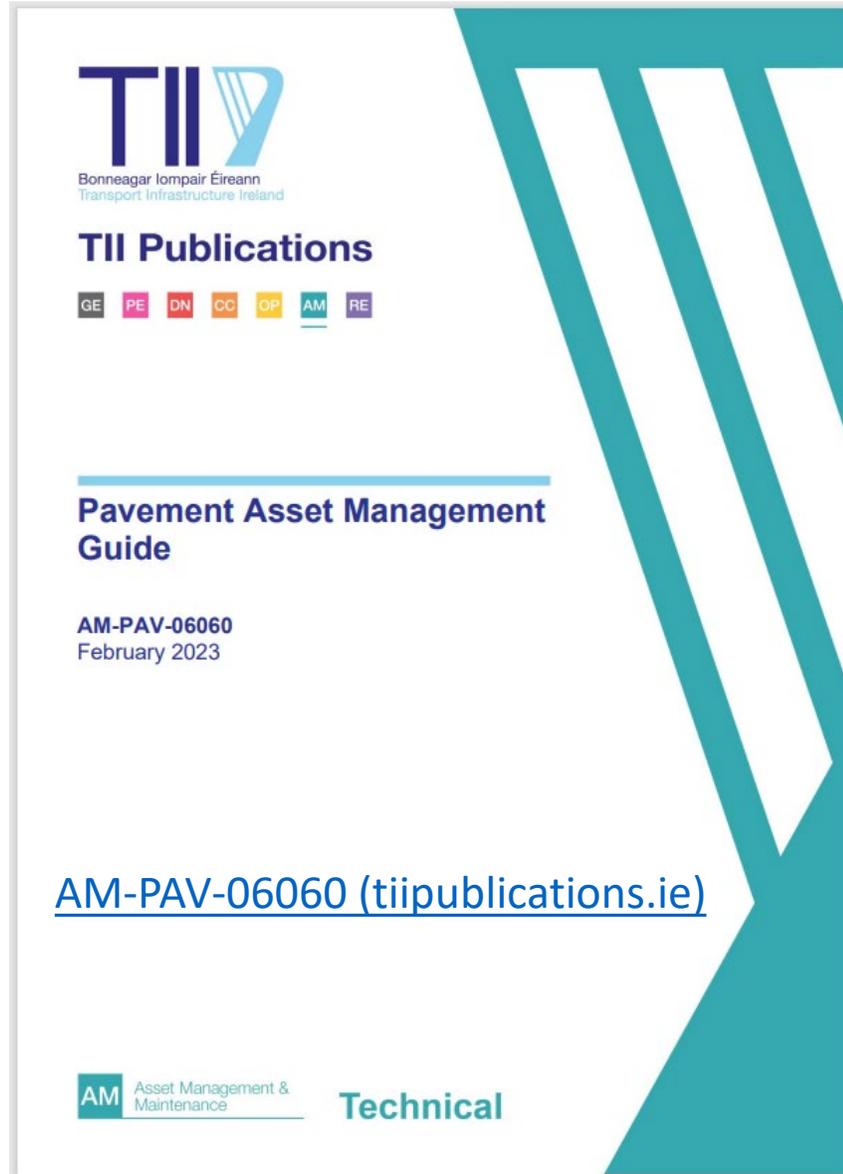
TII Strategic Goal – Existing Infrastructure: Operate, maintain and extend the life of national roads and light railway infrastructure to ensure the safety and efficiency of our transport networks, ensure appropriate management of environmental resources and contribute to the transition to a low-carbon and climate resilient society.

TII Asset Management Policy – “Assets will be managed in a sustainable manner through the development, implementation, and maintenance of an asset management approach that is risk-based and **data-driven**, enabling us to make informed decisions throughout the life of our assets”.



2 - Pavement Asset Management Guide

2.1 – Pavement Asset Management Guide



2.2 – Pavement Asset Management Guide Contents

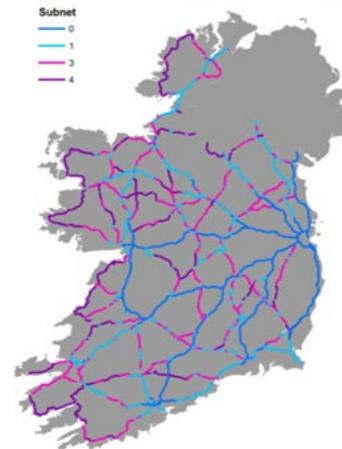
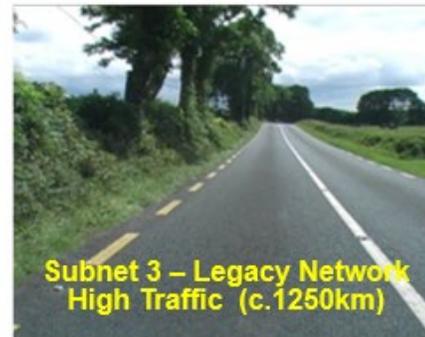
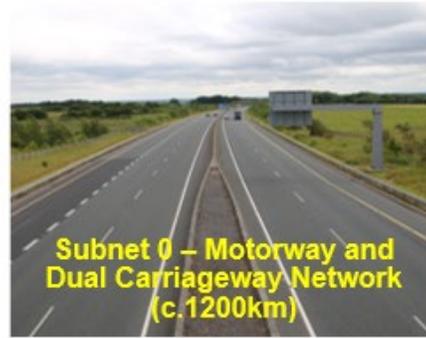
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2.3.1 – Pavement Asset Management

