

Henry Spratt
Road Management Office



Regional Road Network Survey Analysis



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Department of Transport



RSTG Annual
Conference
2026
14TH - 15TH MAY | WHITE'S HOTEL, CO. WEXFORD



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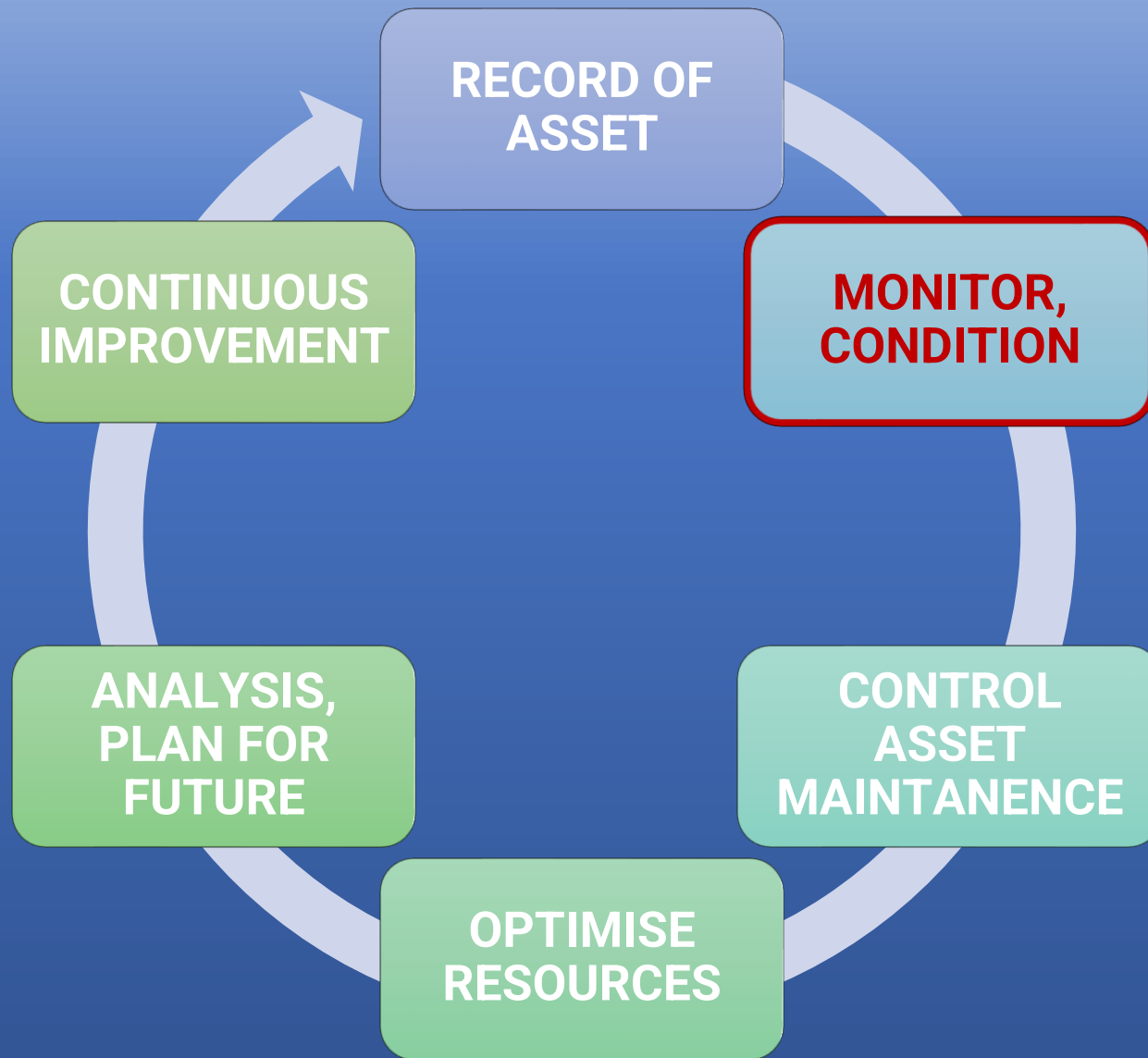


**Operations Manager,
Asset Management Unit / RMO**



Why Asset Management?

