An Roinn Iompair
Department of Transport

Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

RSTG Conference 2023 9th May - Day 1

Welcome

Conference Will Begin at 9.30am

- Welcome from Roscommon County Council.
- Ministerial Opening Address

Session 1- Road Sector Overview, Network Condition & Safety Analysis

Chair John McLaughlin

1st Transport Priorities and the Regional and Local Road Investment Programme

2nd PMS\Network Condition

3rd Regional Road Network Safety Analysis

Join the Q&A session at Slido.com and enter 1685372

Or via the QR Code

An Roinn Iompair
Department of Transport

Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

ROADS Services Training Group

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION - 2023

Day 1 Session 1 Presentation 2-DoT

David O'Grady

Hodson Bay Hotel Athlone, May 2023

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Department of Transport

Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION – 2023

Transport Priorities and the Regional & Local Road Investment Programme

David O'Grady
Principal Adviser
Department of Transport

An Roinn Iompair
Department of Transport

Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION – 2023

Transport Priorities and the Regional & Local Road Investment Programme

1. Network and Funding
2. Outputs for funding
3. Policy
4. Other Ongoing Items

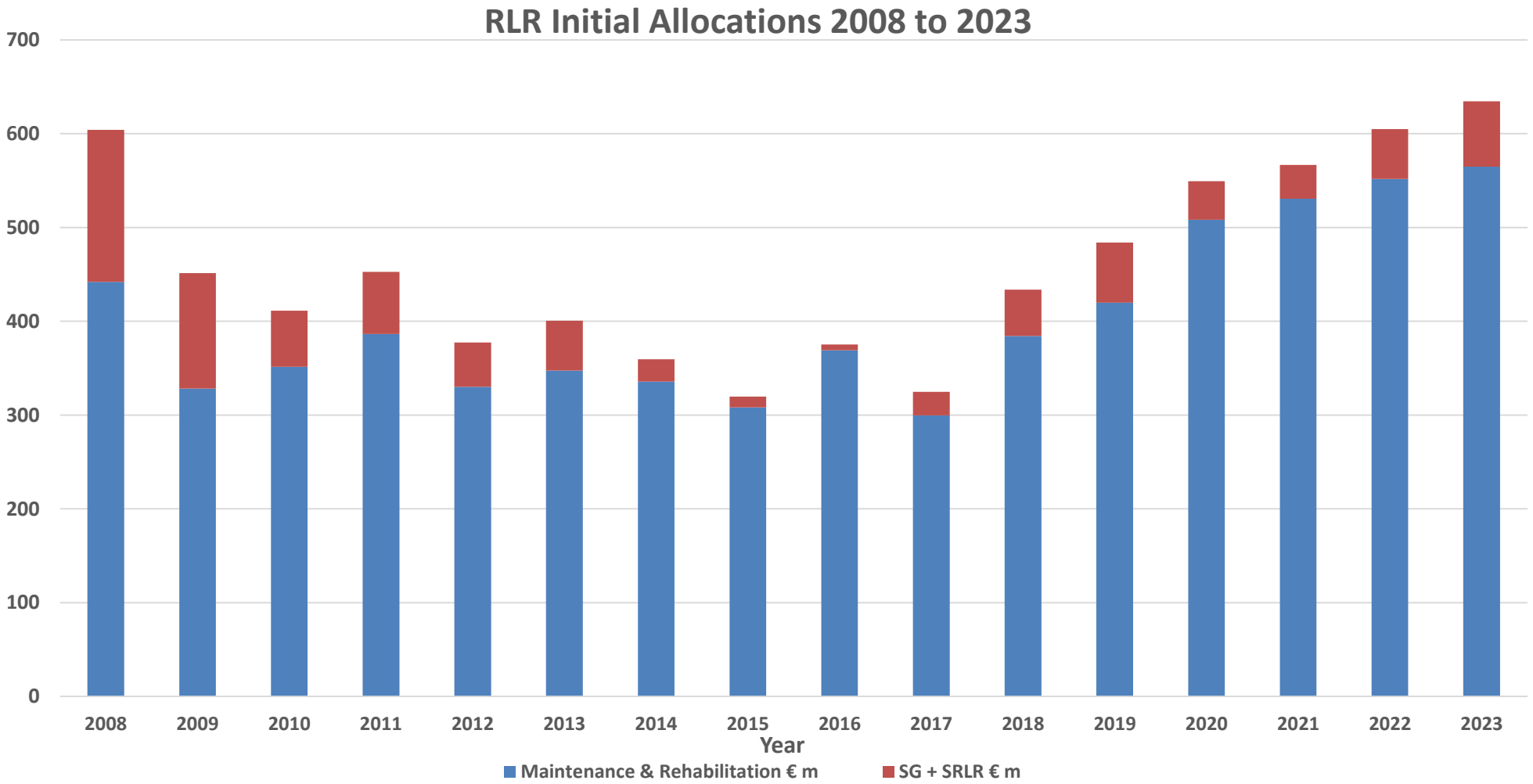
1. Network and Funding –
Road Lengths and Traffic

Category	Length (km)	Sub-total Lengths (km)	% of Total Length	% of Traffic Use
Motorways	372		0.4%	45%
National Primary	2,361		2.3%	
National Secondary	2,687		2.6%	
Sub-Total		5,420		
Regional	13,387		13.1%	55%
Sub-total		13,387		
Local Primary	23,864		23.4%	
Local Secondary	33,733		33.0%	
Local Tertiary	25,796		25.2%	
Sub-total		83,392		
Total	102,201			

Network and Funding

- Under the Roads Act
  - Local authorities are responsible for the administration, construction, and maintenance of Regional and Local Roads. They do so using the various general funding sources available to them which are **supplemented by DoT allocations**
  - Local Authorities are responsible, in partnership with Transport Infrastructure Ireland (TII), for construction and maintenance of the National Road network, comprising of National Primary and National Secondary Roads. Most works on national roads are funded 100% by TII.

Network and Funding –
Annual Allocations 2008-2023



Network and Funding – Grant Category

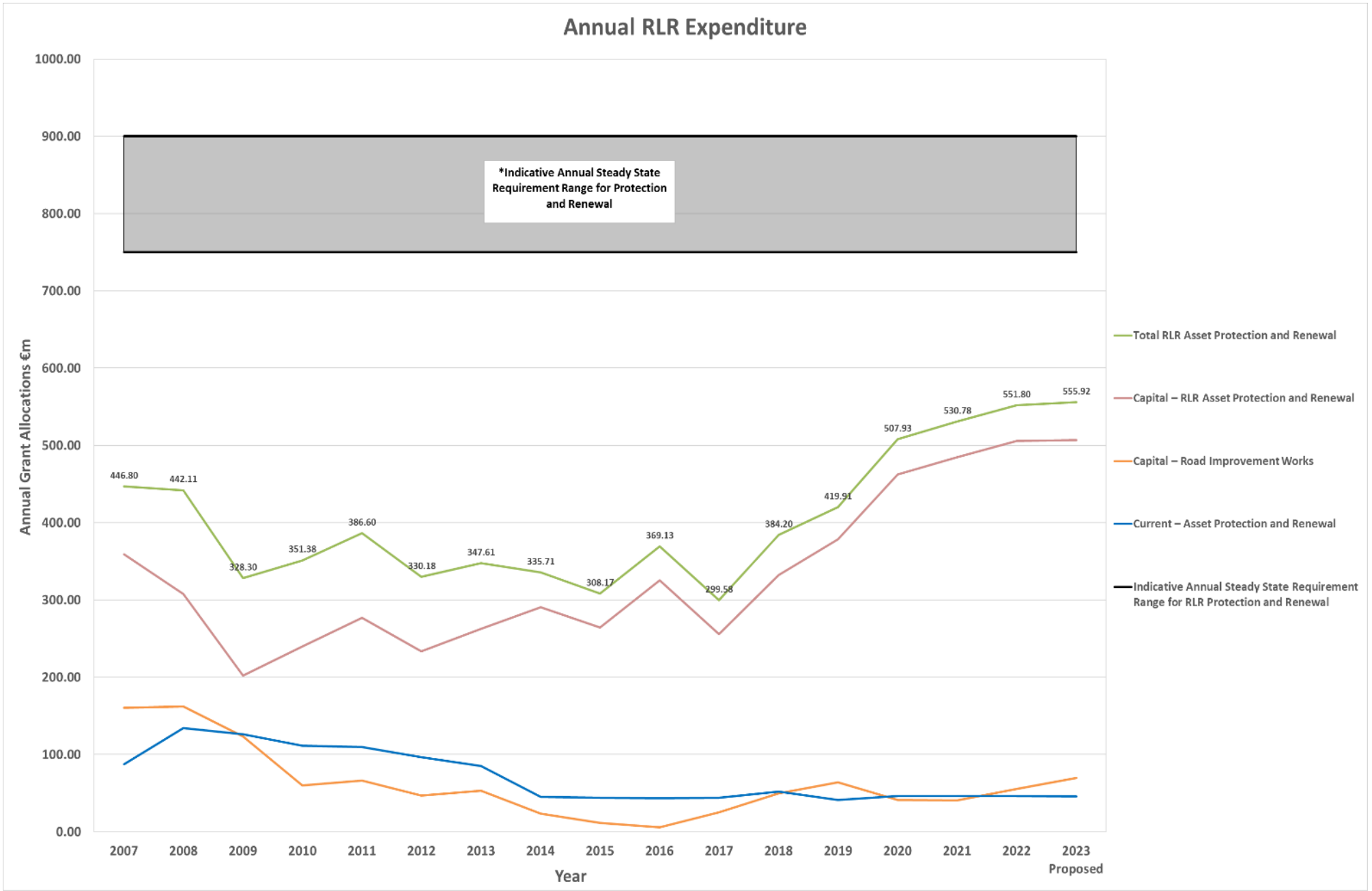
Works Category	2019	2023
	€ million	€ million
Restoration Improvement	215	298
Restoration Maintenance (including Supplementary)	53	77
Discretionary Grant	82	84
Bridge Rehabilitation	11	16
Safety Improvement Works	9	13
Community Improvement Schemes	15	12
Drainage	20	20
Former National Road Pavements	5	12
Climate Adaptation & Resilience Works	0	16
Miscellaneous	8	8
Strategic Grant Projects	50	44
Specific Grant Projects	15	26
Total	**483**	**626**

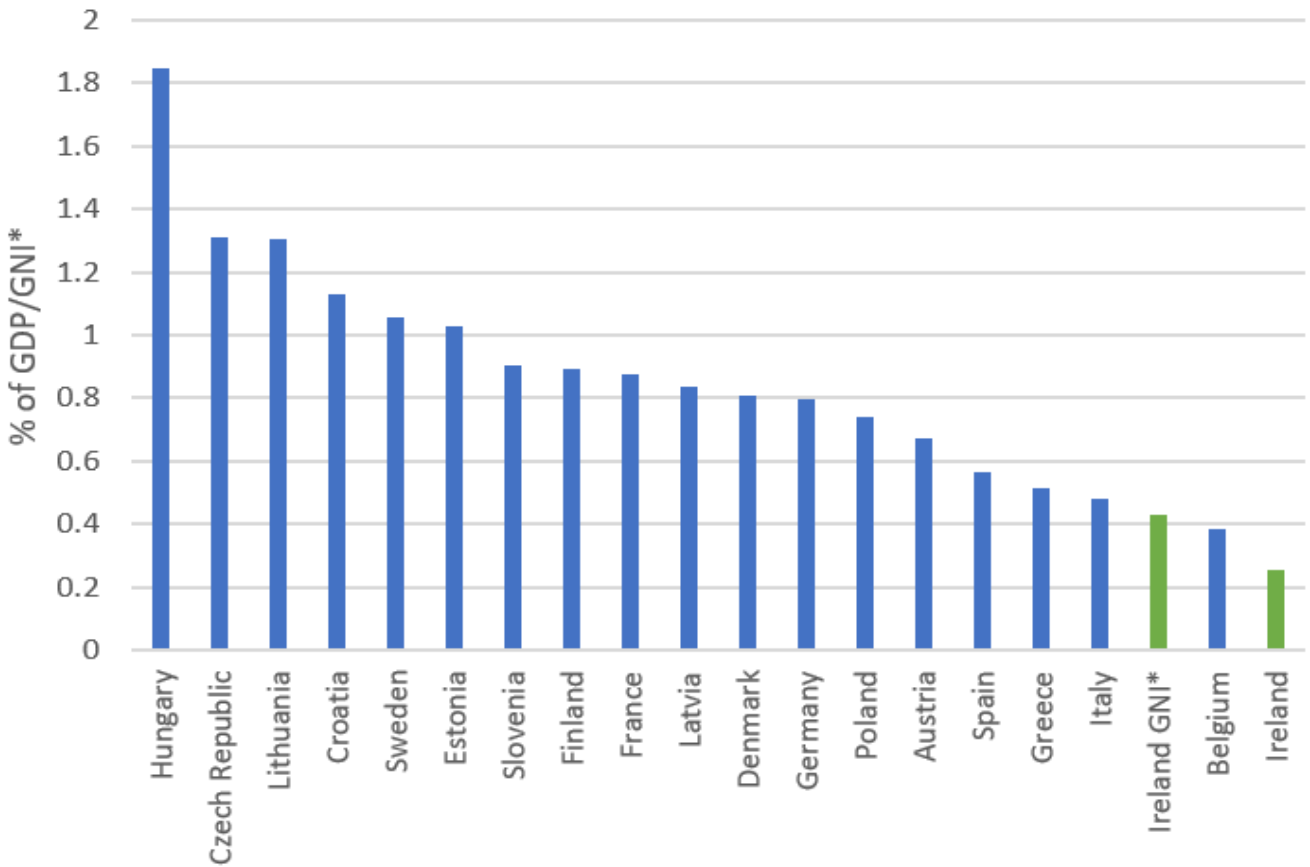
Network and Funding Projects 2023

2. Outputs for Funding – Length Road Maintained

Year	Total Strengthening (km)	Total Resealing (km)	Total length (km)
2019	2343	2557	4900
2020	2653	3065	5718
2021	2694	3373	6067
2022 (Prelim)	2518	3192	**5700**

Outputs for Funding – Back log to Steady State



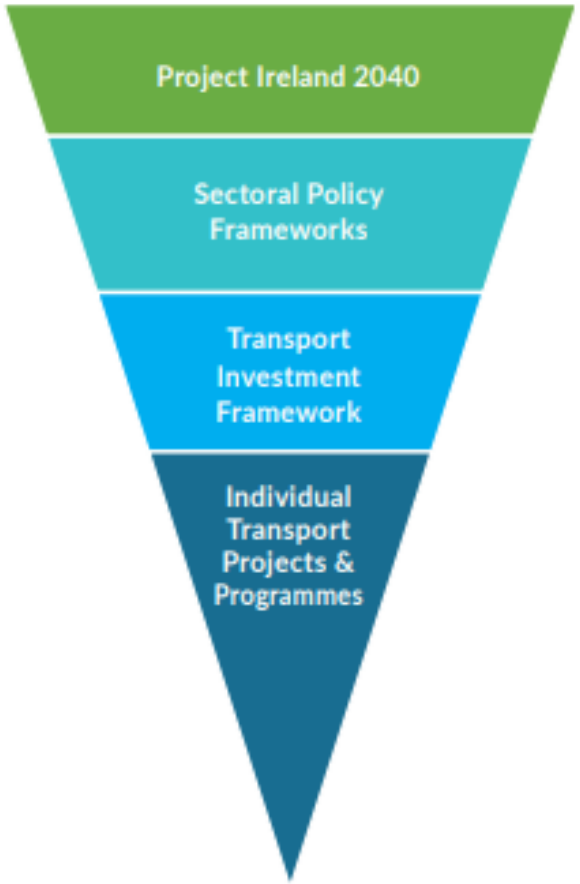


Source: OECD, Transport infrastructure investment and maintenance

Outputs for Funding

- Percentage of Gross Domestic Product on inland Transport Infrastructure investment, 2020
- Ireland's transport infrastructure investment is 0.43% of GNI* compared to an EU average of 0.87% in terms of GDP.

3. Policies in the Transport Sector



Policies in the Transport Sector - *Project Ireland 2040 NSOs*

Policies in the Transport Sector
National and Sectoral Policies

National and Sectoral policies set targets for the Transport Sector

- CAP Net Zero objective:

42-50% reduction in CO2 emissions

- SMP targets:

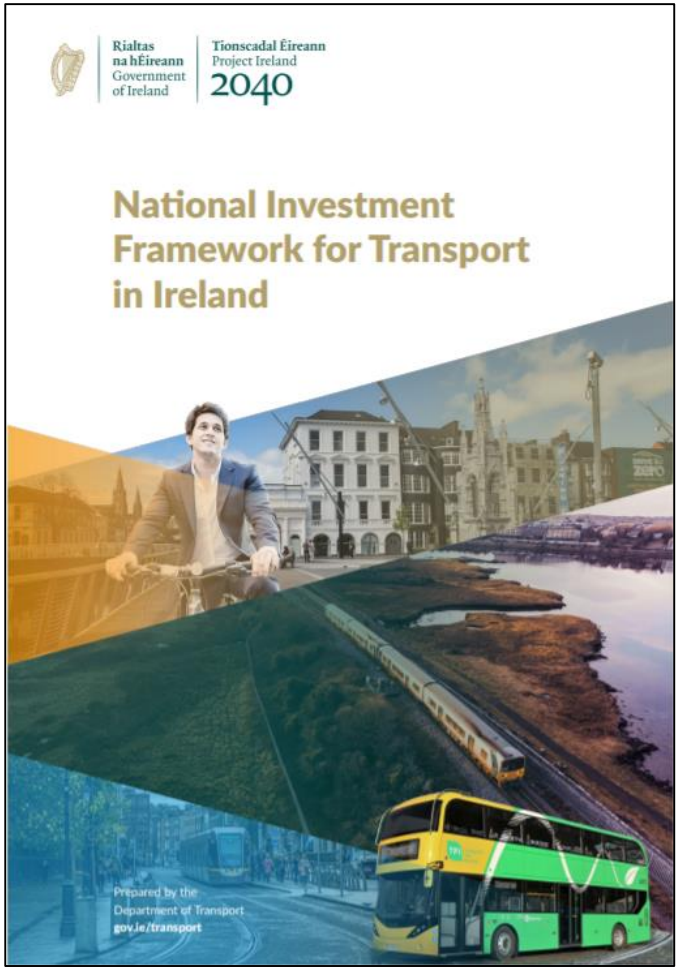
500,000 additional active and public transport journeys.

- RSS Vision Zero:

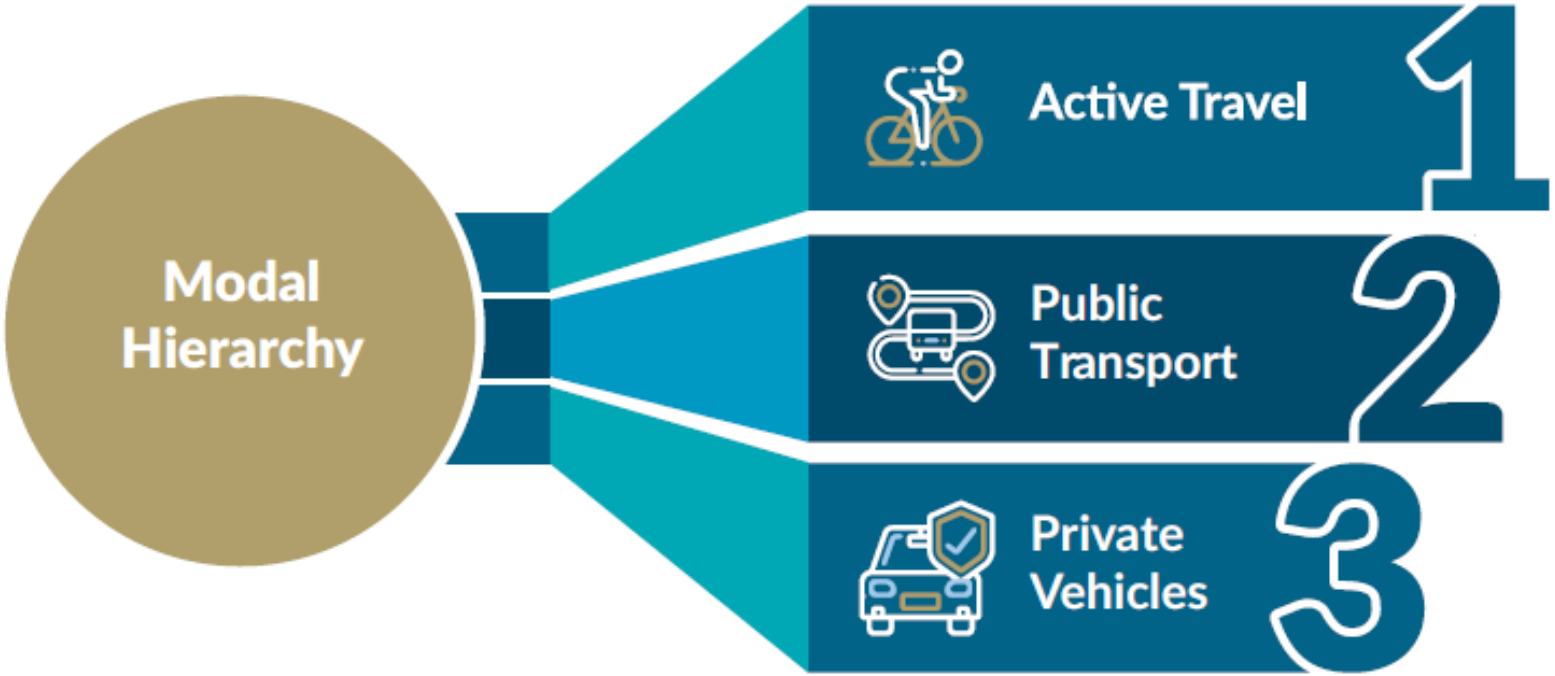
Reduce fatalities by 50% by 2030

Policies in the Transport Sector - NIFTI

- The DoT high-level strategic framework to support the consideration and prioritisation of investment in the land transport network.
- Part of Government's Project Ireland 2040 vision.
- Developed to ensure that transport investment is aligned with the National Planning Framework and supports the delivery of the ten NSOs, as well as supporting the Climate Action Plan and our national decarbonisation commitments.