TII Pavement Asset Management is responsible for:

- Strategic management of our network pavement assets through our Pavement asset management system (PAMS)
- Monitoring the structural and surface condition of pavements through annual pavement condition surveys
- Monitoring and managing the skidding and surface condition of our network pavements
- Updating and developing standards and construction specifications for network pavement materials so as to ensure that they comply with evolving Euronorm standards



2.3.2 – Pavement Asset Management (Cont.)



Pavement Condition & Skid Resistance

- Longitudinal profile*
- International Roughness Index (IRI)*
- Longitudinal profile variance (3m and 10m)*
- Transverse profile*
- Rut Depth*
- Crossfall*
- Surface macrotexture expressed as Mean Profile Depth (MPD)*
- Characteristic Skid Coefficient (CSC)*



Structural Condition & Surface Defects

- Laser Crack Measuring System (LCMS)*
- Digital Video Survey*
- Surface Defects



Pavement Structure & Structural Capacity

- Pavment Deflection by Falling Weight Deflectometer (FWD)
- Ground Penetration Radar (GPR)
- Coring
- Foundation Capacity



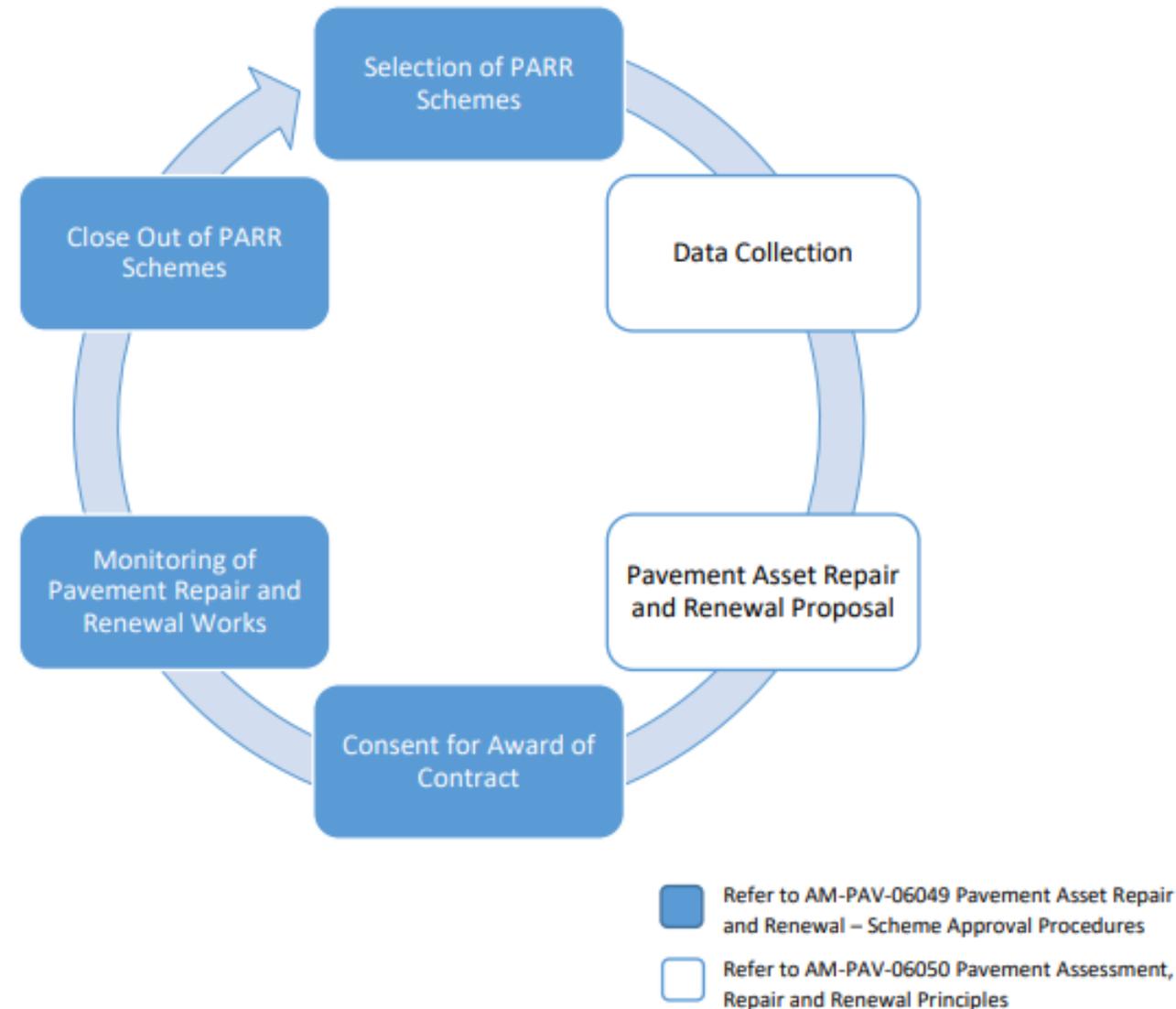
Other Road Information

- Gradient*
- Radius of Curvature*
- Rise and Fall and Bendiness Index
- Edge Detection and Shape Index