The Why?



The What?

Presentation on National High-Level Returns



IRI



RUT



SCRIM



PSCI



Cracking and
Ravelling Intensity



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Regional Roads Condition Study 2024/2025

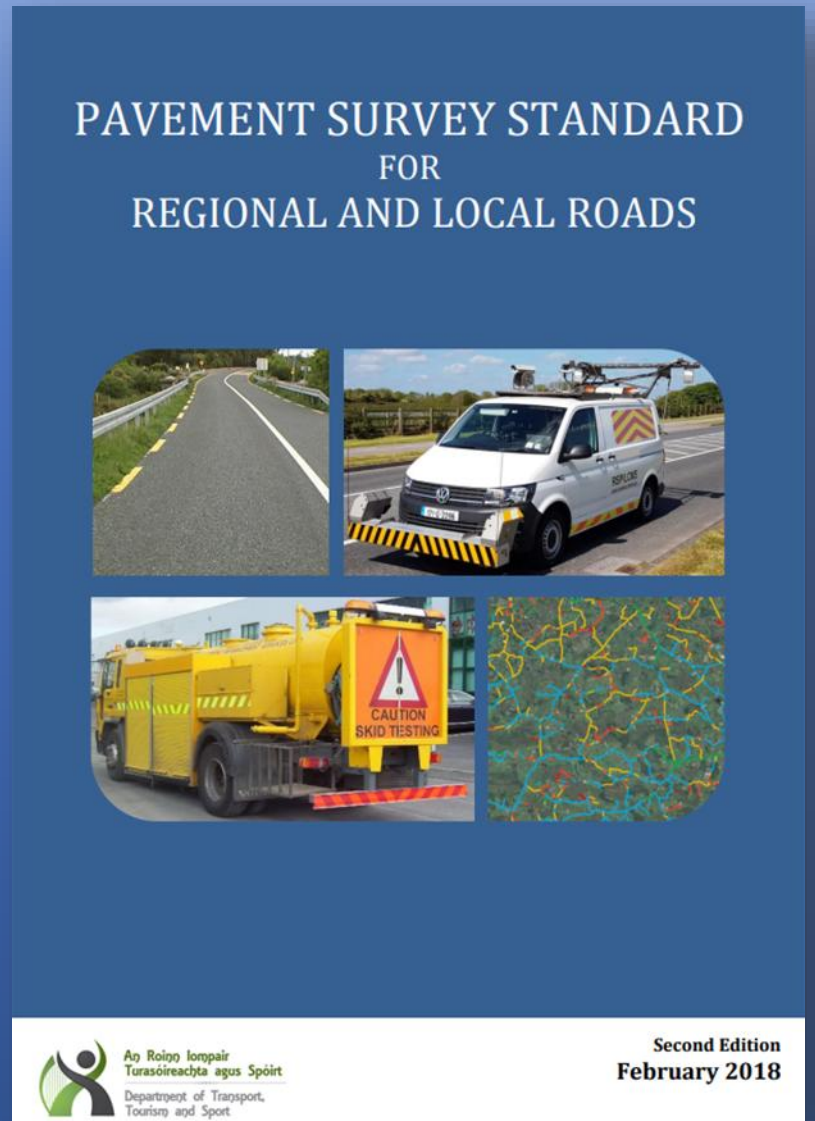
Pavement Condition Study Report

(Draft A04)