Policies in the Transport Sector – *NIFTI Modal Hierarchy*



Sets out a hierarchy of travel modes to be **accommodated and encouraged** when investments are made.

Policies in the Transport Sector –
NIFTI Intervention Hierarchy

Ensure that investment is **proportionate** to the problem identified and aims to make best use of our existing assets.

4. Other Ongoing Items -
Climate Change Initiatives

- Climate Adaptation Strategy for Regional and Local Roads

  Published 21st April 2023

- Carbon Management, for RLR –

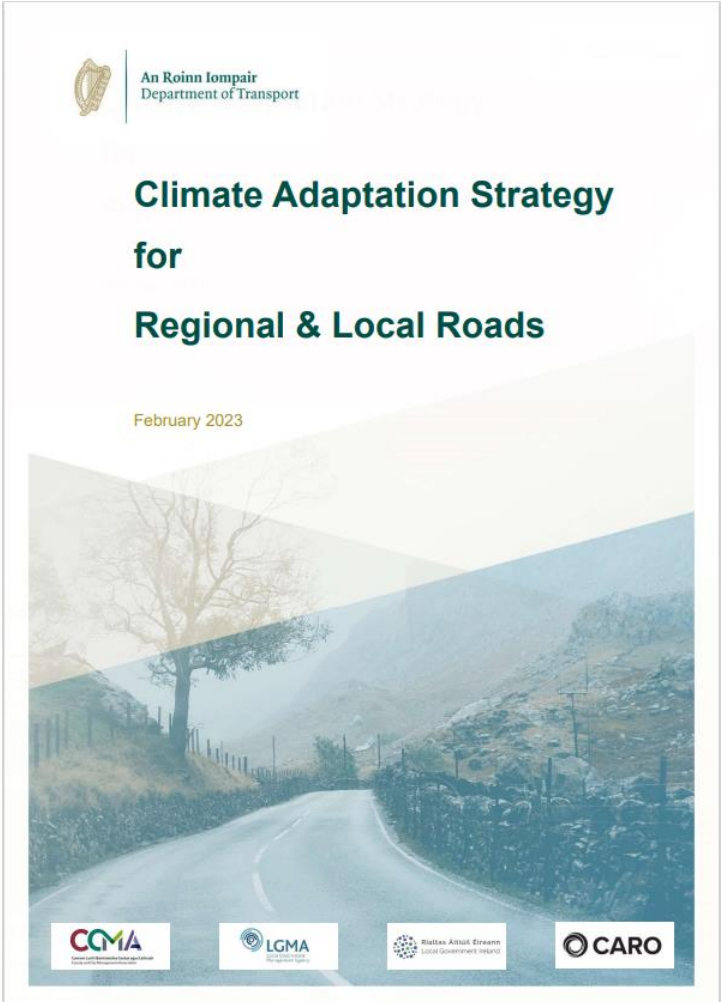
  (CARO underway)

- Green Public Procurement

  (Cork Co Co underway)

- Reclaimed Asphalt Pilot Projects (Monaghan Co Co underway)

- Strategic Salt Barns for RLR



Other Ongoing Items -
Road Safety Initiatives

- Collision Analysis Regional Roads
- 302 low cost safety schemes funded 2023
- Sharing of Collision Data to Road Authorities
- LA Road Safety Engineers
- LA16 management
- Zebra Crossings and Belisha Beacons

Other Ongoing Items -

Environmental Impact Assessment Regulation

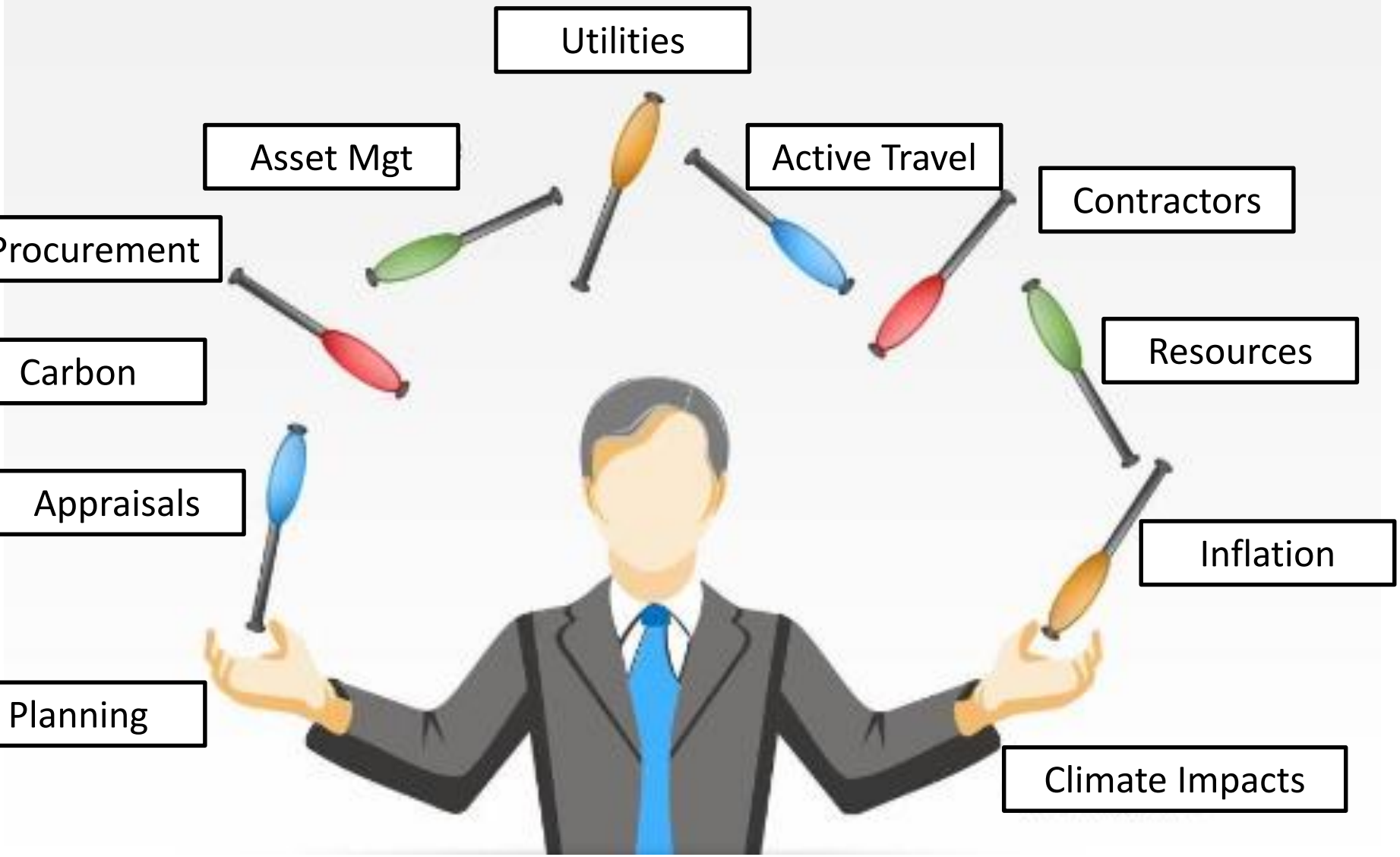
- European Union (Roads Act 1993) (Environmental Impact Assessment) (Amendment) Regulations 2019 came into force on 24th June 2019. These Regulations transpose Directive 2014/52/EU into Irish law

- SI 279 / 2019 – Minister's role in ensuring compliance with planning conditions issued by An Bord Pleanála

Other Ongoing Items –

- HV Interface Cables in Roads
- Financial – good level of LA Own Resource Pavement expenditure crucial – and recorded on MapRoad
- Financial – Timely Drawdown of funds
- Inflation / Supply Chain Co-operation Agreements

Feeling Overwhelmed?



Thank You

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County and City Management Association

ROADS Services Training Group

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION - 2023

Day 1 Session 1 Presentation 3-PMS

Hodson Bay Hotel Athlone, May 2023

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County and City Management Association

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION – 2023

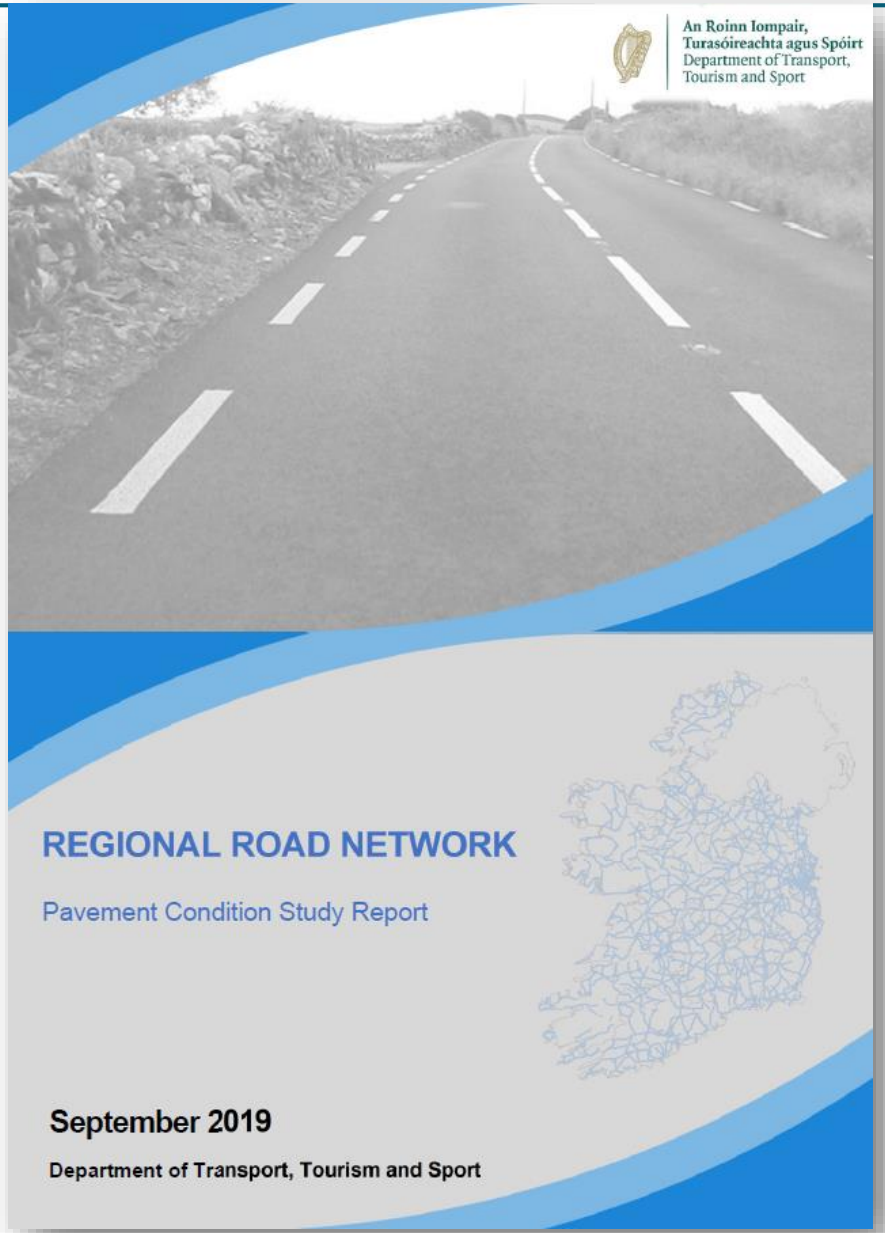
Regional and Local Road Network Condition

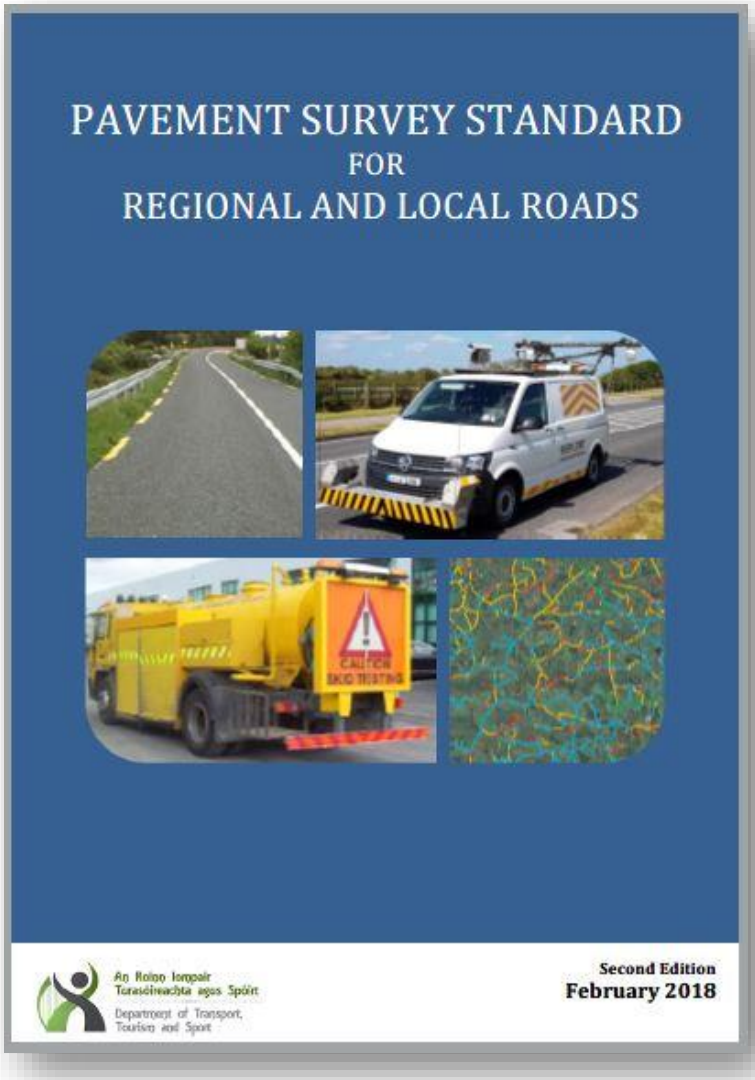
Dr. Kieran Feighan
Managing Director
PMS Pavement Management Services Ltd

An Roinn Iompair
Department of Transport

Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

Final Report
Published Sept 2019





Class	Length (km)
Regional	13150
L Primary	26000
L Secondary	35500
L Tertiary	20200

TABLE 3: NETWORK SURVEYS

Asset Type	Machine Survey		PSCI Visual Survey	
	Frequency	Coverage	Frequency	Coverage
Regional Roads (R)	6 years	100%	2 years	100%
Local Primary Roads (LP)	2 years	10%	2 years	100%
Local Secondary Roads (LS)	2 years	5 %	2 years	100%
Local Tertiary Roads (LT)	5 years	5%	5 years	100%

Network Model Breakdown

- Regional Road Network
  - 13150 km
  - Over 46000 individual sections
  - Lengths ranging from 2 metres to 13 km.
  - Single authoritative model in 2018
  - 32 individual models in 2011

Survey Equipment

- Road Condition Data (IRI, LPV, Rut & MPD)
  - Road Surface Profiler (RSP)
- Skidding Resistance Data (SC)
  - SCRIM
- Digital Video Data (Visual Rating)
  - both RSP (.JPeg) and SCRIM (.Avi)

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Visual Rating – Pavement Surface Condition Index (PSCI)

Rating System 1 to 10

Rating is assigned based on visible pavement distress present.

Rating	Primary Rating Indicators*	Secondary Rating Indicators*
10	No visible defects.	Road surface in perfect condition, like new.
9	Less than 10 % of surface with surface defects[1]	Road surface in very good condition.
8	10% to 30% of surface with surface defects[1]	Little or No Other defects.
7	Greater than 30% of surface with surface defects[1]	Little or No Other defects. Old surface with aged appearance.
6	Less than 20% of Other Cracking[2] may be present. Patching generally in good condition. May be out of shape requiring some reduction in driver speed.	Surface defects[1] may be present. No structural distresses[3]
5	Greater than 20% Other Cracking[2] present. Patching generally in fair condition. Out of shape requiring reduction in driver speed. Very localised structural distress[3] (< 5 sq.m of surface) may be present.	Surface defects[1] may be present.
4	Structural distress[3] present. Rutting or Alligator Cracking for 5% to 25% of surface. Short lengths of Edge Breakup/Cracking. Small number of Potholes.	Other defects may be present.
3	Significant areas of Structural distress[3]. Rutting or Alligator Cracking for 25% to 50% of surface. Significant continuous lengths with Edge Breakup/Cracking. Frequent Potholes.	Other defects may be present.
2	Large areas of Structural distress[3]. Rutting or Alligator Cracking for over 50% of surface. Severe Rutting (over 75 mm deep). Extensive Patching in very poor condition. Many Potholes.	Very difficult to drive on.
1	Severe Structural distress[3] with extensive loss of pavement surface.	