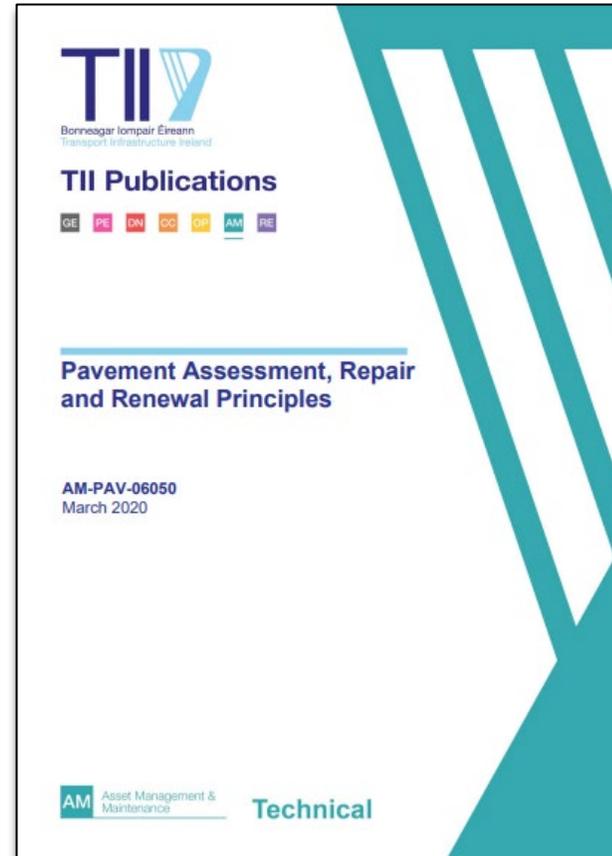
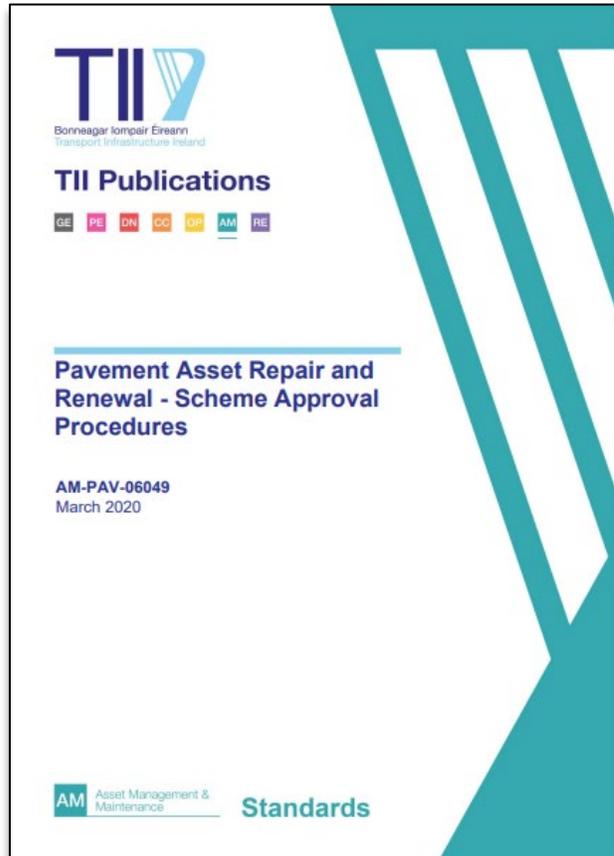
2.4 – Pavement Asset Repair and Renewal

The key steps taken by TII NM in identification of pavement protection and renewal schemes on the national road network can be summarised as follows:

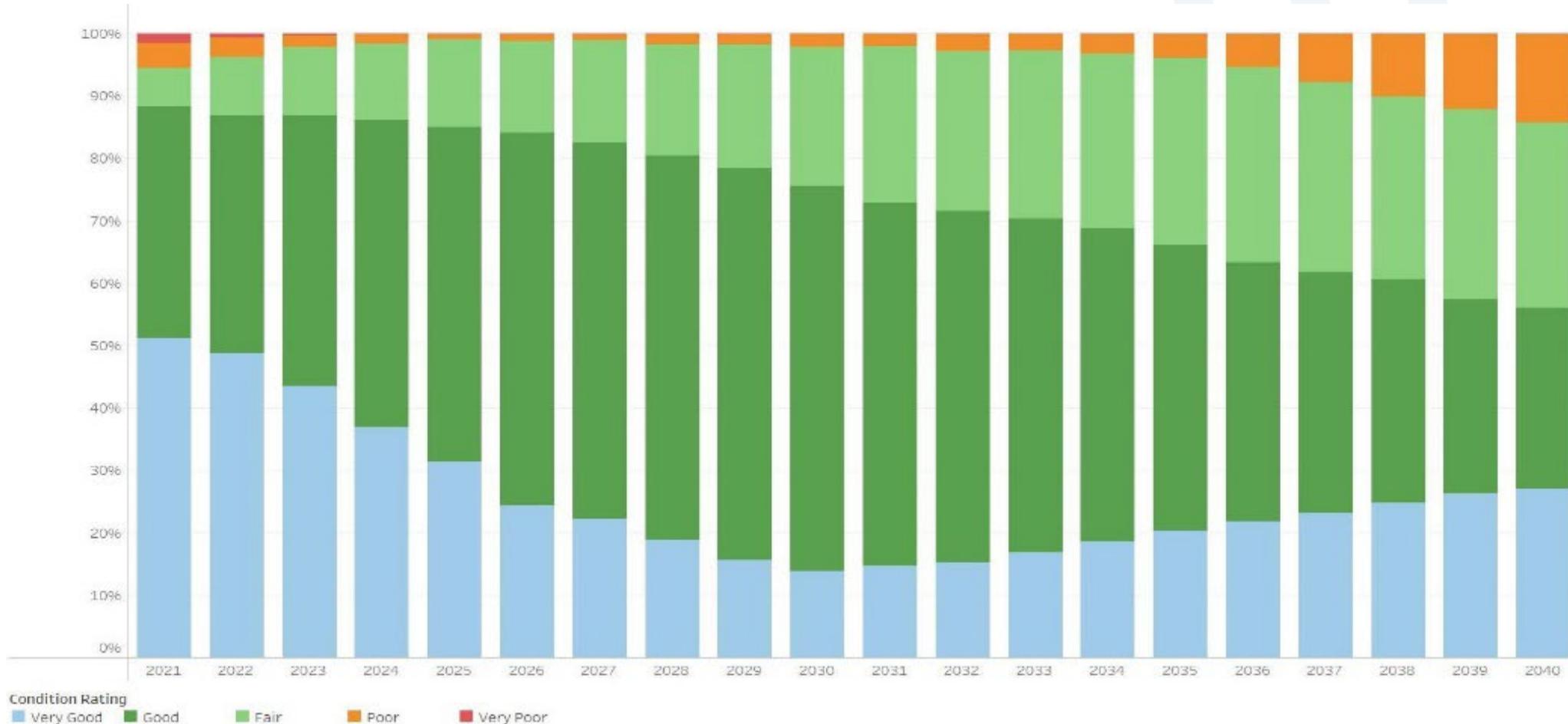
- Identify the overall need for pavement intervention;
- Determine the level of funding needed;
- Select feasible funding options and strategies;
- Determine the impact of different options on condition and level of service;
- Develop the preferred funding option and strategy;
- Identify road lengths for maintenance and renewals under available funding;
- Define relative priority of road section lengths in the maintenance programme within available budgets;
- Identify suitable treatments;