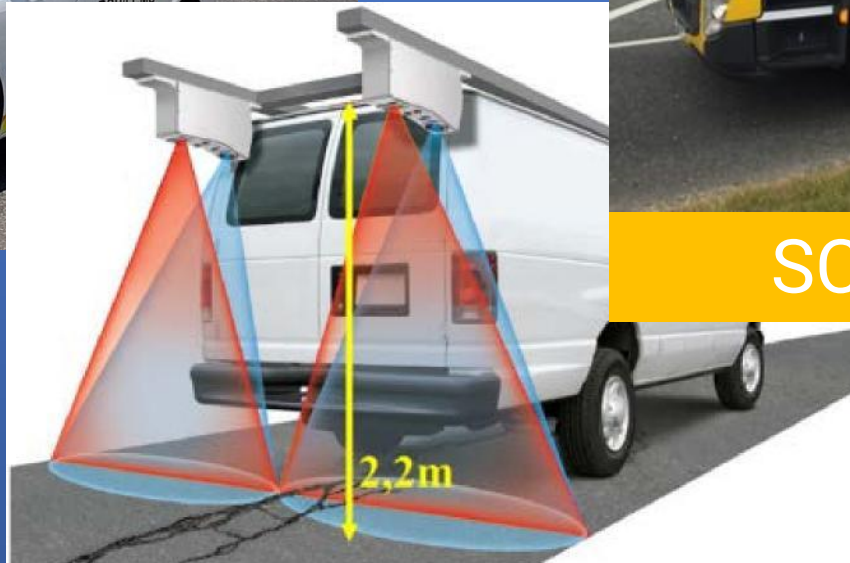
Table 3. of the Pavement Survey Standard

Complete regional road network survey every 6 years.

Presentation will compare 2011, 2018 and 2024 studies



RSP VIDEO SYSTEM



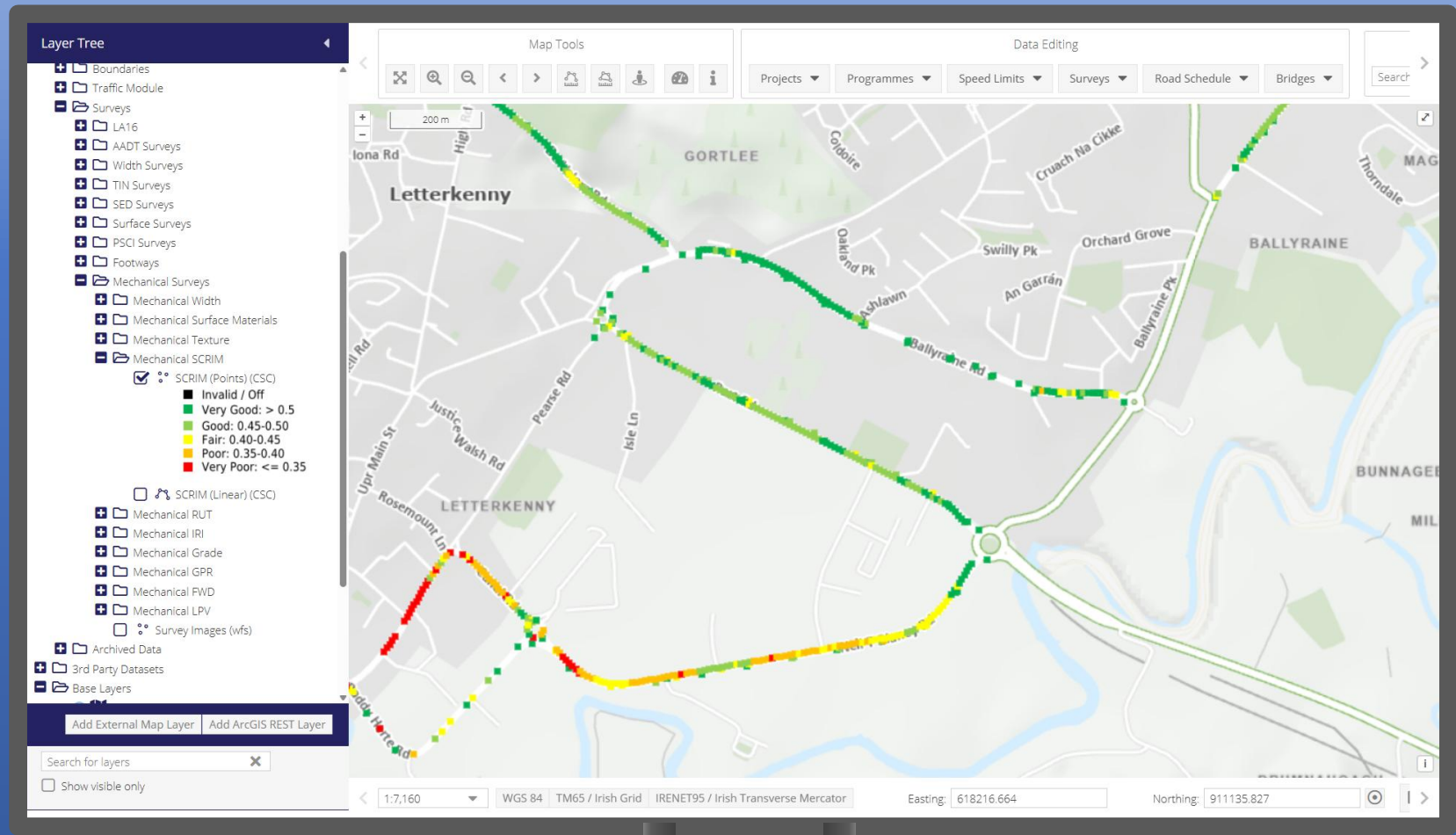
Laser Crack Measurement System (LCMS)