Condition Parameters

- IRI – Ride Quality
- LPV3 – Ride Quality
- Rut Depth – Structural
- MPD – Macrotexture
- CSC – Microtexture

Recorded at 10 metre intervals. Aggregated to 100 metre intervals for reporting

- Paved Width

Recorded at 100 metre intervals

- Visual Rating

Recorded continuously

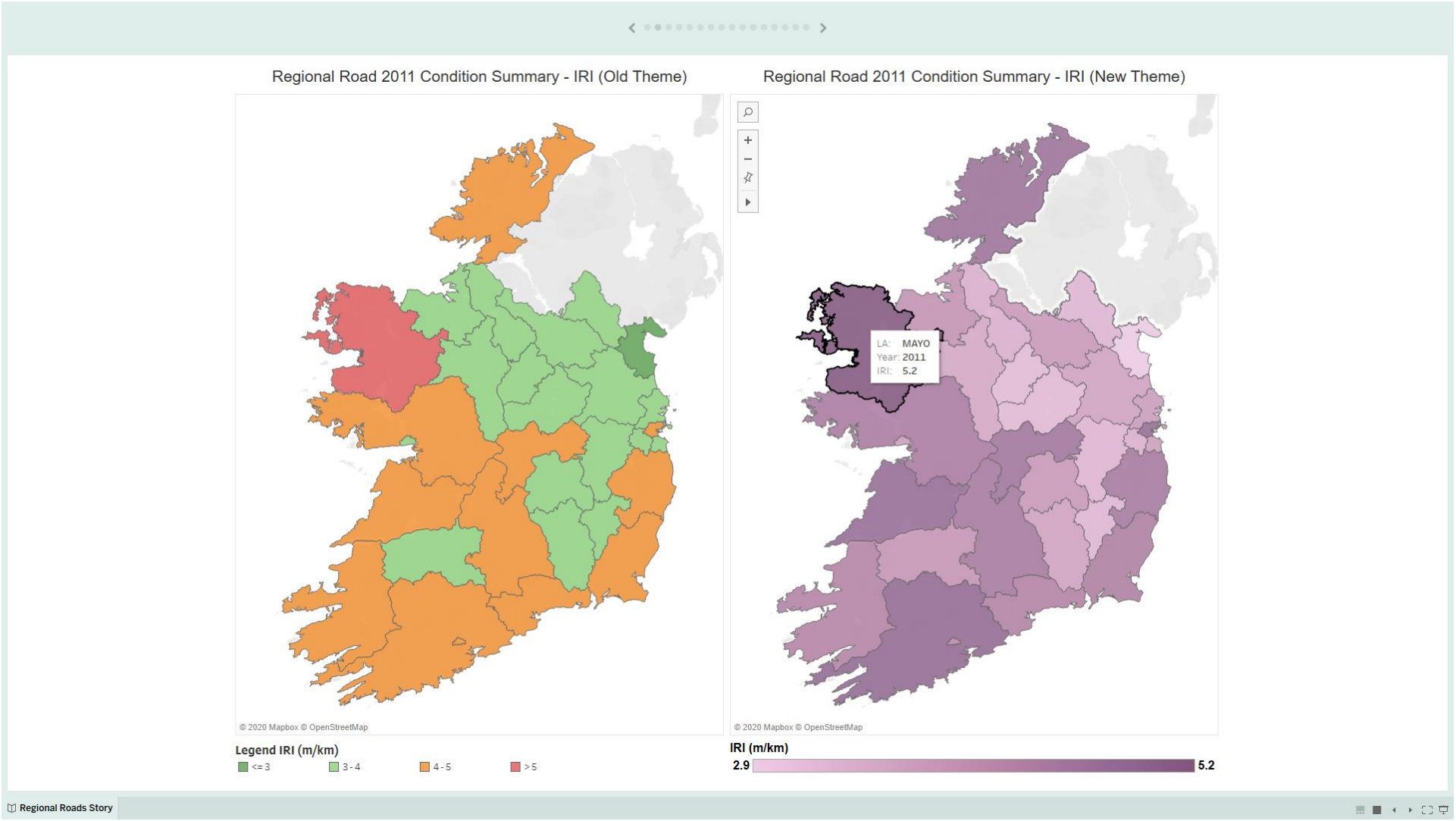
	Overall Average	
Parameter	**2018**	**2011**
IRI (mm/m)	4	4.2
Left Rut (mm)	9.2	10.3
MPD (mm)	1.4	1.4
CSC	0.50	0.53
Visual Rating	7.4	7.2

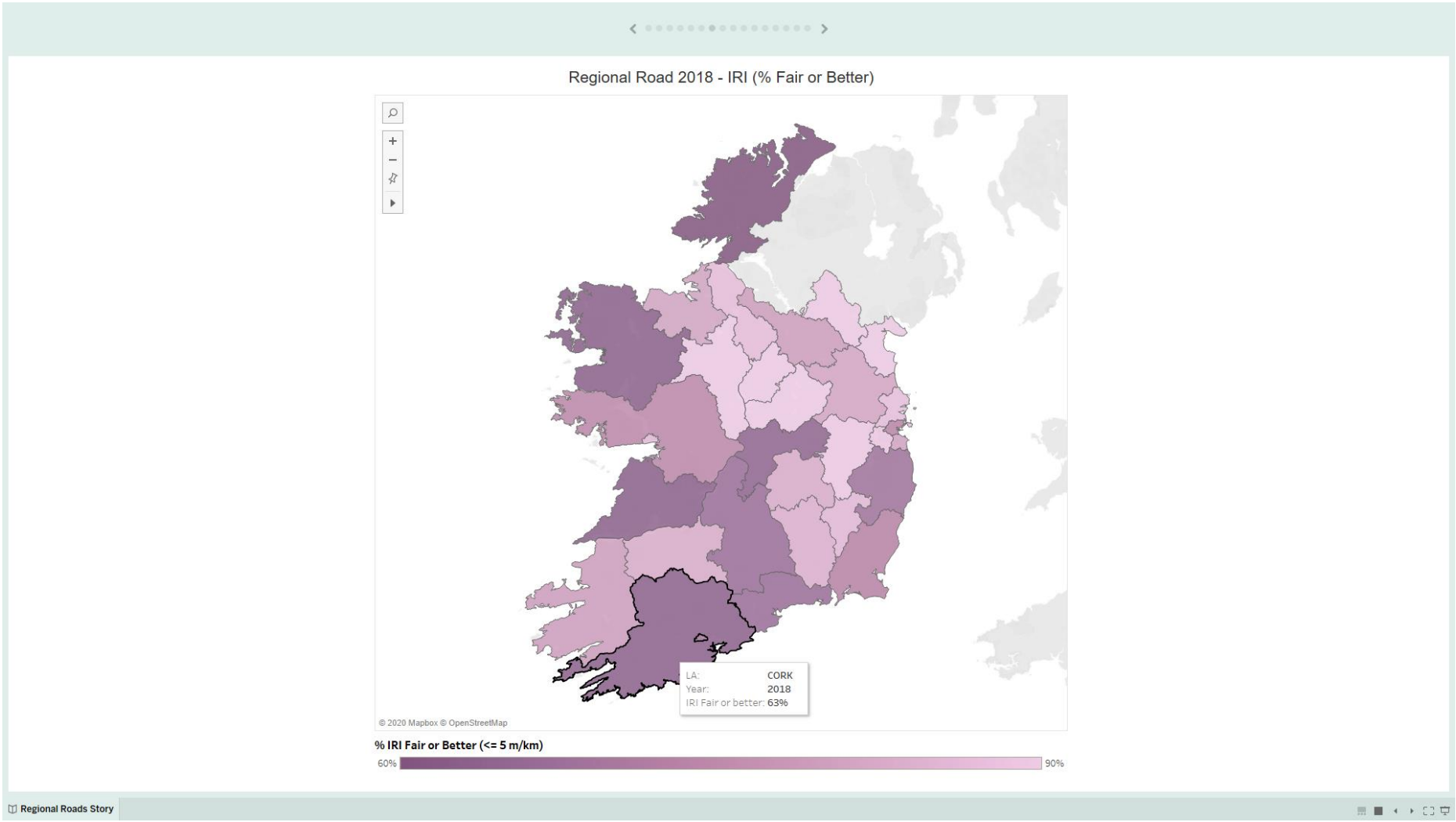
Condition Classes for each Parameter

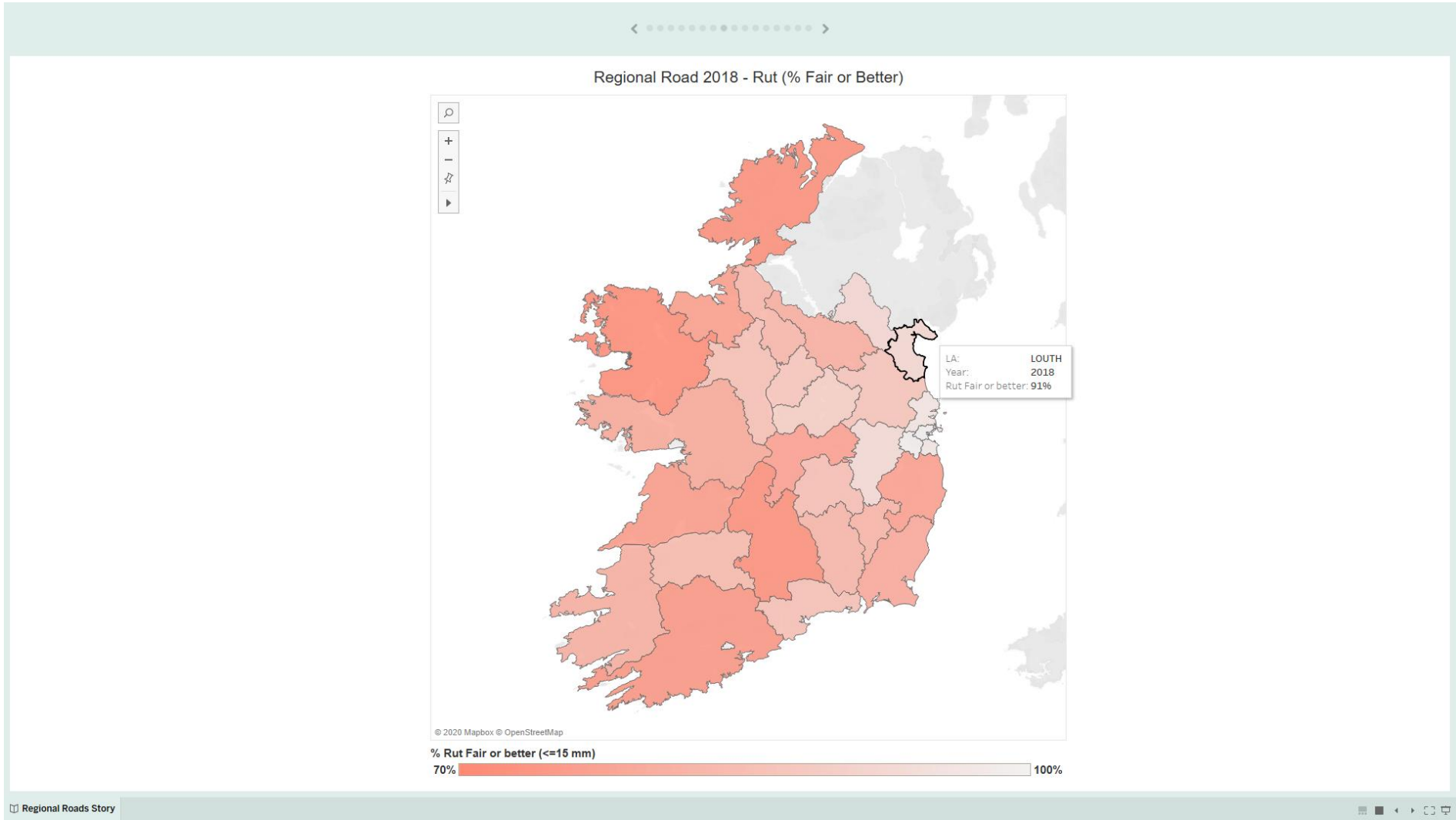
- Very Good, Good, Fair, Poor, Very Poor
- Qualitative
- Easier to Understand and Explain
- Can be used for Key Performance Indicators
- Best Practice Internationally
- Typically report on % Fair or Better

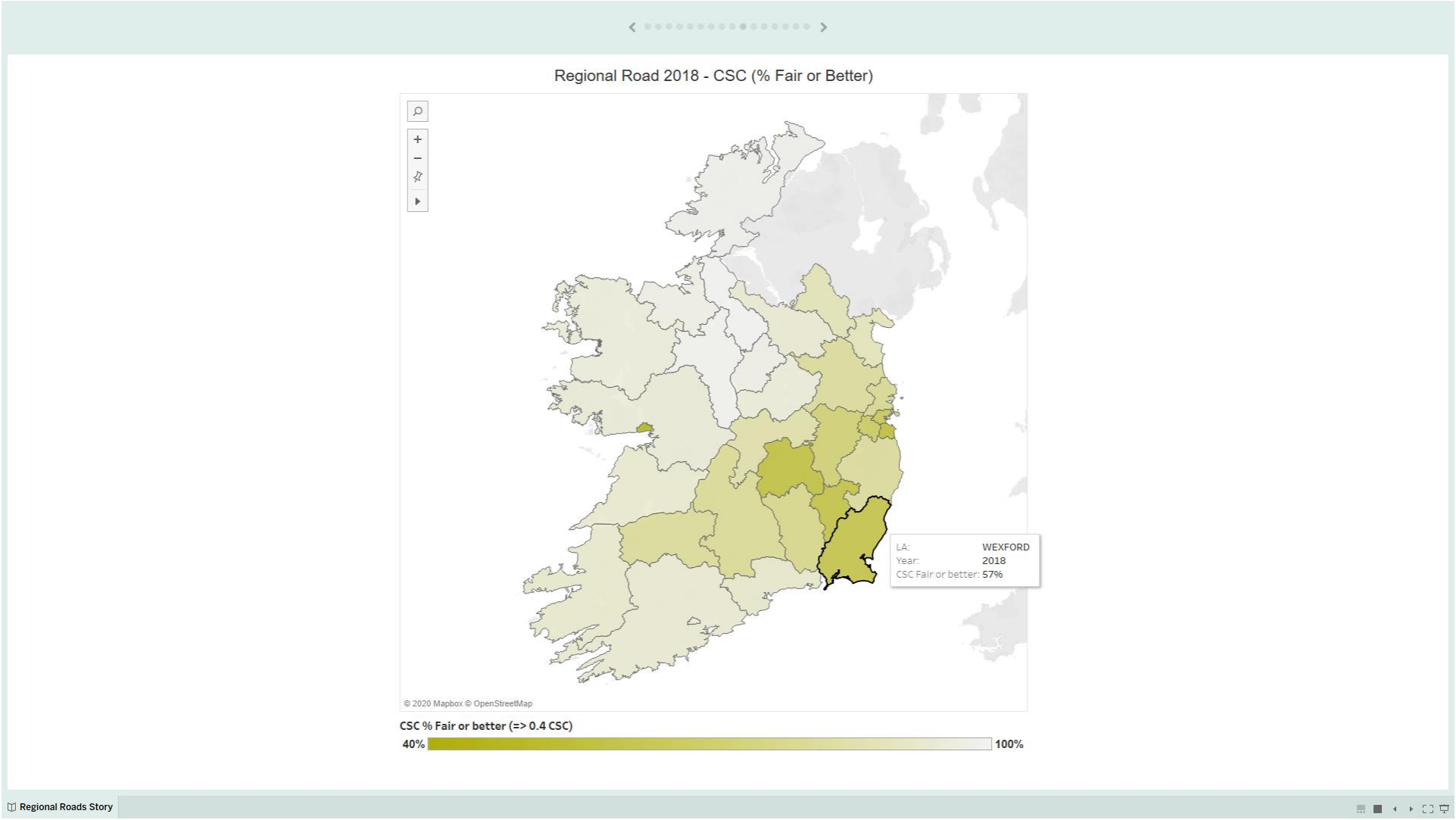
Condition Class Definitions

Condition Class	IRI	Rut	LPV3	CSC
Very Good	< 3	< 6	< 2	> 0.5
Good	3 - 4	6 - 9	2 - 4	0.45 - 0.5
Fair	4 - 5	9 - 15	4 - 7	0.40 - 0.45
Poor	5 - 7	15 - 20	7 - 10	0.35 - 0.40
Very Poor	> 7	> 20	> 10	< 0.35


Regional Road 2011 Condition Summary - IRI (Old Theme)
Regional Road 2011 Condition Summary - IRI (New Theme)
LA: MAYO
Year: 2011
IRI: 5.2
© 2020 Mapbox © OpenStreetMap
© 2020 Mapbox © OpenStreetMap
Legend IRI (m/km)
<= 3
3 - 4
4 - 5
> 5
IRI (m/km)
2.9
5.2
Regional Roads Story


Regional Road 2018 - IRI (% Fair or Better)
LA: CORK
Year: 2018
IRI Fair or better: 63%
© 2020 Mapbox © OpenStreetMap
% IRI Fair or Better (<= 5 m/km)
60%
90%
Regional Roads Story


Regional Road 2018 - Rut (% Fair or Better)
LA: LOUTH
Year: 2018
Rut Fair or better: 91%
© 2020 Mapbox © OpenStreetMap
% Rut Fair or better (<=15 mm)
70%
100%
Regional Roads Story


Regional Road 2018 - CSC (% Fair or Better)
LA: WEXFORD
Year: 2018
CSC Fair or better: 57%
© 2020 Mapbox © OpenStreetMap
CSC % Fair or better (=> 0.4 CSC)
40%
100%
Regional Roads Story

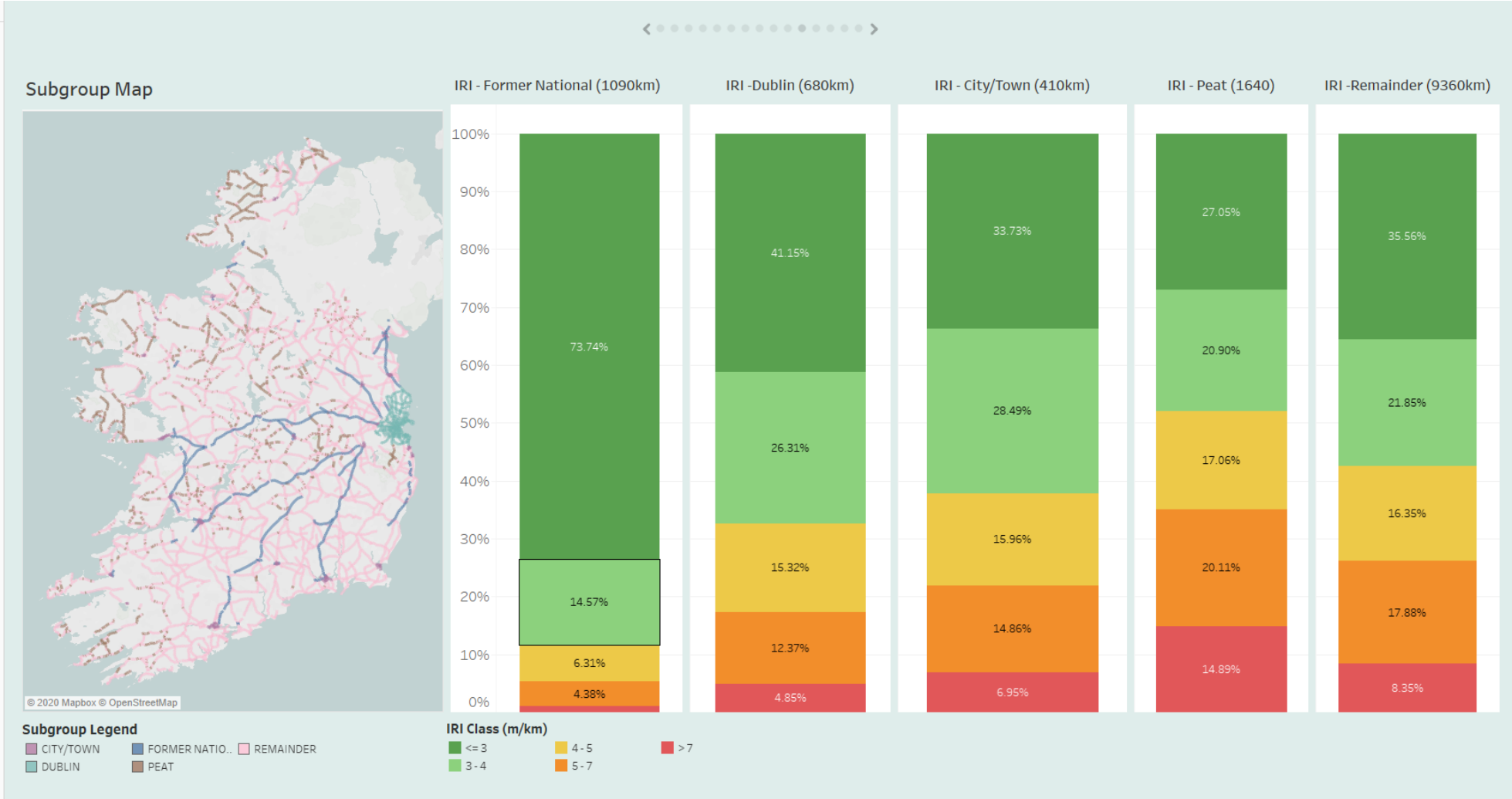
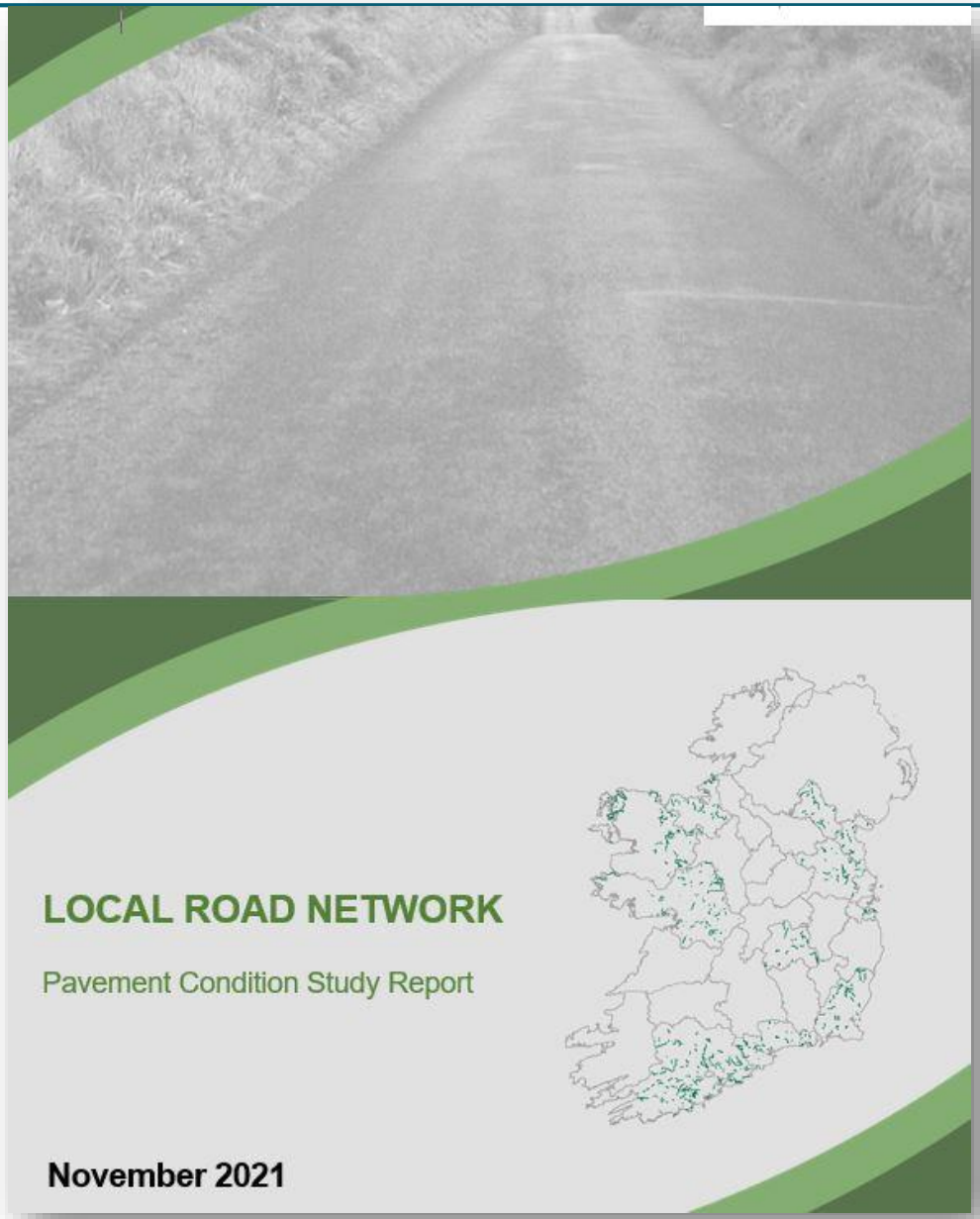