3 – Upcoming Revision to Pavement Asset Management Standards

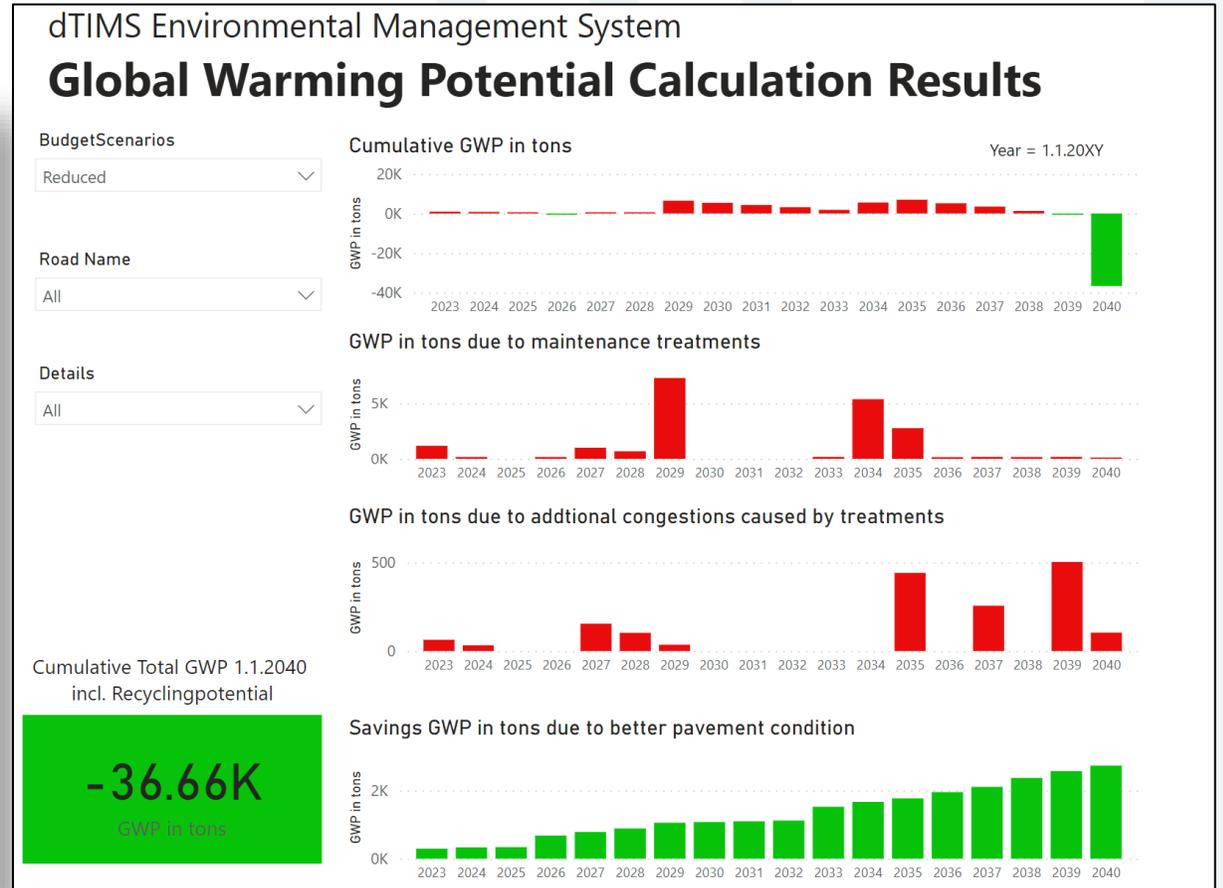
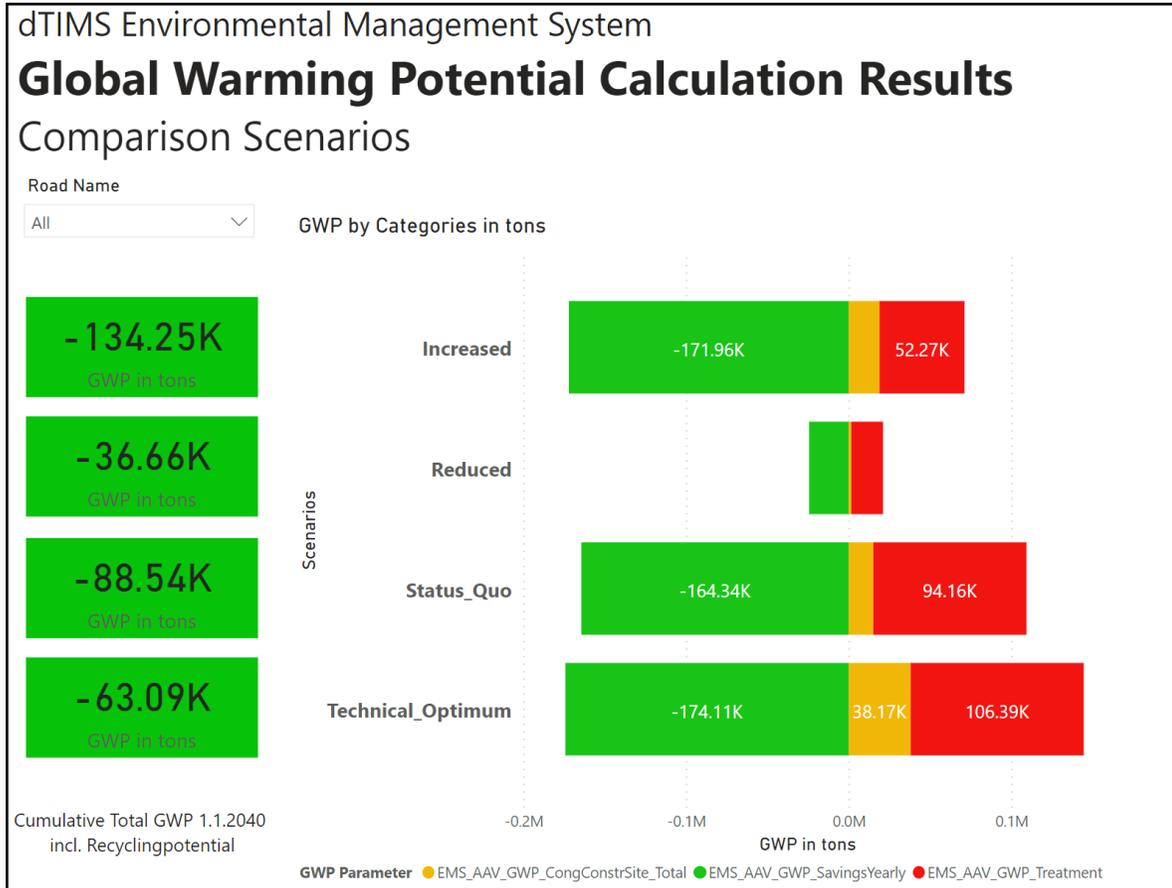