SCRIM MACHINE



- **IRI – International Roughness Index**
- **SCRIM (Characteristic SRIM Coefficient)**
- **Longitudinal Profile Variance**
- **Surface Texture Depth**
- **PSCI (Pavement Surface Condition Index)**



MapRoad Asset Management System



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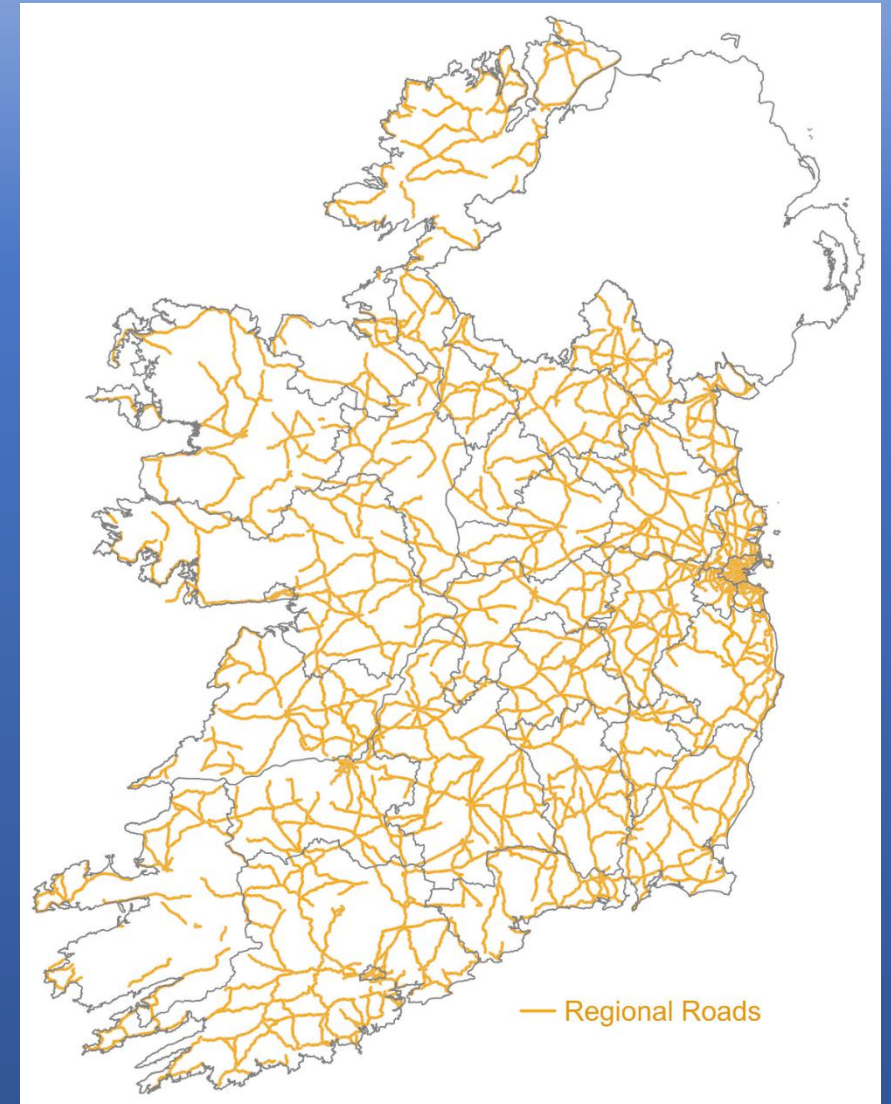