Subgroup Map
© 2020 Mapbox © OpenStreetMap
IRI - Former National (1090km)
IRI -Dublin (680km)
IRI - City/Town (410km)
IRI - Peat (1640)
IRI -Remainder (9360km)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
73.74%
14.57%
6.31%
4.38%
41.15%
26.31%
15.32%
12.37%
4.85%
33.73%
28.49%
15.96%
14.86%
6.95%
27.05%
20.90%
17.06%
20.11%
14.89%
35.56%
21.85%
16.35%
17.88%
8.35%
Subgroup Legend
CITY/TOWN
FORMER NATIO..
REMAINDER
DUBLIN
PEAT
IRI Class (m/km)
<= 3
3 - 4
4 - 5
5 - 7
> 7

TABLE A1: TREATMENT / WORKS TYPE CATEGORIES AND CODES WITH CURRENT PERMITTED GRANTS

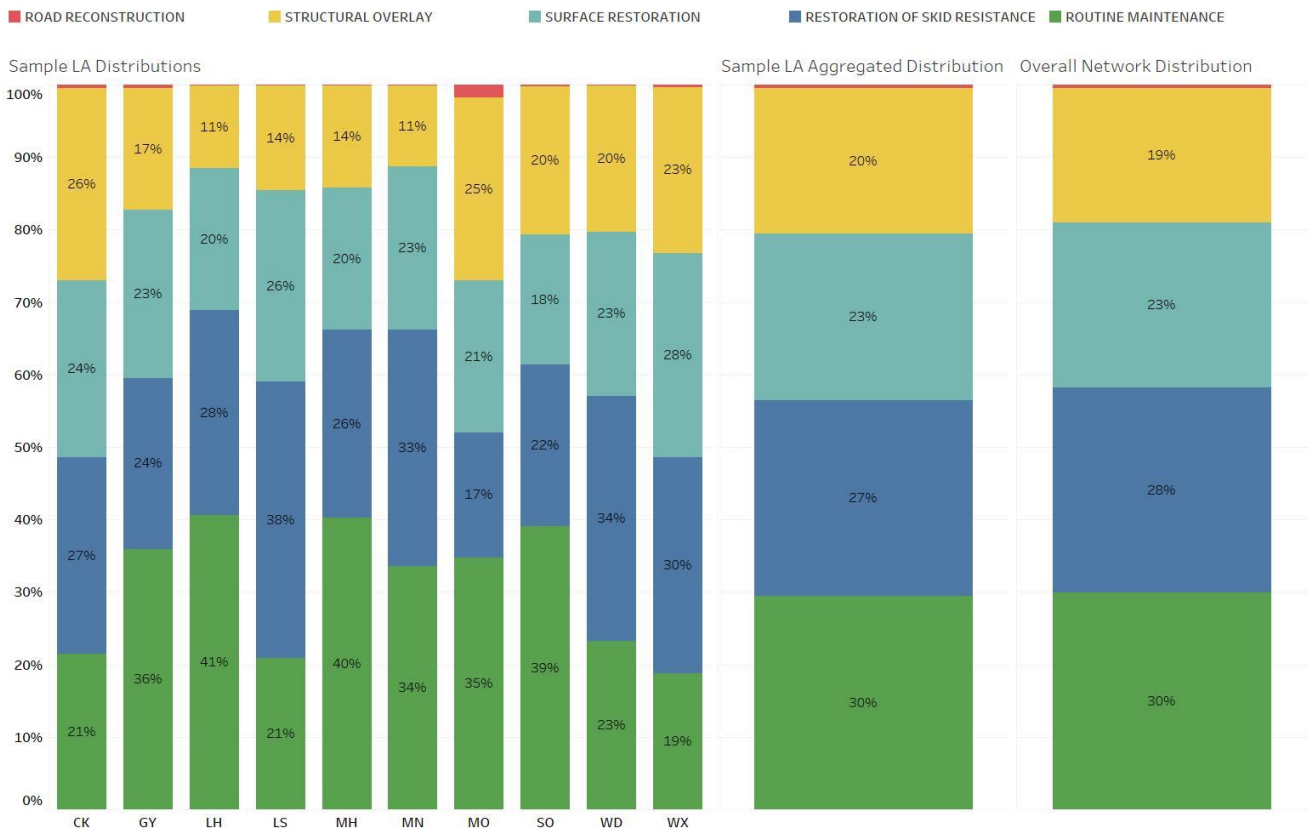
PSCI Rating	Pavement Treatment / Works Type	Treatment Code	Permitted Grant
10 9	**Routine Maintenance**	na	DG
8 7	**Resealing and Restoration of Skid Resistance**	RS (or SD)	CI, RM, DG
6 5	**Surface Restoration** Carry out localised repairs and treat with surface treatment or thin overlay Works can include combinations of: - *Pothole Repair (PR); Edge Repair (ER); Drainage Works (D) and Surfacing*	SR	CI, RI, DG
4 3	**Structural Rehabilitation** Structural Overlay / Inlay (Urban)	SO / SI	CI, RI, SG, DG
2 1	**Road Reconstruction**	RR	CI, RI, SG, DG

Mapping Parameters to Treatments

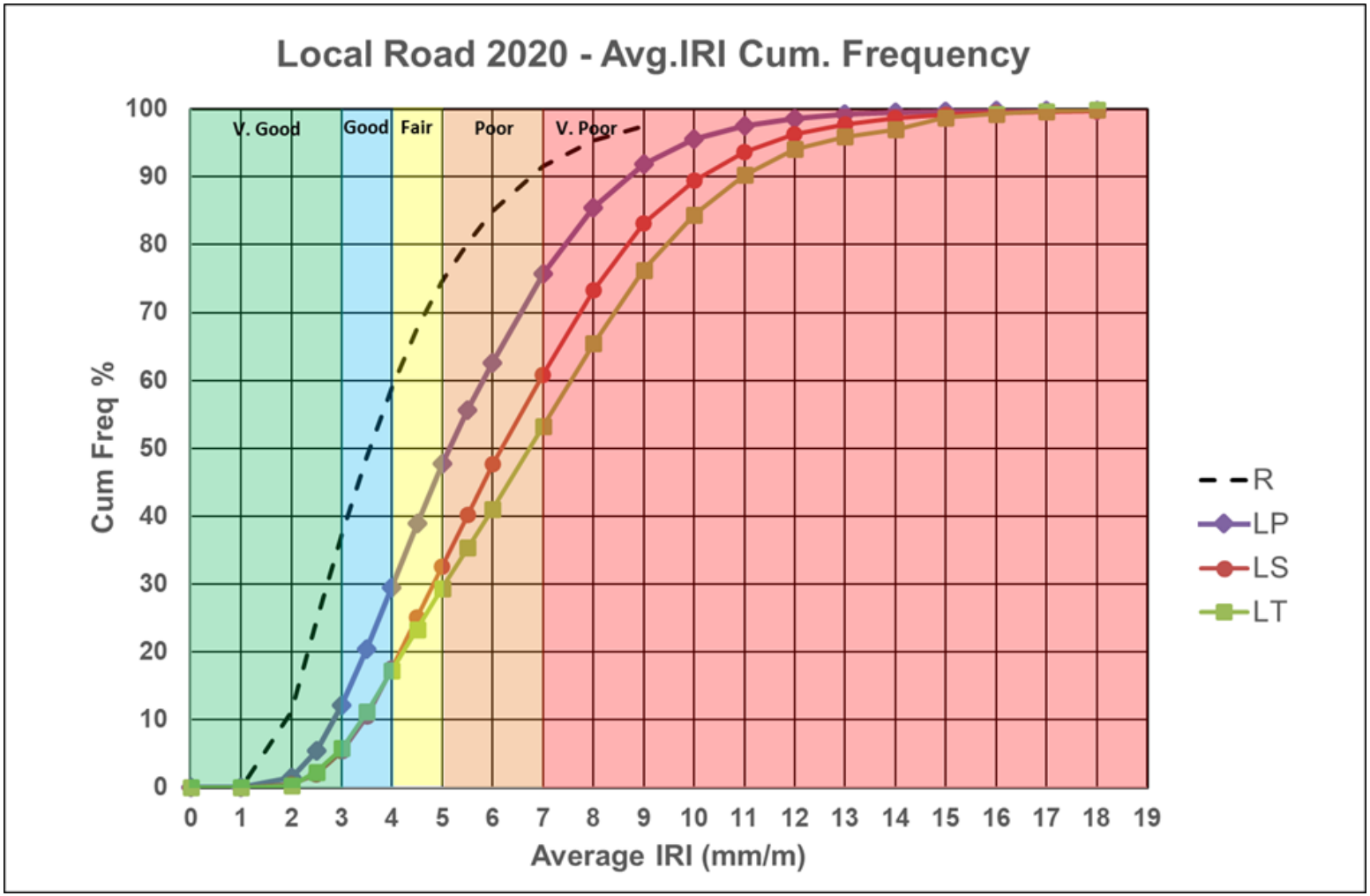
Road Reconstruction	Structural Overlay	Surface Restoration	Restoration of Skid Resistance
❑IRI > 12 **or** ❑Left Rut Depth > 40 mm **or** ❑Visual Rating of 1 or 2	❑IRI between 7 and 12 mm/m **or** ❑Left Rut Depth between 20 and 40 mm **or** ❑Visual Rating of 3 or 4	❑Visual Rating of 5 or 6 **Or** ❑Visual Rating of 7 to 10 **and** ❑IRI between 6 and 7 mm/m	❑Visual Rating of 7 or 8 **Or** ❑Visual Rating of 9 or 10 **and** ❑(MPD <= 0.6 mm OR SC <= 0.3)

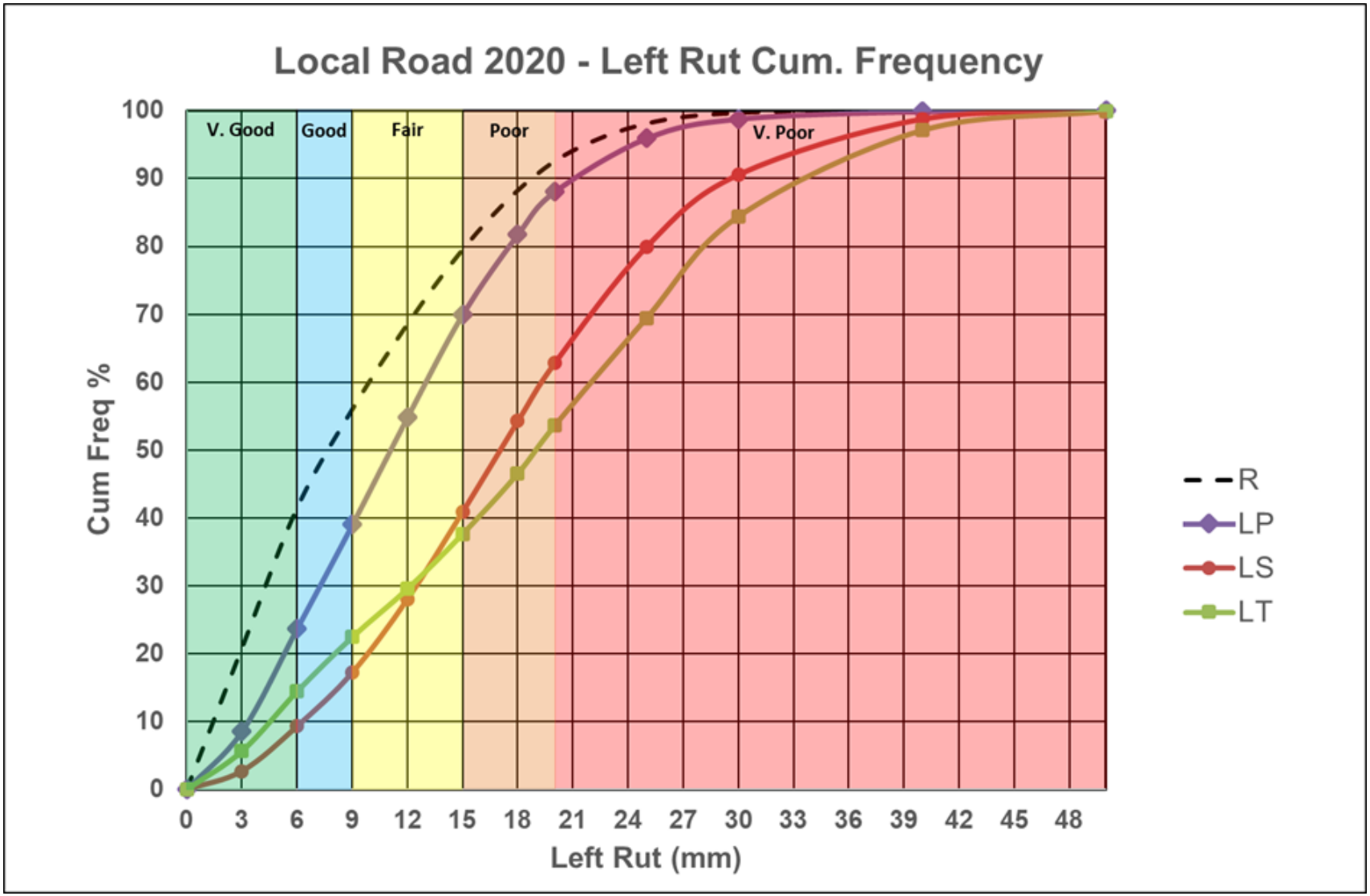

LOCAL ROAD NETWORK
Pavement Condition Study Report
November 2021

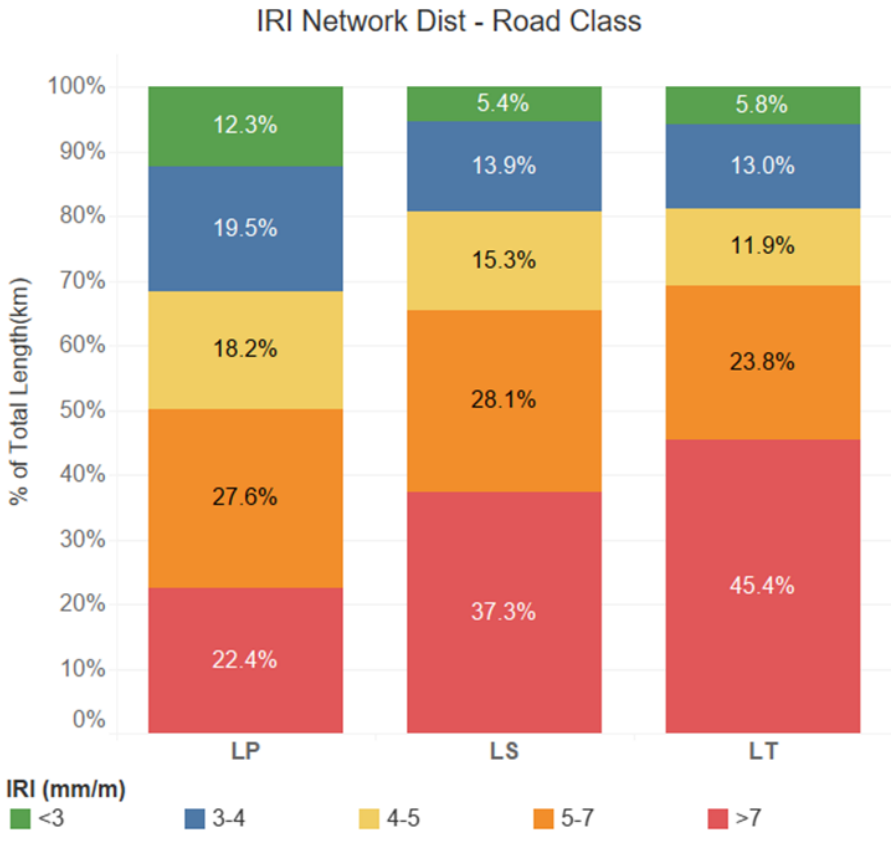

SLIGO
MAYO
MONAGHAN
LOUTH
MEATH
GALWAY
GAL CITY
DLR
LAOIS
WEXFORD
WATERFORD
CORK


ROAD RECONSTRUCTION
STRUCTURAL OVERLAY
SURFACE RESTORATION
RESTORATION OF SKID RESISTANCE
ROUTINE MAINTENANCE
Sample LA Distributions
Sample LA Aggregated Distribution
Overall Network Distribution
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
CK 26% 24% 27% 21%
GY 17% 23% 24% 36%
LH 11% 20% 28% 41%
LS 14% 26% 38% 21%
MH 14% 20% 26% 40%
MN 11% 23% 33% 34%
MO 25% 21% 17% 35%
SO 20% 18% 22% 39%
WD 20% 23% 34% 23%
WX 23% 28% 30% 19%
20% 23% 27% 30%
19% 23% 28% 30%

Road Class	PSCI	IRI	LPV 3m	RUT	MPD	Length(km)
R	7.4	4.0	3.8	9.1	1.4	13150 (full)
LP	7.2	5.5	7.6	11.7	1.4	933 (sample)
LS	6.6	6.5	9.5	17.7	1.5	896 (sample)
LT	6.2	7	11	18.9	1.4	207 (sample)


Local Road 2020 - Avg.IRI Cum. Frequency
V. Good
Good
Fair
Poor
V. Poor
Cum Freq %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Average IRI (mm/m)
R
LP
LS
LT


Local Road 2020 - Left Rut Cum. Frequency
V. Good
Good
Fair
Poor
V. Poor
Cum Freq %
0
10
20
30
40
50
60
70
80
90
100
0 3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48
Left Rut (mm)
R
LP
LS
LT


IRI Network Dist - Road Class
% of Total Length(km)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
12.3%
19.5%
18.2%
27.6%
22.4%
5.4%
13.9%
15.3%
28.1%
37.3%
5.8%
13.0%
11.9%
23.8%
45.4%
LP
LS
LT
IRI (mm/m)
<3
3-4
4-5
5-7
>7