3.1 - Integrating the dTIMS BA Environmental Management System in the TII PAMS



Network Condition (VG to VP): €100 million Annual Budget

3.2 - Integrating the dTIMS BA Environmental Management System in the TII PAMS



3.3 - Introduction of DN-PAV-03021 (August 2022)

- Introduction of the IAPDM for pavement design.
 - Full presentation this afternoon.
- Performance based approach to pavement material characterisation and structure design
- AM-PAV-06050 will be updated to include guidance on how to report findings of IAPDM analysis, to include extended strip map reporting and also to align with defect descriptions.



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Transport Infrastructure Ireland

TII Publications



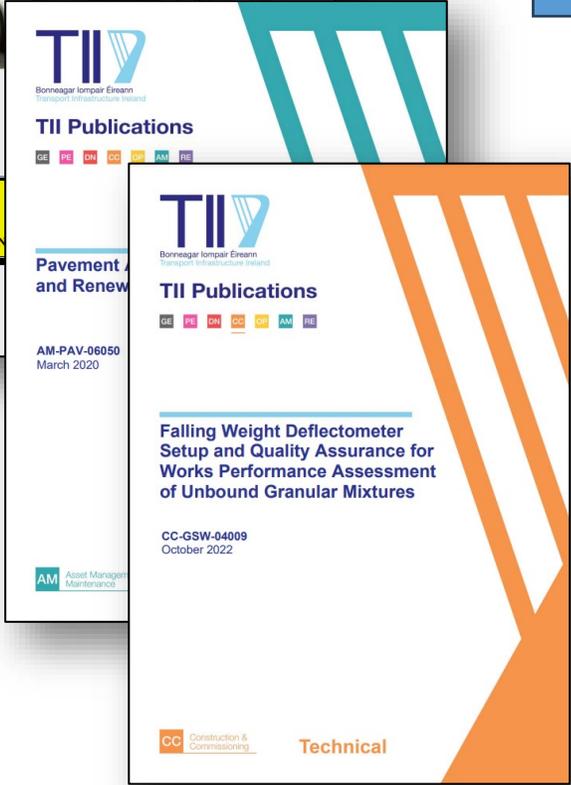
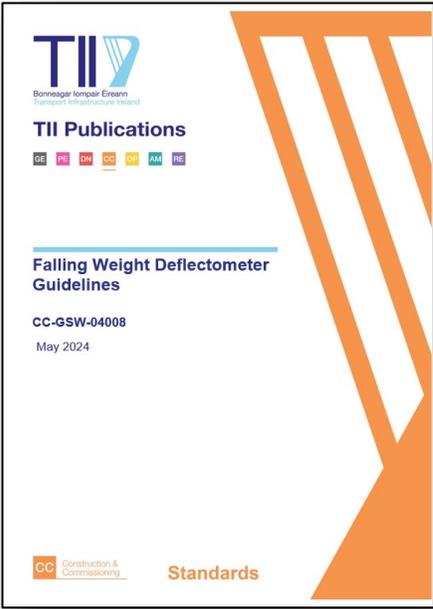
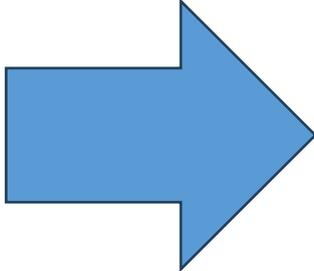
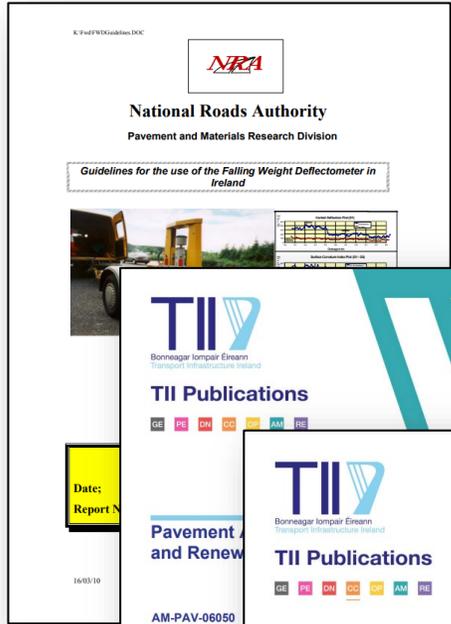
Analytic Pavement & Foundation Design

DN-PAV-03021
August 2022



Standards

3.4 - Updates to FWD Guidelines (CC-GSW-04008)