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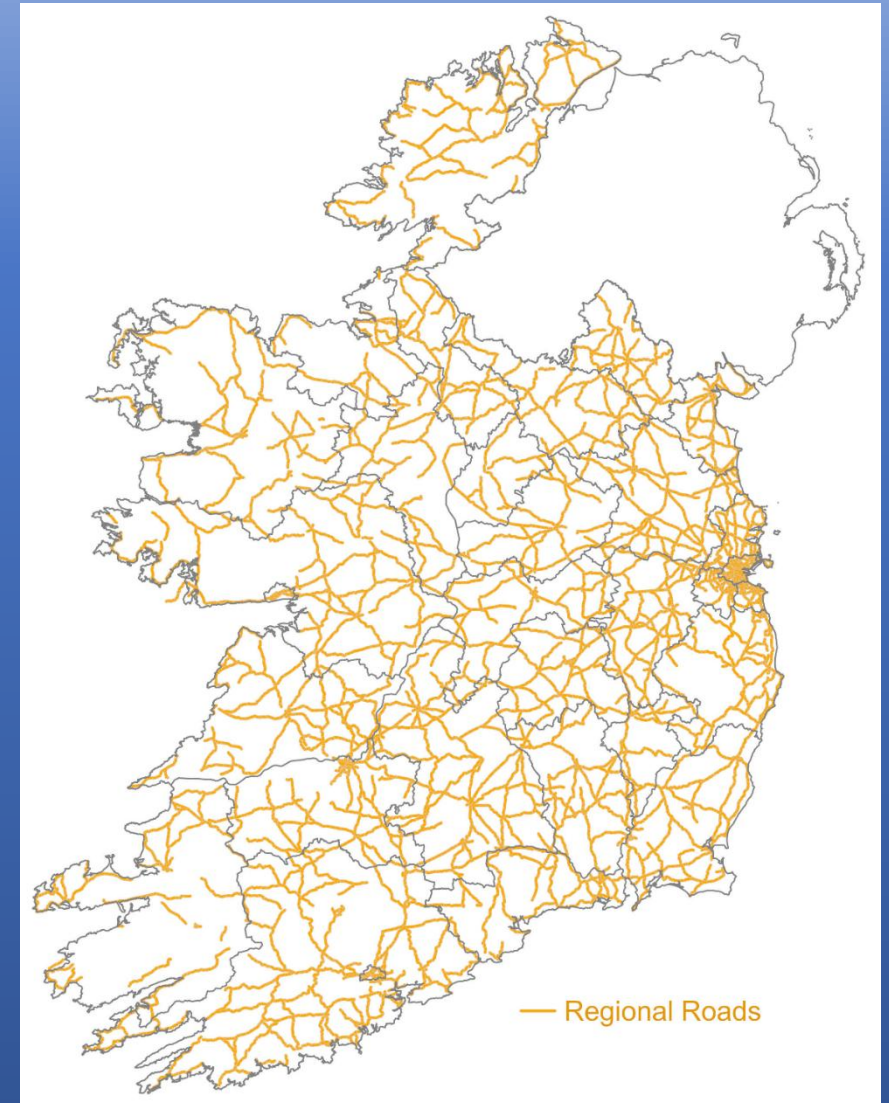
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- Further metrics captured to be included
- Images
- Pavement width
- Bendiness / Curvature Gradient Geometry
- Surface Material Type
- Cracking type, severity, and intensity
- Crossfall / Super-elevation Geometry

- 13,300 centreline kilometres of Regional Roadway.
- 700 routes
- 15% of the Network



- 1188 km are Former National roads.
- 660 km County Dublin
- 75 km Galway and Cork City
- 1640 km Roads over Peat
- 9650 km Remaining Rural