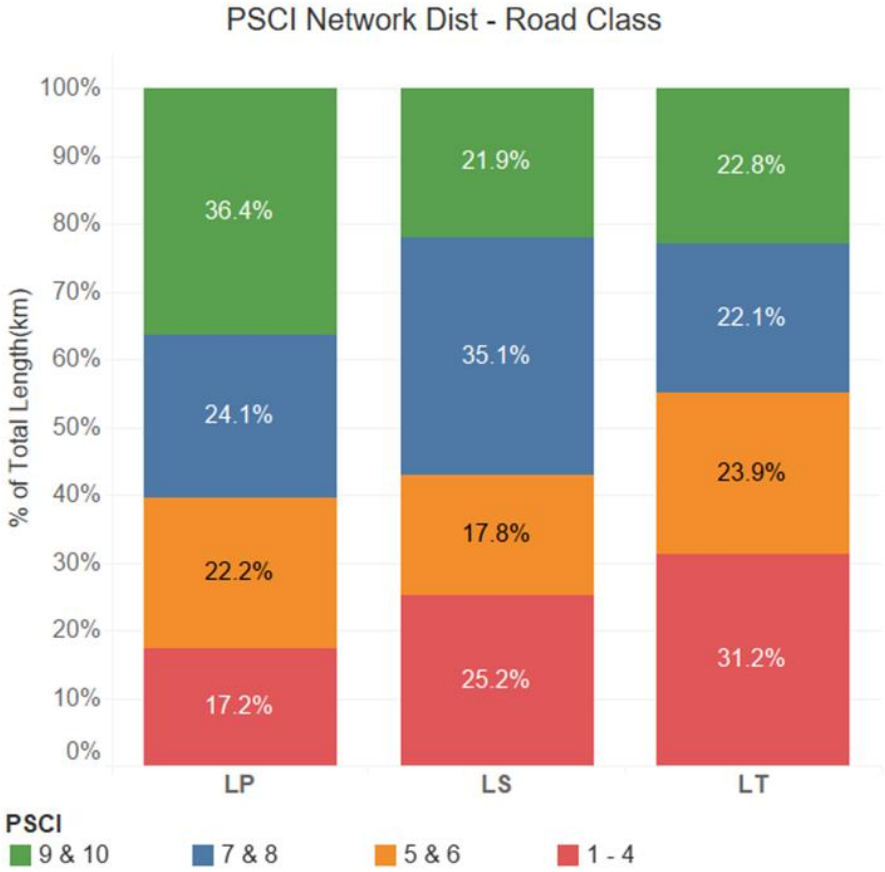

PSCI Network Dist - Road Class
% of Total Length(km)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
36.4%
24.1%
22.2%
17.2%
21.9%
35.1%
17.8%
25.2%
22.8%
22.1%
23.9%
31.2%
LP
LS
LT
PSCI
9 & 10
7 & 8
5 & 6
1 - 4

TABLE A1: TREATMENT / WORKS TYPE CATEGORIES AND CODES WITH CURRENT PERMITTED GRANTS

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4 3	**Structural Rehabilitation** Structural Overlay / Inlay (Urban)	SO / SI	CI, RI, SG, DG
2 1	**Road Reconstruction**	RR	CI, RI, SG, DG

Road Class	Parameter		Recon.	Struct.	Surf.	Skid.	RM		Width
LP	**IRI >**	OR	12	8	6	*NA*	*NA*	AND	> 3.5m
	Rut >		40	20	*NA*	*NA*	*NA*		> 4.0m
	PSCI		1-2	3-4	5-6	7-8	9-10		*NA*
	MPD <		*NA*	*NA*	*NA*	0.7	*NA*		>3.5m
LS	**IRI >**	OR	12	10	6	*NA*	*NA*	AND	> 3.5 m
	Rut >		40	20	*NA*	*NA*	*NA*		> 4.0 m
	PSCI		1-2	3-4	5-6	7-8	9-10		*NA*
	MPD <		*NA*	*NA*	*NA*	0.7	*NA*		*>3.5m*
LT	**PSCI**		1-2	3-4	5-6	7-8	9-10		*NA*

	Road Class			
	R	**LP**	**LS**	**LT**
Avg Width (m)	7.22	4.77	3.85	3.3
Length (km)	13297	23837	33700	25655
Area (Sq.m)	93.7 million	113.7 million	129.7 million	84.7 million

	Current Treatment Distribution			
Treatment	**R**	**LP**	**LS**	**LT**
Routine M	31.5%	29.6%	19.3%	29.9%
Skid Resistance	28.2%	18.7%	27.3%	20.7%
Surf Restoration	22.6%	26.1%	25.6%	23.1%
Struct Overlay	17.3%	24.6%	26.3%	21.1%
Reconstruction	0.4%	1.0%	1.6%	5.1%

Backlog Estimation 1 – Condition Based Backlog

- Backlog based on Target Condition
- Say 90% or 95% below the defined threshold
- Set up 95% targets by road class:
- Difference between 95% and the actual % below target is a backlog

Finland – IRI – Fair or Better

Traffic (AADT)	Speed (km/h)	IRI (mm/m)				
		V. Good	Good	Fair	Poor	V. Poor
< 350	≤ 60	≤ 1.8	1.8 – 3.4	3.4 – 5.4	5.4 – 6.6	> 6.6
	60 - 80	≤ 1.6	1.6 – 2.8	2.8 – 4.6	4.6 – 5.8	> 5.8
	100	≤ 1.4	1.4 – 2.6	2.6 – 4.0	4.0 – 4.8	> 4.8
350-1500	≤ 60	≤ 1.6	1.6 – 3.0	3.0 – 4.6	4.6 – 5.8	> 5.8
	60 - 80	≤ 1.4	1.4 – 2.6	2.4 – 3.8	3.8 – 5.0	> 5.0
	100	≤ 1.2	1.2 – 2.2	2.2 – 3.2	3.2 – 4.4	> 4.4
1500-6000	≤ 60	≤ 1.4	1.4 – 2.6	2.6 – 4.0	4.0 – 5.0	> 5.0
	60 - 80	≤ 1.2	1.2 – 2.2	2.2 – 3.2	3.2 – 4.2	> 4.2
	100	≤ 1.0	1.0 – 1.8	1.8 – 2.6	2.6 – 3.6	> 3.6

Finland – IRI – Fair or Better

Road Class	Target Level	Current %	Backlog for 95%
R	3.2	40	55
LP	3.8	26	69
LS	4.6	26	69
LT	5.4	32	63

Finland – Rut Depth – Fair or Better

Traffic (AADT)	Speed (km/h)	Rut Depth (mm)				
		V. Good	Good	Fair	Poor	V. Poor
350-1500	≤ 60	≤ 7	7.1 – 13	13.1 – 18	18.1 – 22	> 22
	60 - 80	≤ 7	7.1 – 12	12.1 – 16	16.1 – 21	> 21
	100	≤ 7	7.1 – 11	11.1 – 15	15.1 – 20	> 20
1500-6000	≤ 60	≤ 6	6.1 – 12	12.1 – 17	17.1 – 21	> 21
	60 - 80	≤ 6	6.1 – 11	11.1 – 15	15.1 – 20	> 20
	100	≤ 6	6.1 – 10	10.1 – 14	14.1 – 19	> 19
	120	≤ 6	6.1 – 9	9.1 – 14	14.1 – 18	> 18
> 6000	≤ 60	≤ 5	5.1 – 11	11.1 – 17	17.1 – 20	> 20
	60 - 80	≤ 5	5.1 – 10	10.1 – 15	15.1 – 19	> 19
	100	≤ 5	5.1 – 9	9.1 – 14	14.1 – 18	> 18
	120	≤ 5	5.1 – 8	8.1 – 13	13.1 – 17	> 17

Finland – Rut Depth – Fair or Better

Road Class	Target Level	Current %	Backlog for 95%
R	14	47	48
LP	15	43	52
LS	16	70	25
LT	18	77	18

Backlog Estimation 2 – Eliminate Backlog

- Cost to repair all Required Treatment sections
- End up with 100% in Routine Maintenance Category
- Legitimate Calculation – Point in Time cost of carrying out all "desired" treatments

Backlog Estimation 2 – Eliminate Backlog

	Projected Cost				
Treatment	**R**	**LP**	**LS**	**LT**	**Total**
ROUTINE	€0M	€0M	€0M	€0M	€0M
SKID	€163M	€100M	€166M	€83M	€511M
SURF REST	€780M	€721M	€807M	€476M	€2784M
STRUCT	€729M	€826M	€1006M	€527M	€3088M
RECON	€59M	€172M	€309M	€651M	€1192M
	€1730M	€1819M	€2289M	€1737M	€7575M

Backlog Estimation 3 – Desired Treatment Distribution

- Define Desired Distribution
- Compare with Existing Distribution of Treatments
- Backlog is difference between Desired and Existing

	DESIRED TREATMENT DISTRIBUTION			
Treatment	**R**	**LP**	**LS**	**LT**
RM	85.0%	85.0%	85.0%	85.0%
SKID	10.0%	10.0%	10.0%	10.0%
SURF	2.5%	2.5%	2.5%	2.5%
STRUCT	2.5%	2.5%	2.5%	2.5%
RECON	0.0%	0.0%	0.0%	0.0%

Backlog Estimation 4 – Fair or Better

Backlog based on Fair or Better, with descriptors aligned to maintenance treatments

VG	Routine Maintenance
G	Restoration of Skid Resistance
F	Surface Restoration
P	Structural Overlay
VP	Reconstruction

So Fair or Better = Sum of VG + G + Fair

Can vary Fair or Better target by Road Class

Can vary Target Distribution of VG/G/Fair by Road Class

	Current Treatment Distribution			
Treatment	**R**	**LP**	**LS**	**LT**
Routine M	31.5%	29.6%	19.3%	29.9%
Skid Resistance	28.2%	18.7%	27.3%	20.7%
Surf Restoration	22.6%	26.1%	25.6%	23.1%
Struct Overlay	17.3%	24.6%	26.3%	21.1%
Reconstruction	0.4%	1.0%	1.6%	5.1%

Current	**R**	**LP**	**LS**	**LT**
Fair or Better	82.3	74.4	72.1	73.8
Poor	17.3	24.6	26.3	21.1
Very Poor	0.4	1.0	1.6	5.1

	Distribution within "Fair or Better"			
Current	**R**	**LP**	**LS**	**LT**
Routine M	38.3	39.8	26.7	40.5
Skid Res	34.3	25.1	37.8	28.1
Surf Rest	27.4	35.1	35.5	31.4

Fair or Better – Treatment Distribution - Targets

Bracket	R	LP	LS	LT
Fair or Better	90	90	90	90
Poor	10	10	10	10
Very Poor	0	0	0	0

Treatment	Class	R	LP	LS	LT
Routine M	VG	80	80	80	80
Skid Resist	G	10	10	10	10
Surf Rest	Fair	10	10	10	10

Backlog – Fair or Better (Treatments)

Treatment	R	LP	LS	LT	Total
ROUTINE	€0M	€0M	€0M	€0M	€0M
SKID	€111M	€52M	€111M	€47M	€321M
SURF REST	€469M	€472M	€524M	€291M	€1755M
STRUCT	€306M	€490M	€623M	€277M	€1697M
RECON	€59M	€172M	€309M	€651M	€1192M
TOTAL	€945M	€1186M	€1568M	€1266M	€4966M

Summary of Backlog Costs

Backlog Calculation	Cost (Billions)
All Required Treatments	€7.58
Finland Fair or Better IRI	€7.23
Desired Treatment Distribution	€6.73
Fair or Better Grouping by Treatment	€4.97
Finland Fair or Better Rut Depth	€4.22

Unit Costs – 2021 vs 2022

Treatment	Regional	Local
ROUTINE	0.0	0.0
SKID	3.3	12.8
SURF REST	11.1	15.2
STRUCT	27.3	31.5
RECON	0.0	0.0

% Annual Increase

Backlog	2022	2021	% Increase
Fair or Better	5766.0	4965.5	16.1
Fix Everything	8959.2	7575.1	18.3

Impact on Backlog Cost Estimation

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Roads Services Training Group

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION - 2023

Day 1 Session 1 Presentation 4-DoTSO

Hodson Bay Hotel, Athlone May 2023

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LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION – 2022

Regional Road Network Safety Analysis (RR NSA)

Angela McCormack - Executive Engineer
Máire Dolan - Executive Technician
Department of Transport Support Office (DoTSO)

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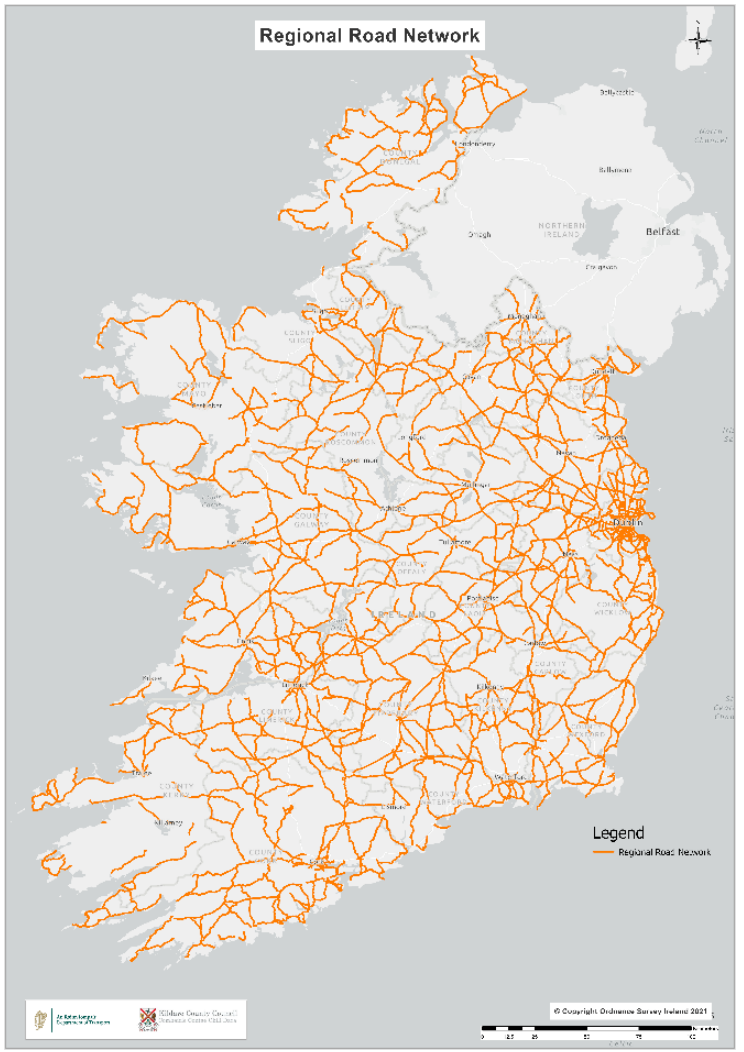
RR NSA

Presentation Outline

- Overview of RR NSA – Round 1
  - Phase I
    - Methodology & next steps
  - Phase II
    - Process Overview
- National implementation
- Next Steps



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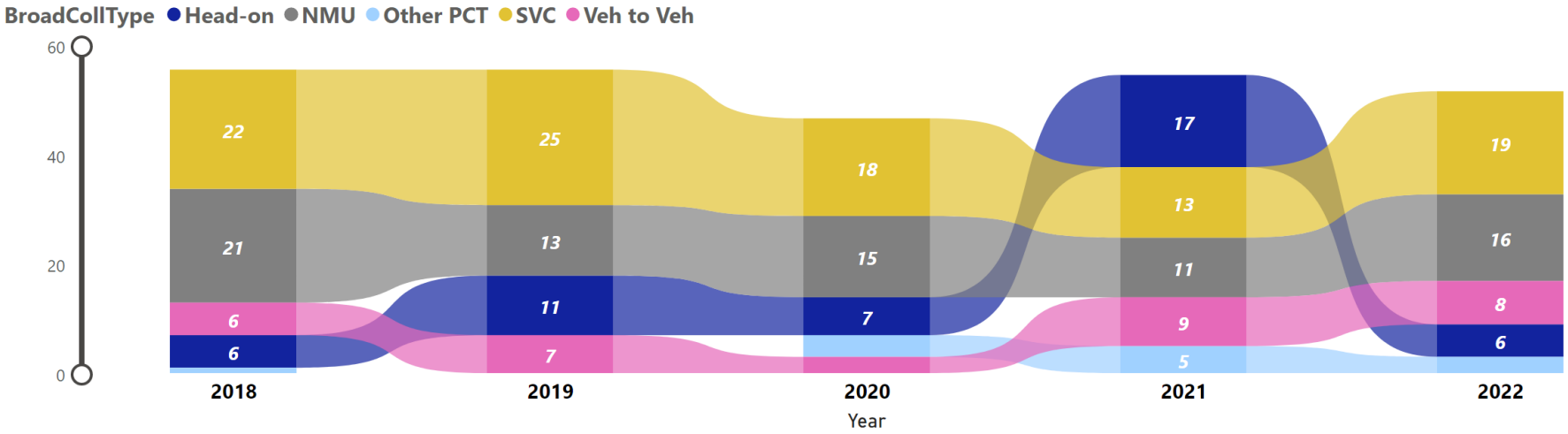
Collision Trends Reg Rd 2018 - 2022

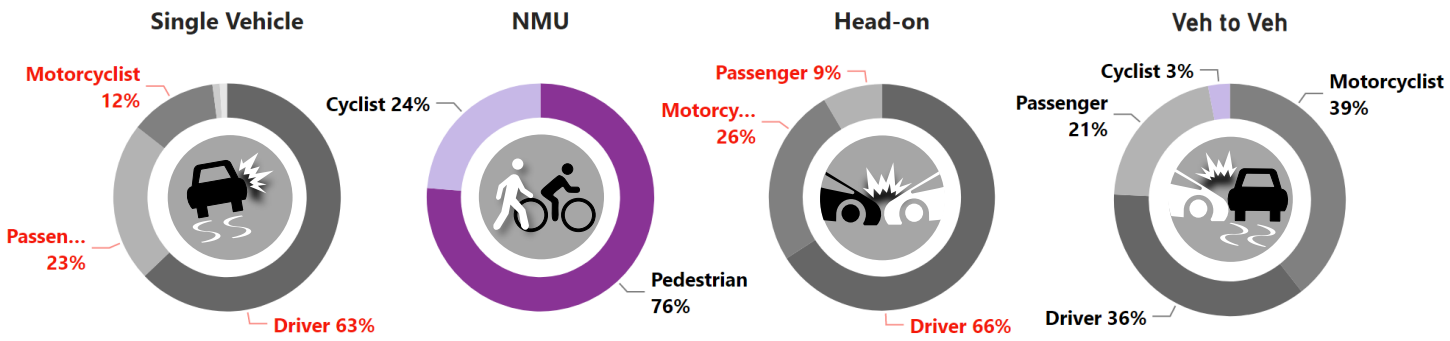
RR NSA

Fatal Injuries on Regional Rd 2018 - 2022

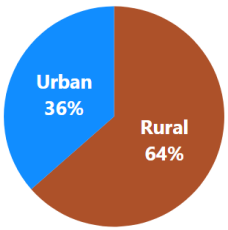
Fatal Count by Year and BroadCollType



% Fatalities by BroadCollType & role



Urban / Rural SL



TII
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

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County and City Management Association

RR NSA

Why?

- To improve road safety & make informed decisions about road safety investment
- To align with RSS 2021-2030 – Vision Zero
- Identify locations for safety improvement works - *Action 51*
- Identify collision trends - *Action 52*
- Align with Public spending code

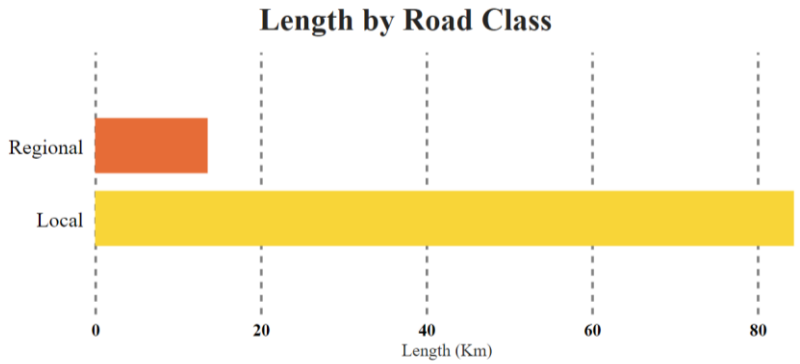
2. Support Actions

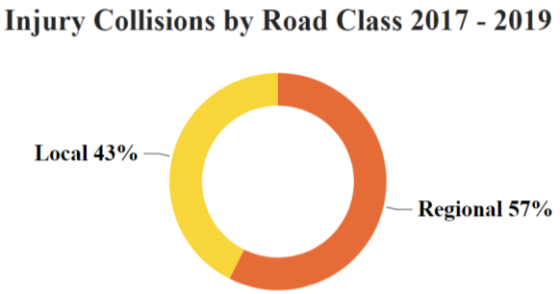
Safe System priority intervention area: safe roads and roadsides

Action No.	Action	Lead Department or Agency	Responsibility	Due Date	Support Department or Agency
51.	Develop a Network Safety Analysis for the regional road network, which will assist identification of sections of regional roads with the highest risk of fatal or serious injury.	Department of Transport	Principal	Q4 2022	CCMA / LA's
52.	Develop a Network Safety Analysis (Stage 2) for the regional road network, which will include the design and prioritisation of remedial works for sections of regional roads with the highest risk of fatal or serious injury.	CCMA / LA's, Department of Transport	LA Chief Executive, DoT Principal	Ongoing to Q4 2025	-

How?