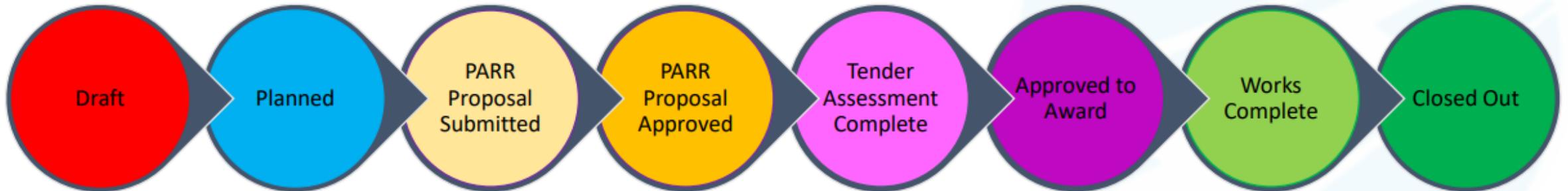
3.5 - MapRoad



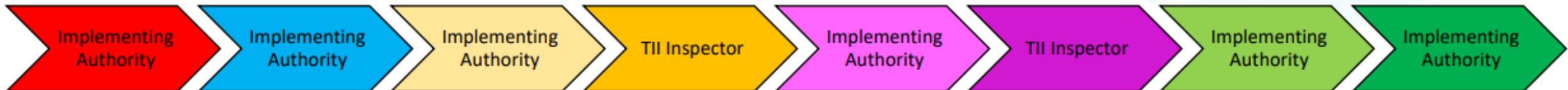
AM-PAV-06049 EQUIVALENT:



MAPROAD PHASE:



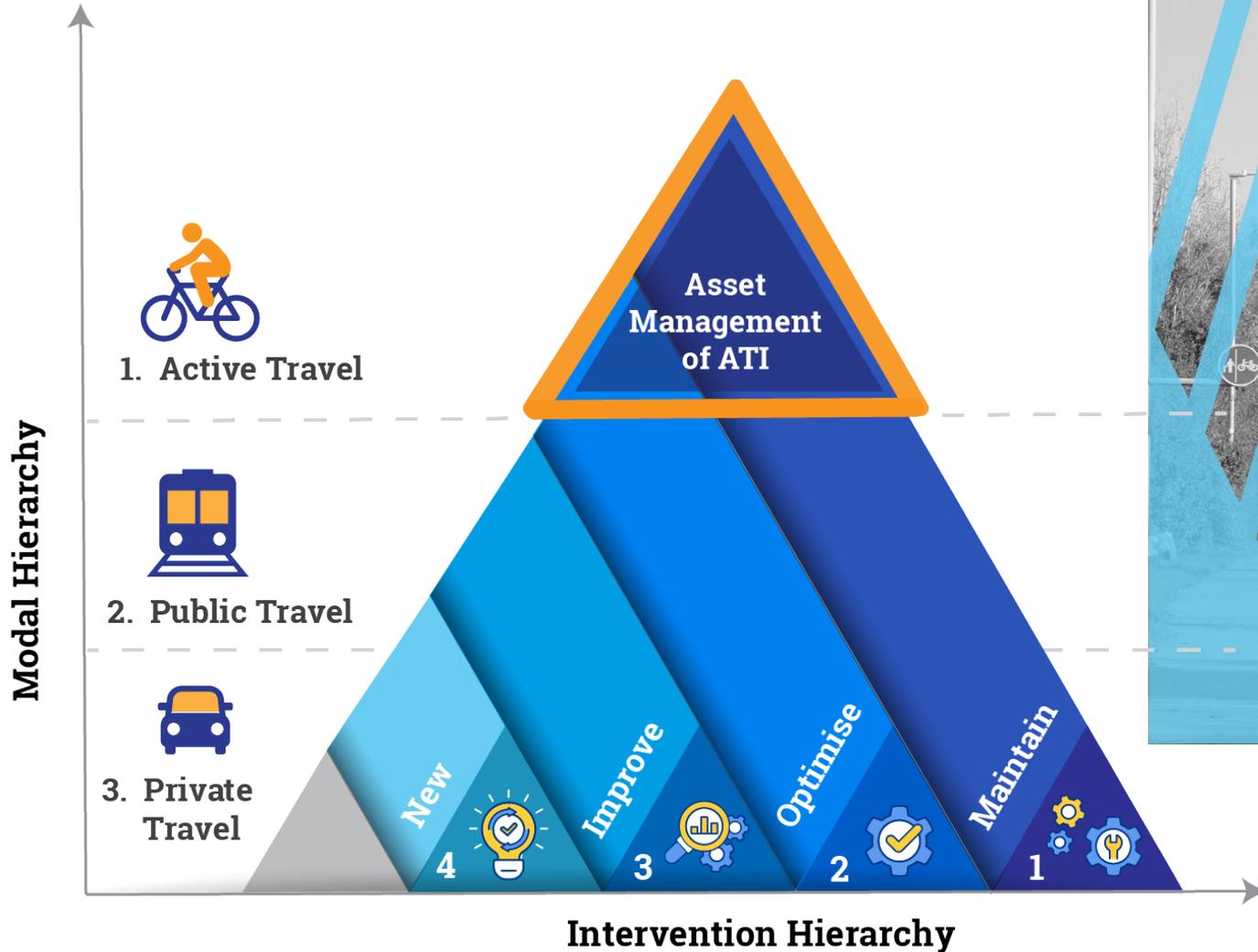
MAPROAD ACTION BY:



Circulars: TII 07/2022 and TII 02/2024.