Width

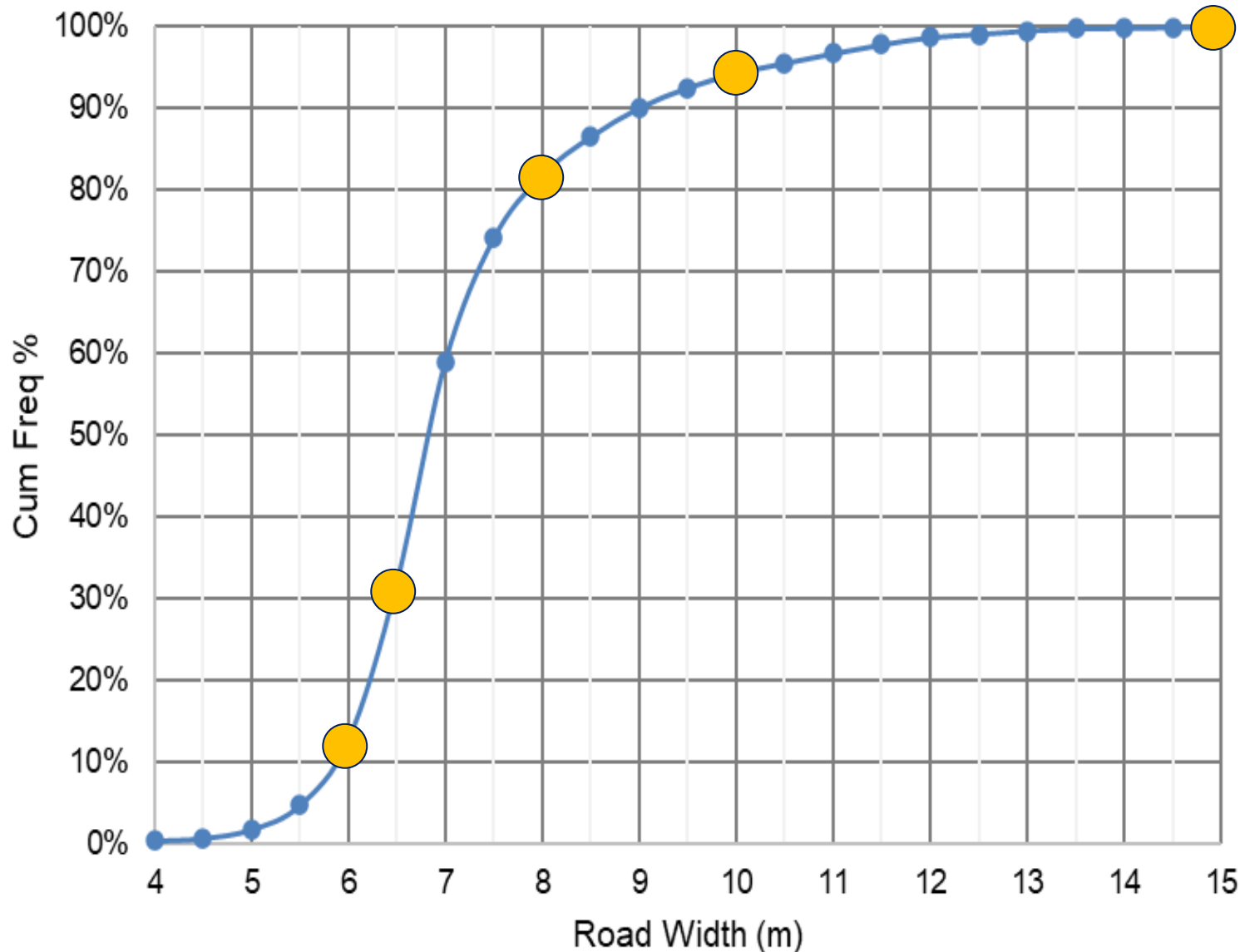
13% < 6m

19% 6m – 6.5m

50% 6.5m – 8m

12% 8m – 10m

6% > 10m





IRI

(International Roughness Index)

Ride Quality





IRI Value (mm/m)	Comfortable Ride Speed	Description
2	over 120 km/h	Very Smooth
4	100 to 120 km/h	Smooth
6	70 to 90 km/h	Perceptible movement
8	50 to 60 km/h	Some Swaying and Wheel Bounce
10	40 to 50 km/h	Significant Swaying
12	30 to 40 km/h	Consistently Rough
14	< 30 km/h	Very Rough

The table is based on ASTM standard E1926-98, Standard Practice for Computing International Roughness Index of Roads from Longitudinal Profile Measurements.