- TII system adapted to RR network
  - Reg Rds only
- Two phased approach RR NSA
  - Phase I – a spatial analysis
    - Identifies Locations of Interest (Loi)
  - Phase II – an in-depth collision analysis

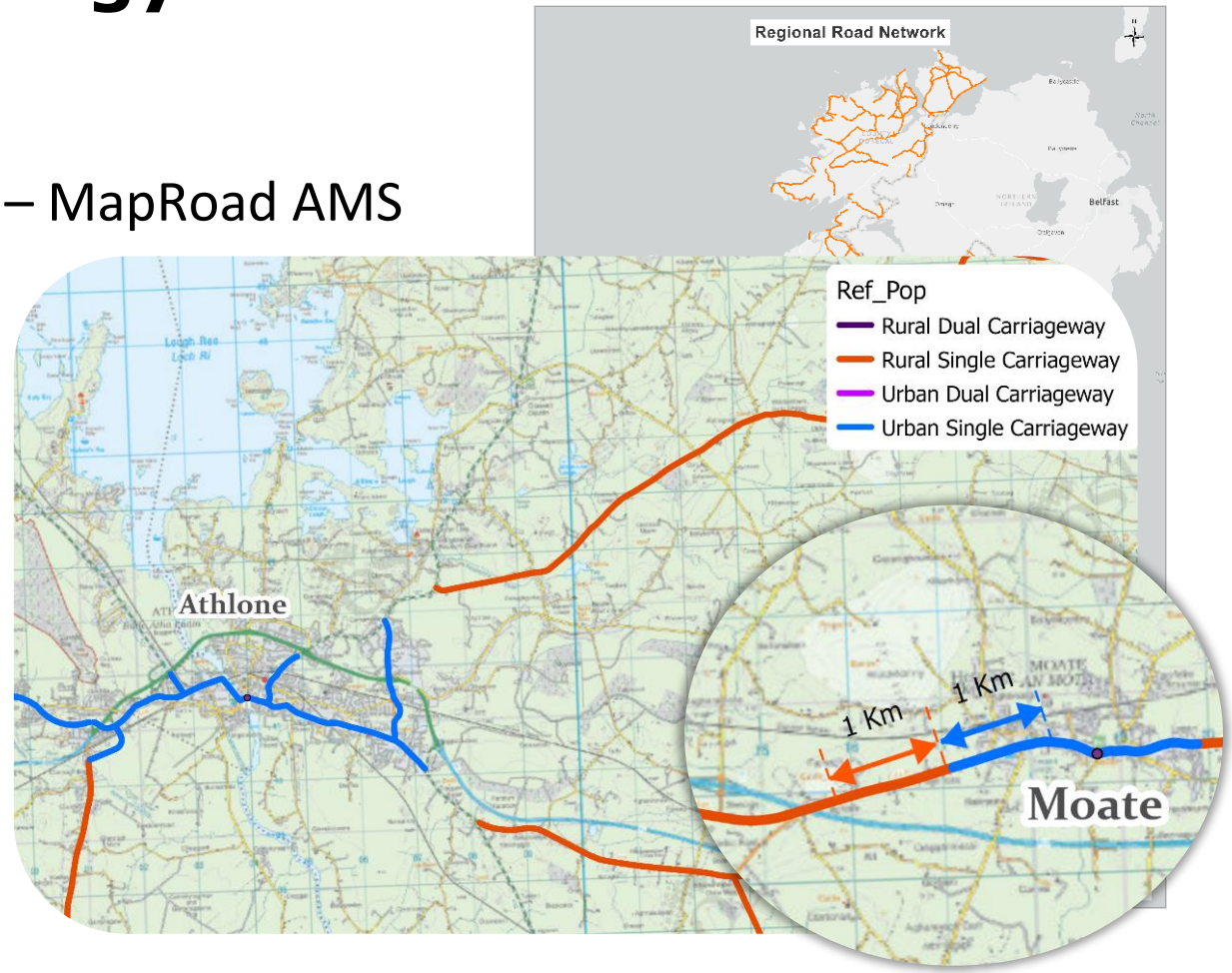




RR NSA

Phase I - methodology

- Generate Base Model
  - Regional Rd centreline – MapRoad AMS
  - Reference Populations
    - c/way type & setting
    - 1km sections
  - Traffic Flow X
    - Noise Action
    - Census Population



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Phase I - methodology

- Collision Frequency
  - Round 1 – 3 year analysis period
  - RSA Collision Data 2017-2019
    - Injury CF - 1km section
    - Average injury CF – RP

- Location of interest (Loi) criteria
  - 3 or more injury collisions

    and
  - ≥Twice above the average injury collision frequency of its RP

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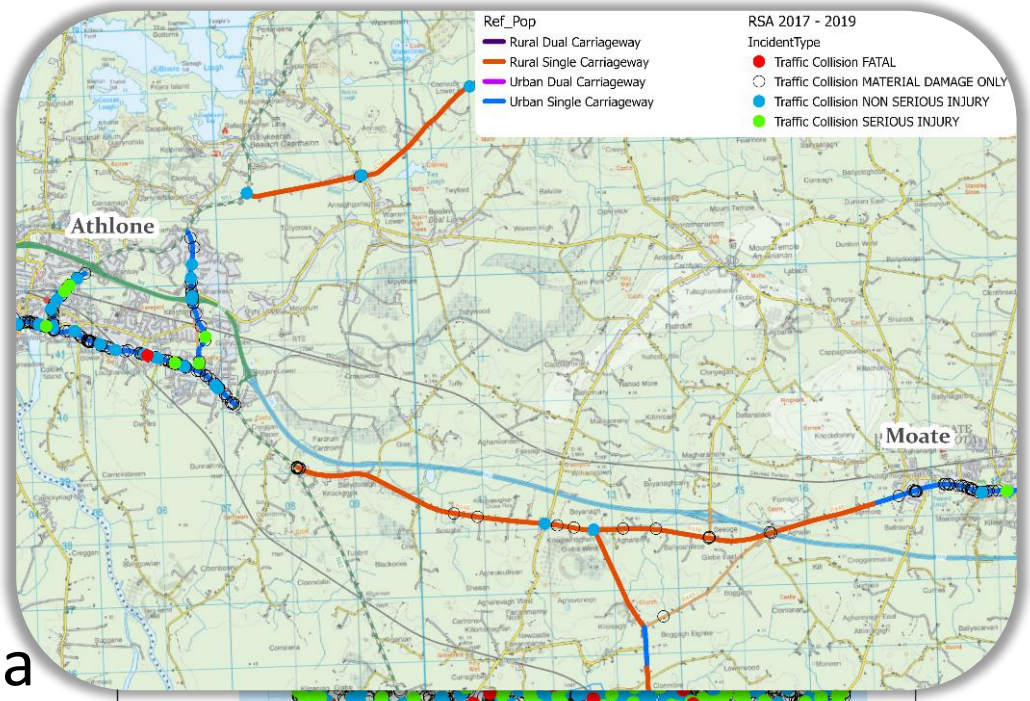
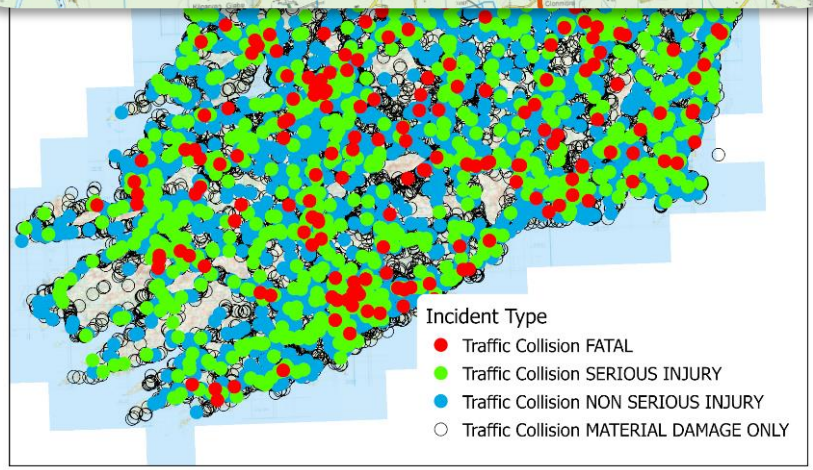
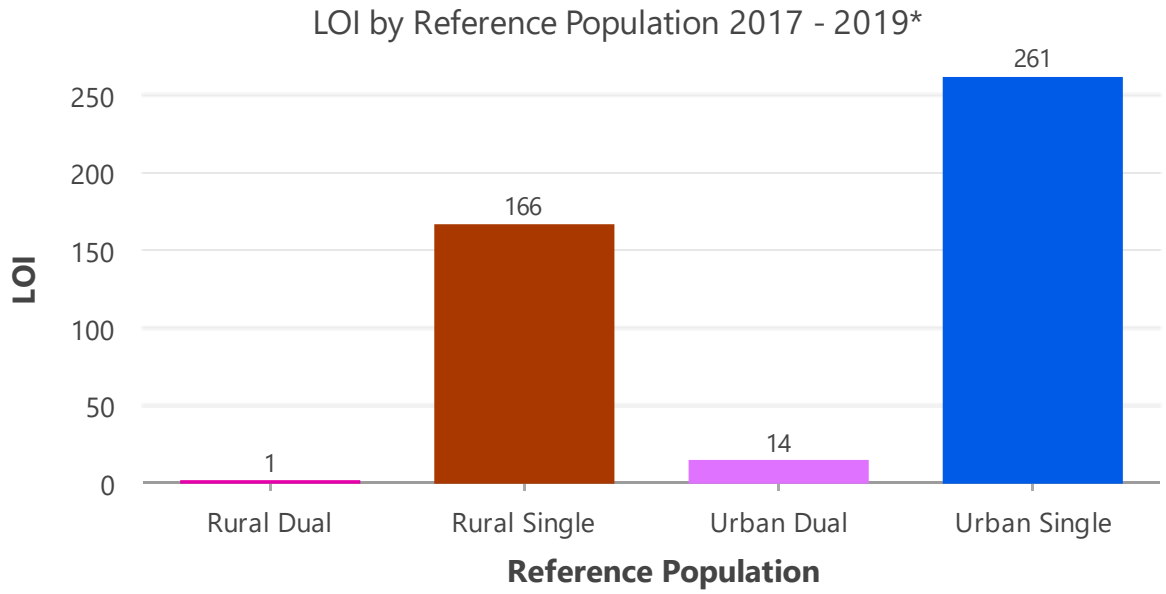


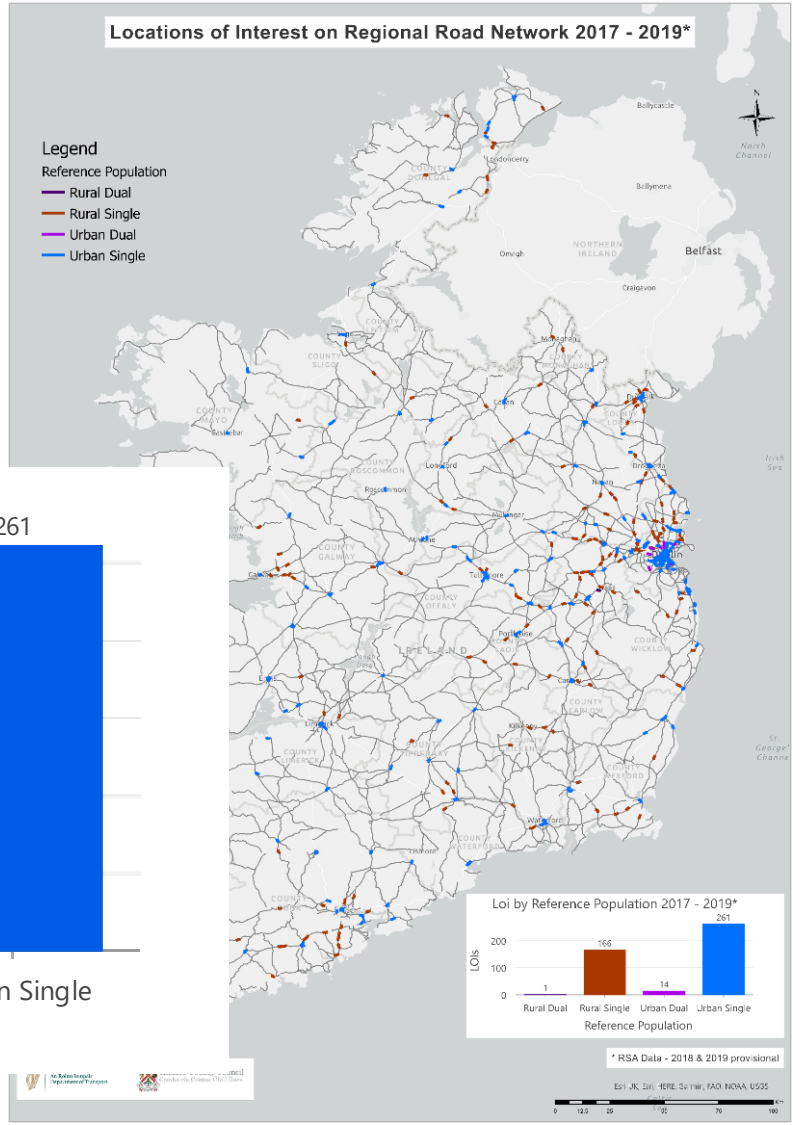


RR NSA

Phase I – Round 1 RR NSA

442 Loi *(3.4%)*





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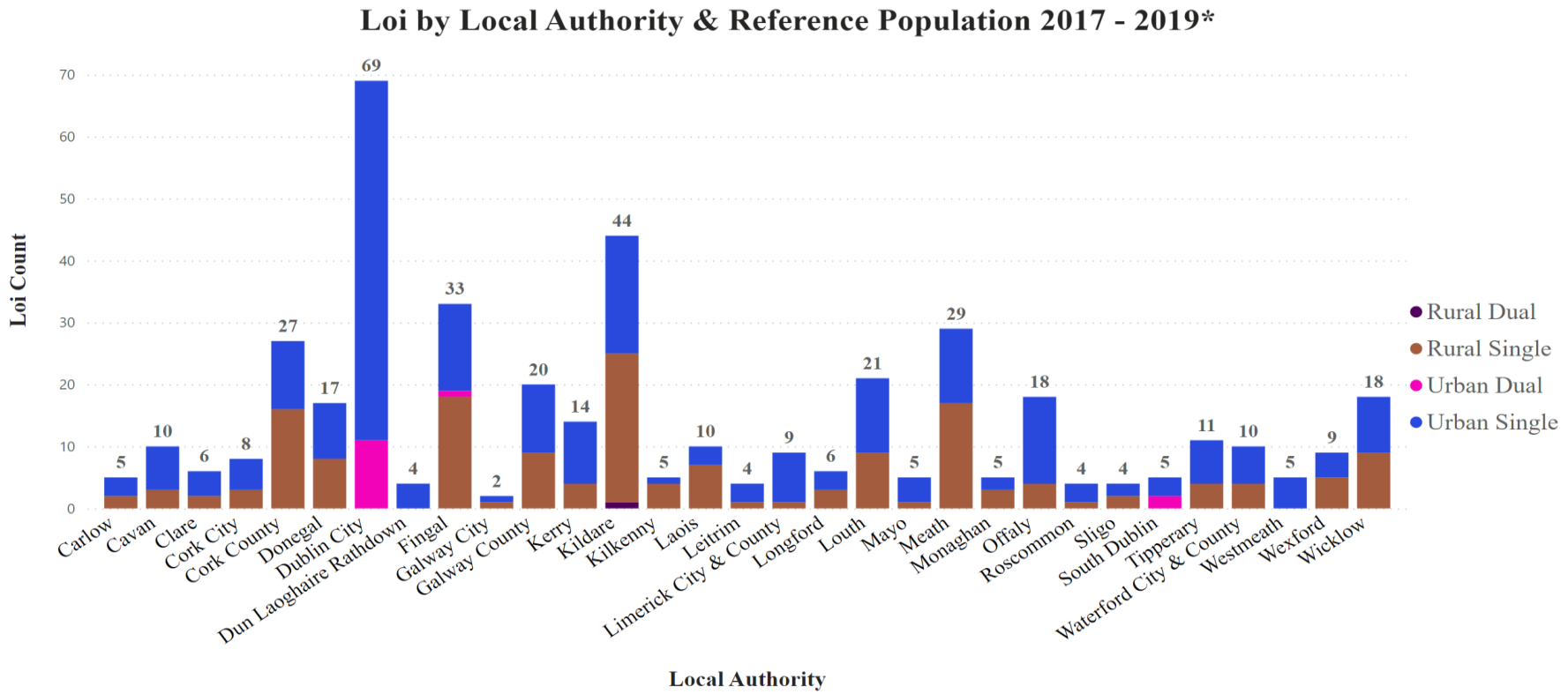
RR NSA

Phase I

442 Locations of interest



*RSA data - 2018 & 2019 provisional for Round 1 RR NSA

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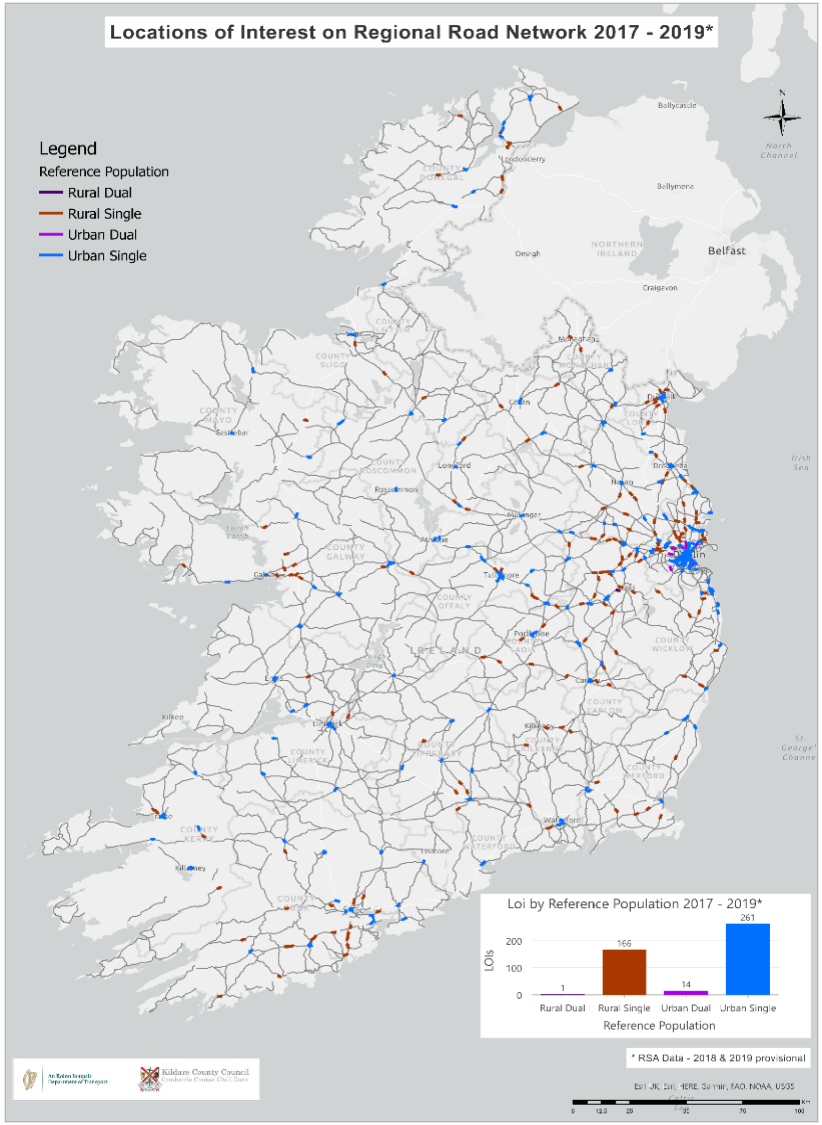
Phase I – next steps

- Round 2 Preparation
  - Update base model
  - Collision rate analysis - viable?
    - TMU, LA, IDASO, MapRoad AMS
  - Collision data - available?