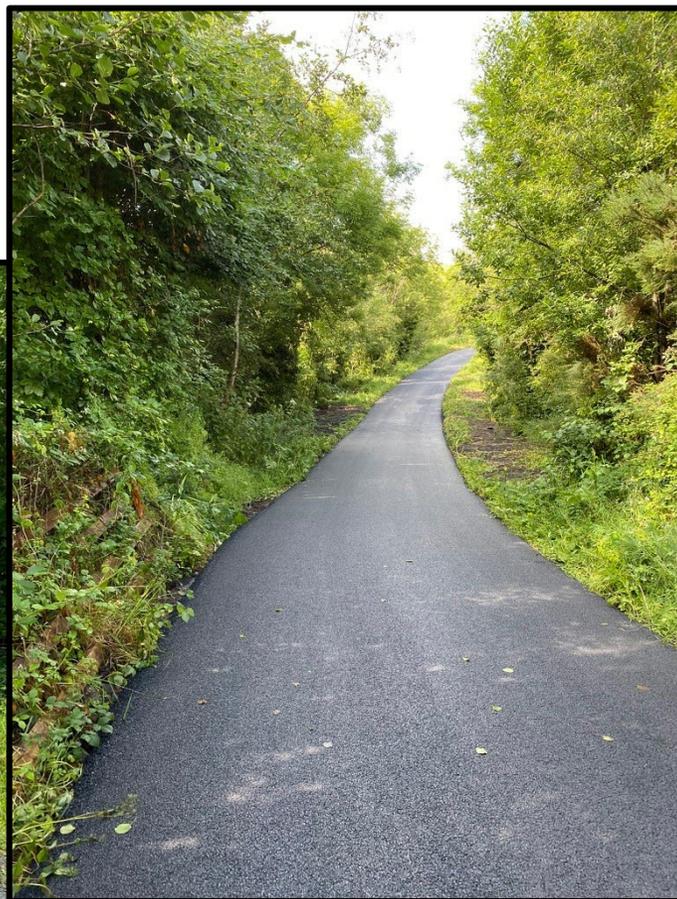
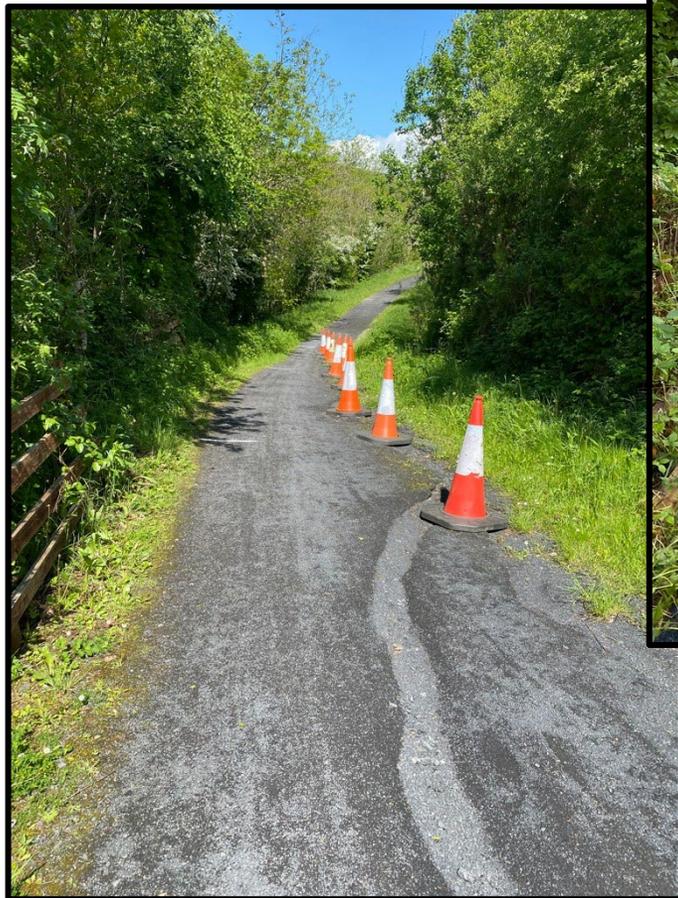
4 – Greenway / Active Travel Repair and Renewal Funding

4.1 – Greenway / ATI Renewal Funding



4.2 – Greenway / ATI Renewal Funding (Cont.)

Future Standard: Active
Travel Asset Repair and
Renewal (ATARR)



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