- Local Road NSA
  - Base model NSA v's cluster analysis

RR NSA



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RR NSA

Phase II

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Phase II – Recap

RR NSA

- Provide unbiased, factually based safety data to Local Authorities to aid prioritisation of safety improvement works
- Target Investment on the Regional Road Network
- Commenced a pilot study Q1 2022
- Focused on rural Loi

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Phase II – NSA Process Overview

- Compilation of spreadsheets and mapping for each Loi
- Validation of Loi
- In-depth analysis of each collision – rural Loi
- Identify if Loi has treatable engineering solution
- Site visit for each Loi – ubipix video
- Preparation of Loi report for issue to Local Authorities
- Review meeting with Local Authority staff – as required

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National Implementation – Round 1

RR NSA

- Divided into Round 1a and 1b
- In-depth analysis for rural Loi
- Round 1a issued September 2022 by DoT
- Provide support to Local Authorities with Loi funding applications as required
- Provide support to the DoT for funding applications received

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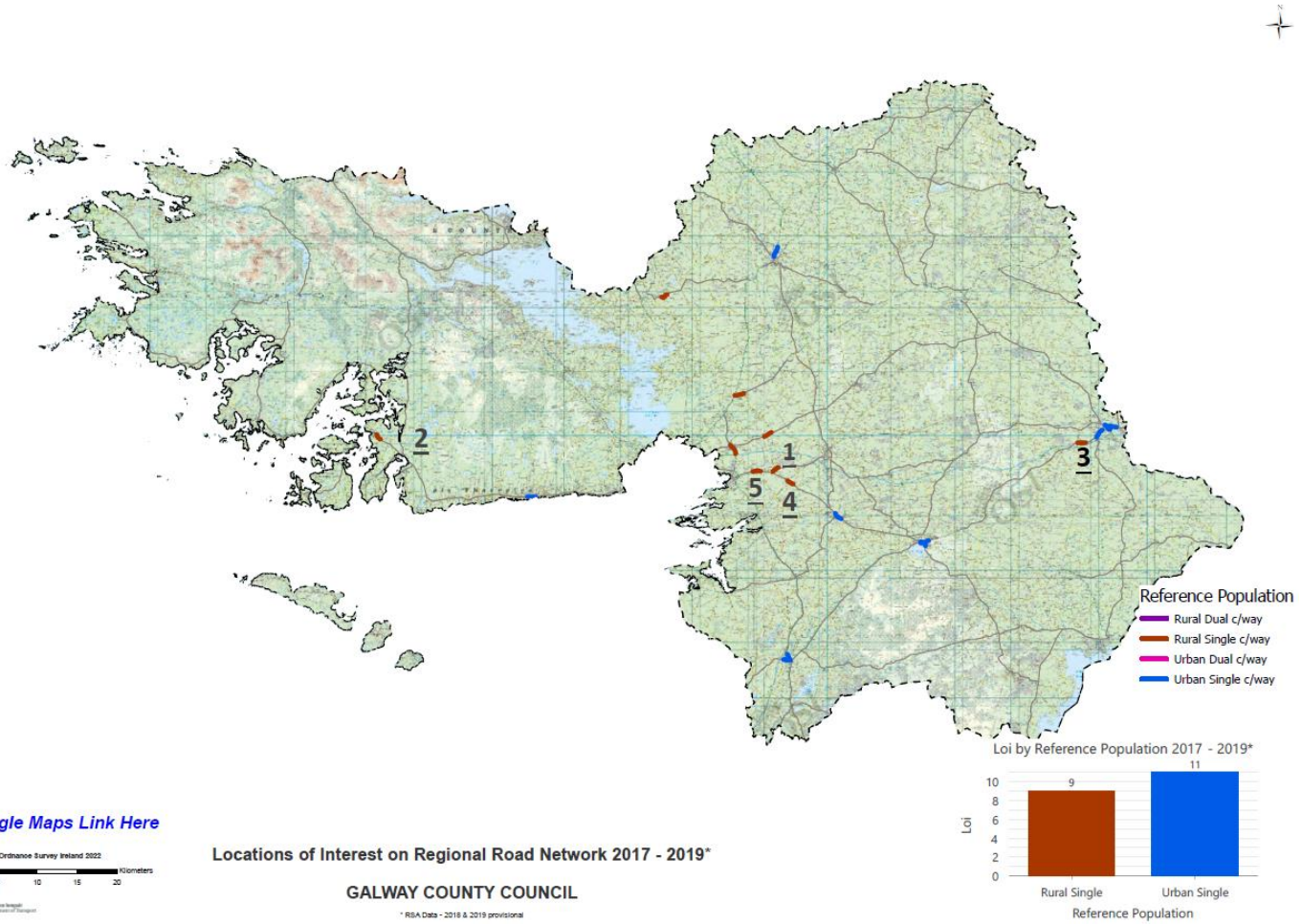
Round 1 Reports

RR NSA

- Loi location map issued for each county



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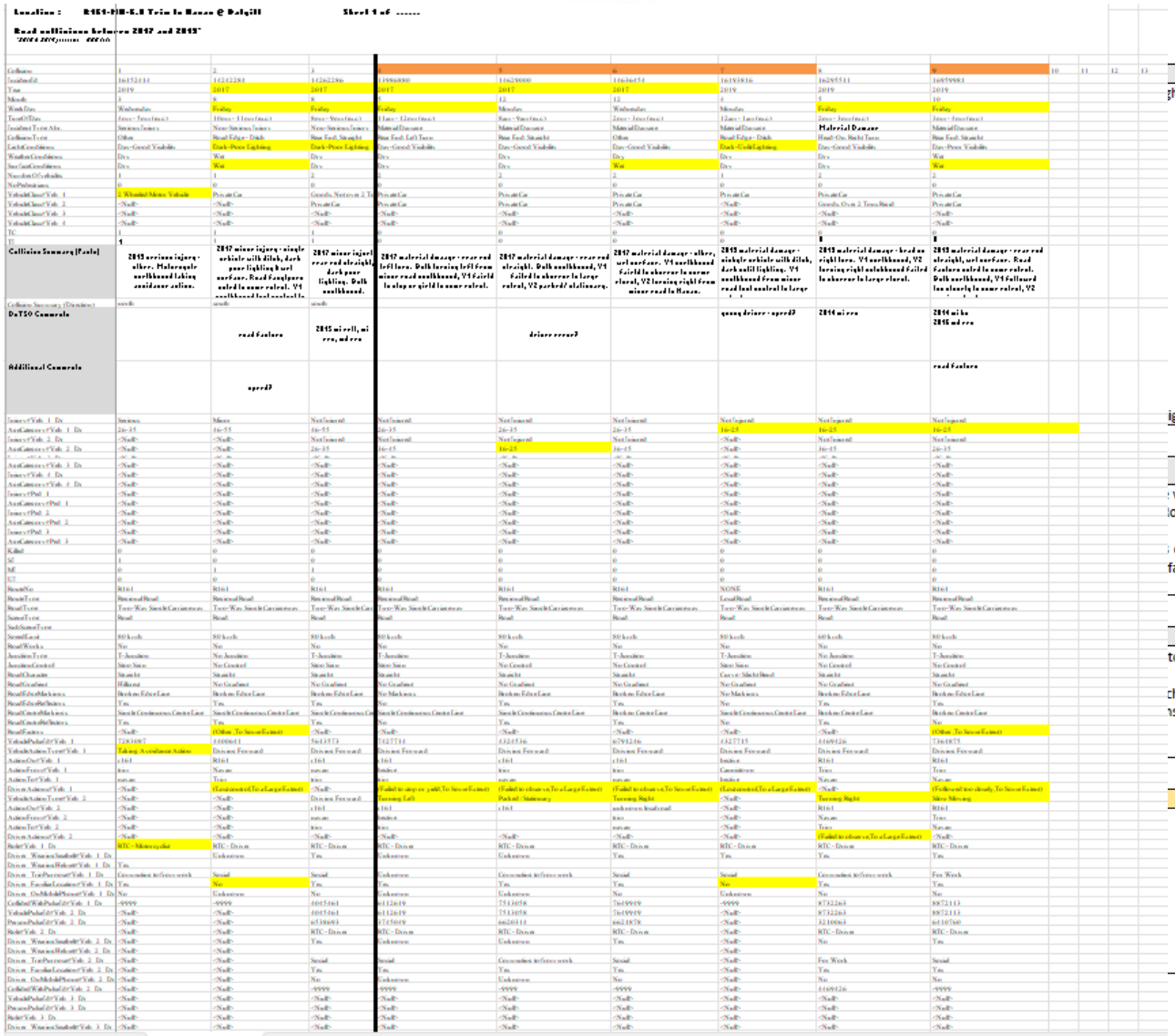
Round 1 Rural Reports

RR NSA



R159-MH-3.0

ghout the section under consideration. 2 clusters

ight. 2015 material damage – head on.

vehicle collisions with a ditch, all noting wet surface
oad factors were noted in 50% of collisions at this

of control for northbound traffic with road factors
face. 40% noted collisions in dark.

to the bend may lead to ponding water in bad

ch on bend with safety barriers.
ns to guide drivers around bend and large advance

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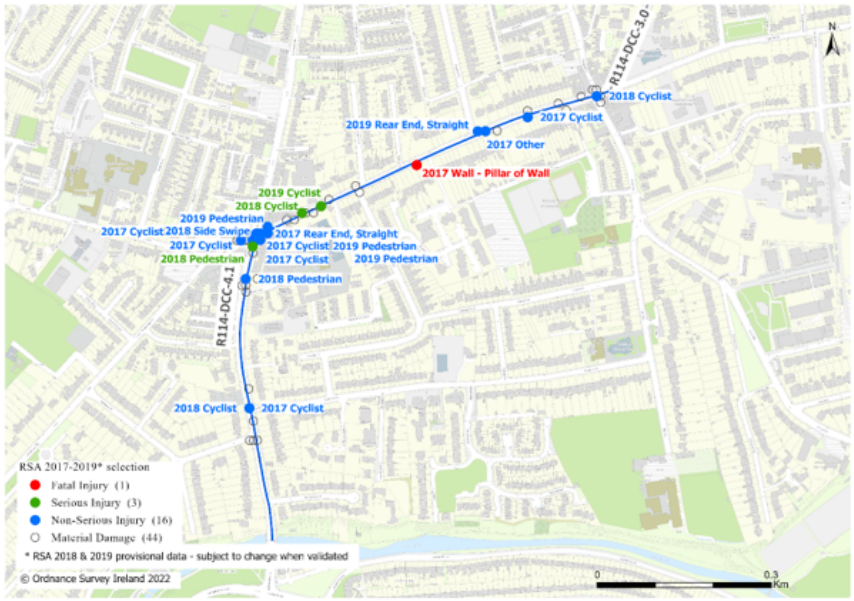
Round 1 Urban Reports

RR NSA

Site Ref No	Site Location	Analysis period
R114-DCC-4.1	Rathfarnham Road Google Maps	2017-2019[1]



Loi [2]	Repeat Loi	AADT [3]	AADT Source	Site Collision Rate [3]	Speed Limit [4]
Yes	n/a	Unknown	n/a	n/a	50 kmh

Injury Collisions

VRU	Head On	SV	Veh to Veh	Wet Rd	Dark
19	0	1	4	8	5

Material Damage Collisions

VRU	Head On	SV	Veh to Veh	Wet Rd	Dark
4	3	2	36	10	16

[1] *RSA Data for some years are provisional (2018 & 2019), therefore these figures are correct as of October 2021 but may be subject to change in the future.*

[2] *Loi is based on collision frequency only for round 1 RR NSA*

[3] *AADT represents middle year of analysis, 2018. Site collision rate expressed as collisions per one hundred million vehicle km of travel.*

[4] *Speed Limit is the posted speed limit for the majority of Loi length in 2020*

R114-DCC-4.1

Site Observations

Urban Single carriageway.
Site visit not undertaken.

Collision Summary

20 injury and 44 material damage collisions dispersed throughout the section under consideration with a cluster noted at the junction with R137.
One fatal injury was noted – single vehicle collision with a wall.
All serious injuries involved VRU.
5 pedestrian and 11 cyclist injury collisions and 3 cyclist material damage collisions were noted.
Cyclist was the predominant injury collision type with side swipe and rear end the most common material damage types.
Most collisions occurred during weekdays.
Pedestrian actions noted in 3 pedestrian injury collisions including failure to observe.
Driver actions noted in 6 and cyclist actions noted in 3 cyclist injury collisions including failure to observe.

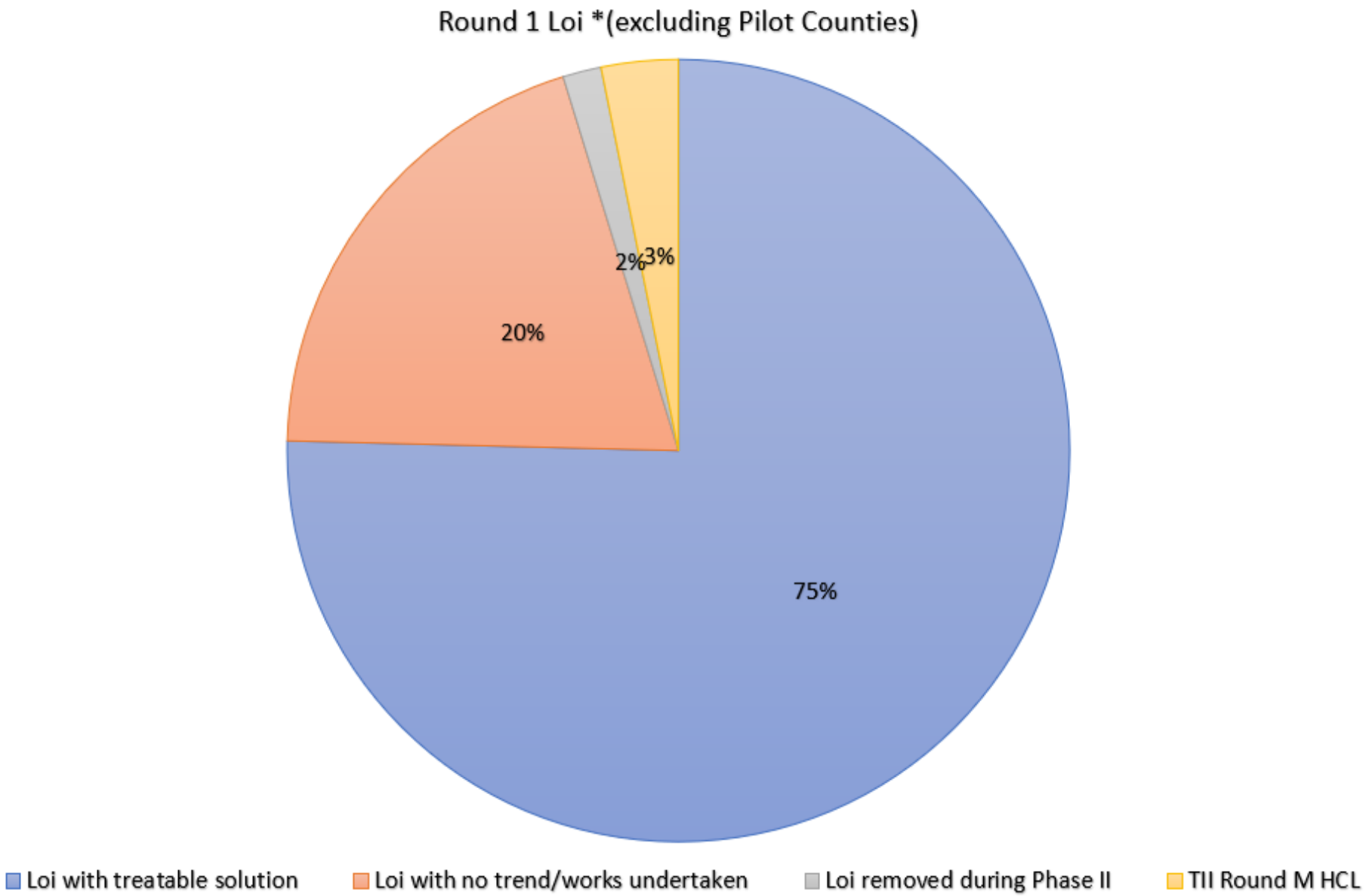
Collision Trends and Observations

In-depth collision analysis not undertaken at urban Loi for Round 1 analysis.

General Comments

To be circulated to relevant department section/s dealing with urban scheme/renewal projects.
A more in-depth analysis can be considered if requested by relevant section to support urban projects.

LA comments/feedback


Round 1 Loi *(excluding Pilot Counties)
2%
3%
20%
75%
Loi with treatable solution
Loi with no trend/works undertaken
Loi removed during Phase II
TII Round M HCL

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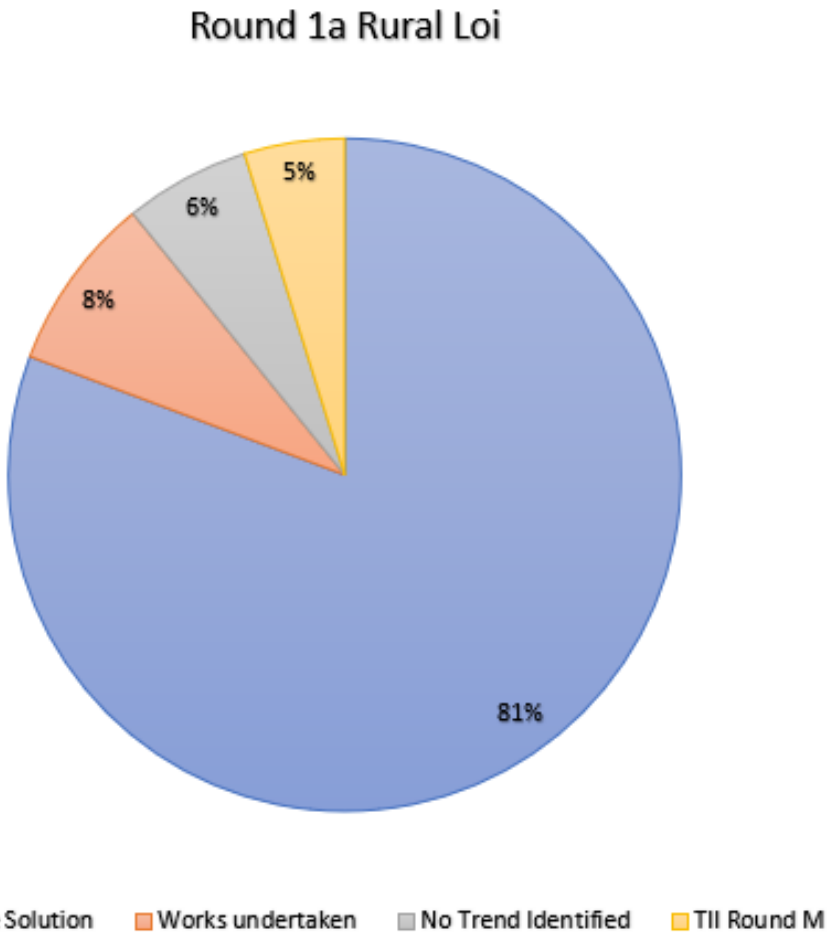
Round 1a Results

RR NSA

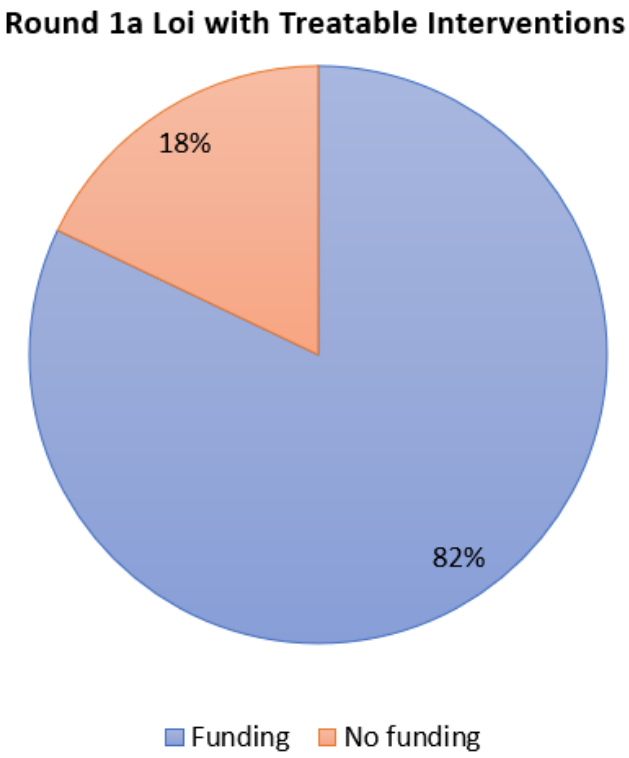
- Round 1a - 83 rural Loi reports issued to Local Authorities
- 67 had treatable solutions



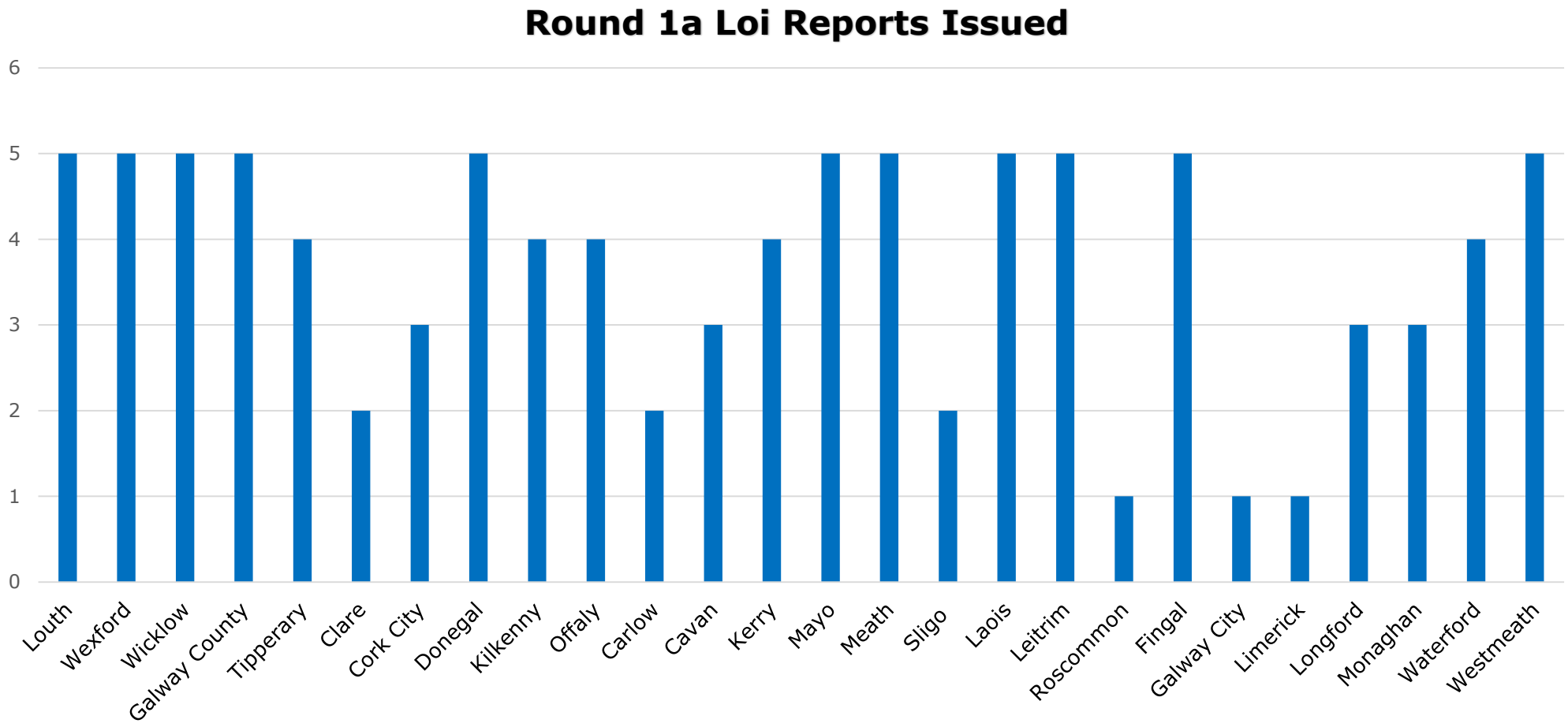
Round 1a Results

RR NSA

- 82% of these were used for Low-Cost Safety Improvement Works funding applications 2023



- 73% of Local Authorities that received Loi Report in Round 1a applied for funding


Round 1a Loi Reports Issued
6
5
4
3
2
1
0
Louth
Wexford
Wicklow
Galway County
Tipperary
Clare
Cork City
Donegal
Kilkenny
Offaly
Carlow
Cavan
Kerry
Mayo
Meath
Sligo
Laois
Leitrim
Roscommon
Fingal
Galway City
Limerick
Longford
Monaghan
Waterford
Westmeath

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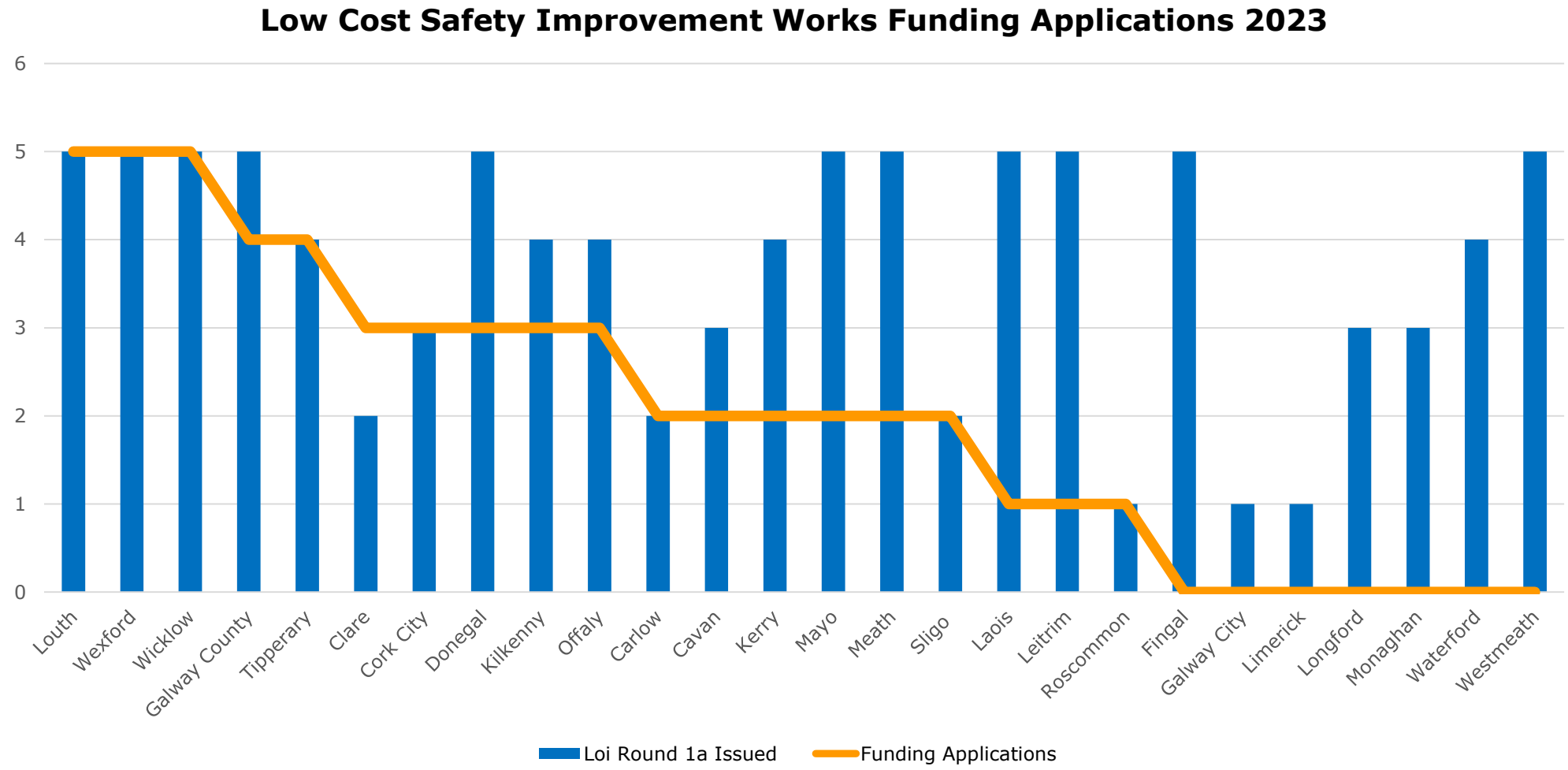
County and City Management Association



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Round 1b

RR NSA

- Currently progressing Round 1b
- Urban Loi pilot study
- Locations inside 30/50/60 km/h speed limits considered urbans
- Urbans divided by population bands
- 5 Different bands used

Population Band
0-1000
1001-2500
2501-5000
5001-7500
7501-10000

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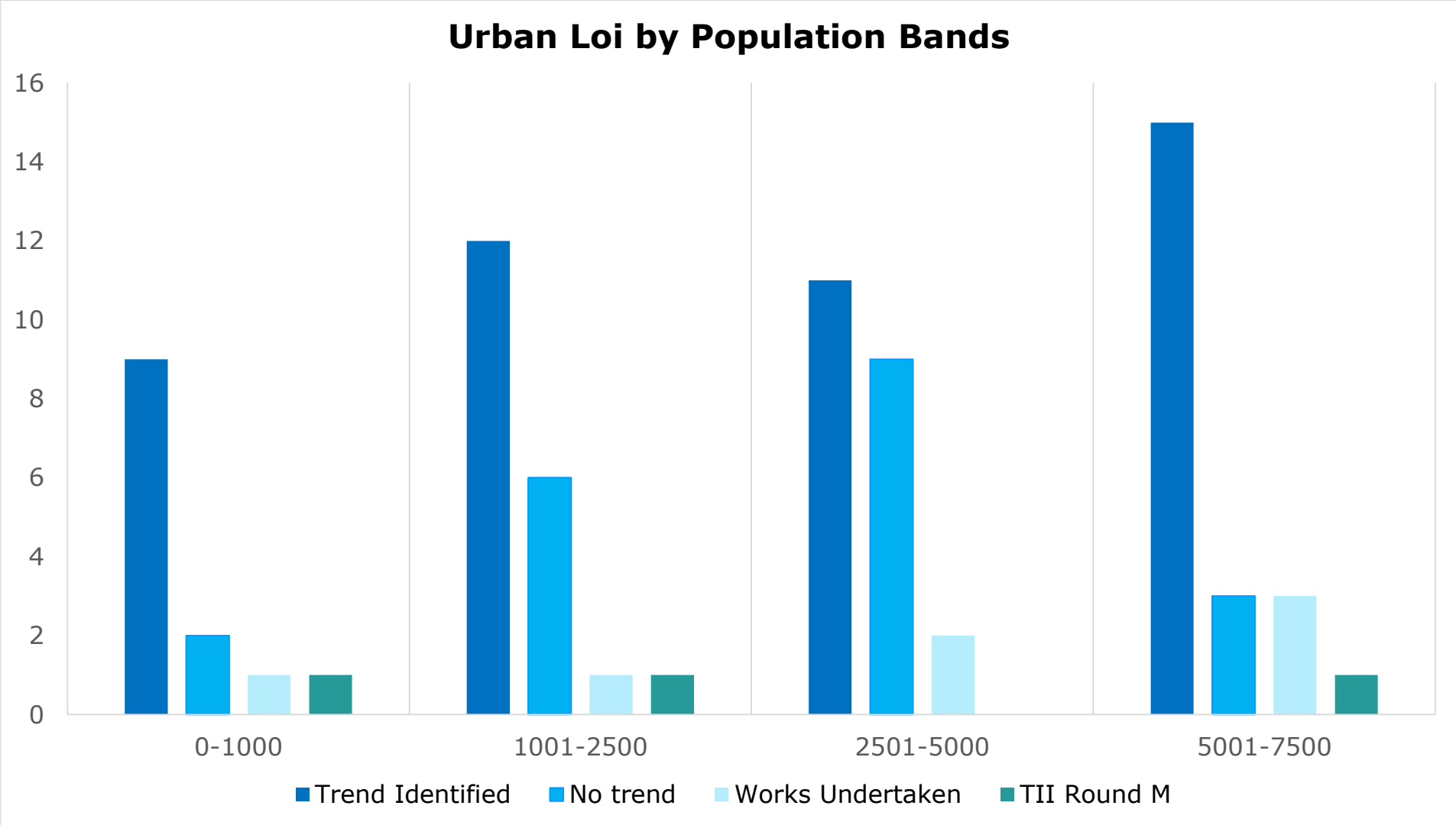
Round 1b

RR NSA



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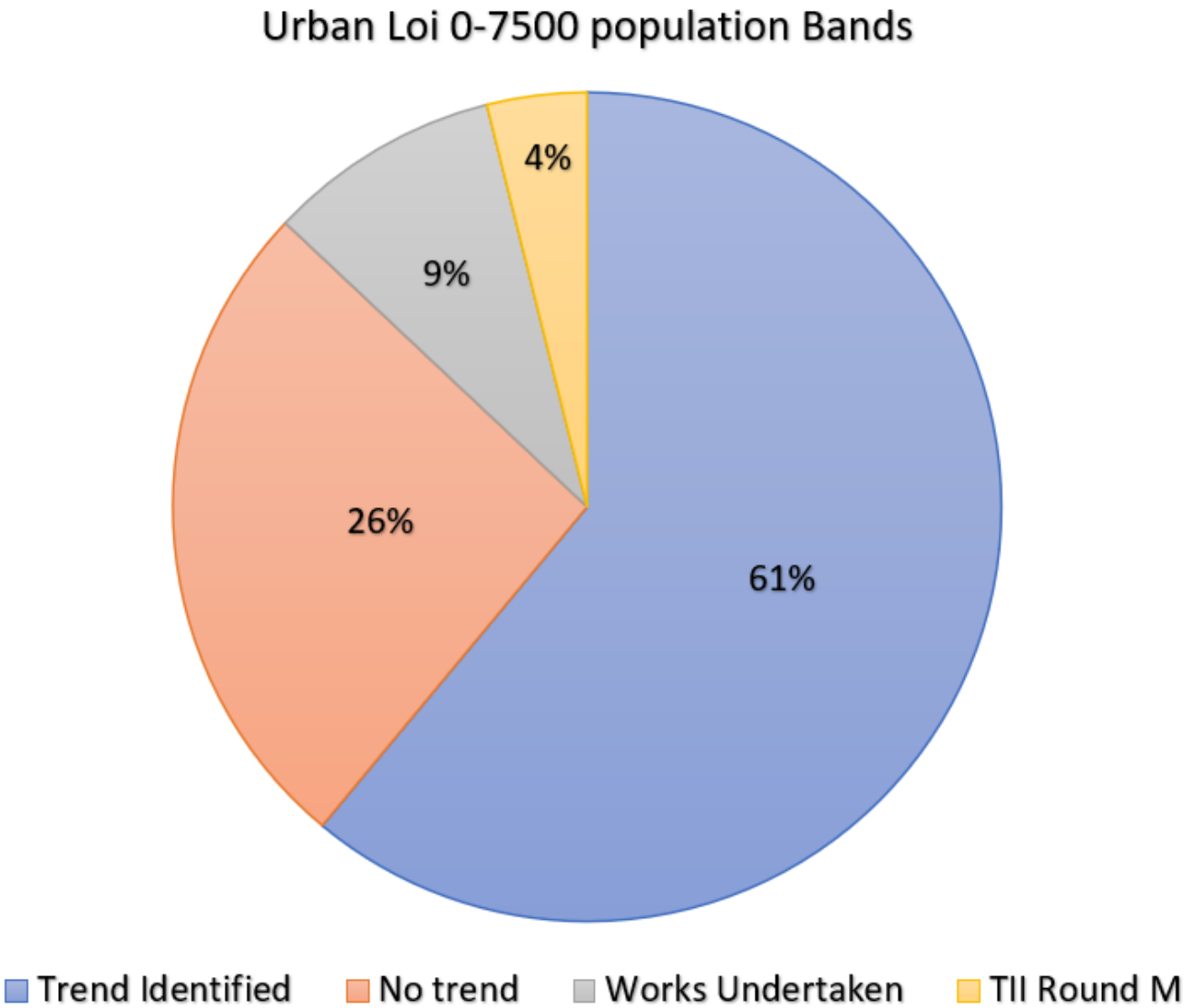
Round 1b

RR NSA



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Next Steps

RR NSA

- Process undertaken every 2 years
- Round 1 LR NSA – pilot study to adapt the process to suit the local road network
- Round 2 RR NSA – 5 years of data
- Inclusion of urban Loi up to 10,000 population bands – cluster locations only.
- Review of Round 1 Loi applications that received funding 2023

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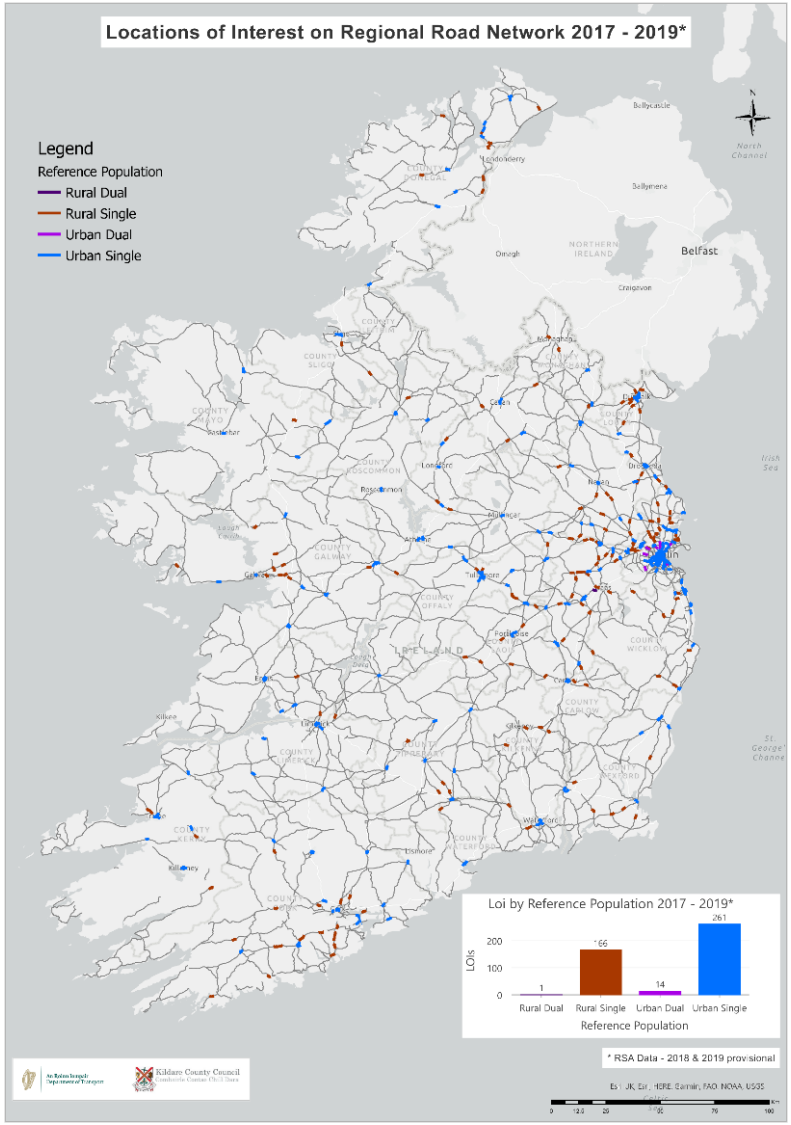
RR NSA

Thank you



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RSTG Conference 2023 9th May - Day 1

Networking\Exhibition & Coffee Break

We will resume at 11.45 am

Session 2- Road Asset Management

Chair Dominic Mullaney

1st Capturing & Managing MapRoad Public Lighting (MPL) Infrastructure to Support the PLEEP PL Contracts-Henry Spratt & Michael Foley
2nd Road Openings - delivery of government strategies while protecting the road asset-John Horgan
3rd Capturing & Managing Pedestrian and Cycling (Active Travel) Infrastructure on MapRoad AMS-Brian Burke & Colin O'Sullivan

Join the Q&A session at Slido.com and enter 1685372

Or via the QR Code