2024

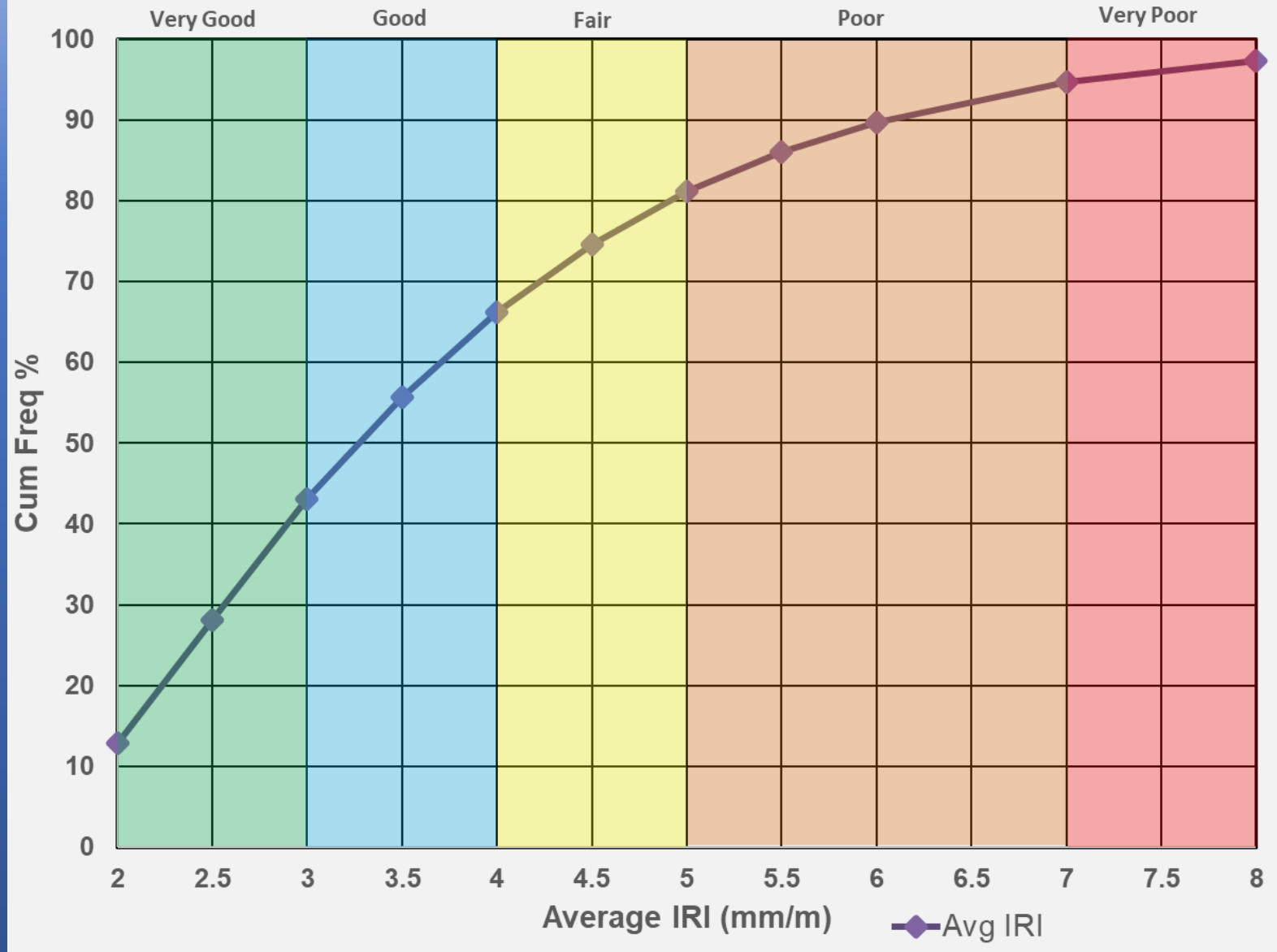
V. Good < 3 mm/m

Good 3 – 4 mm/m

Fair 4 – 5 mm/m

Poor 5 – 7 mm/m

V. Poor > 7 mm/m

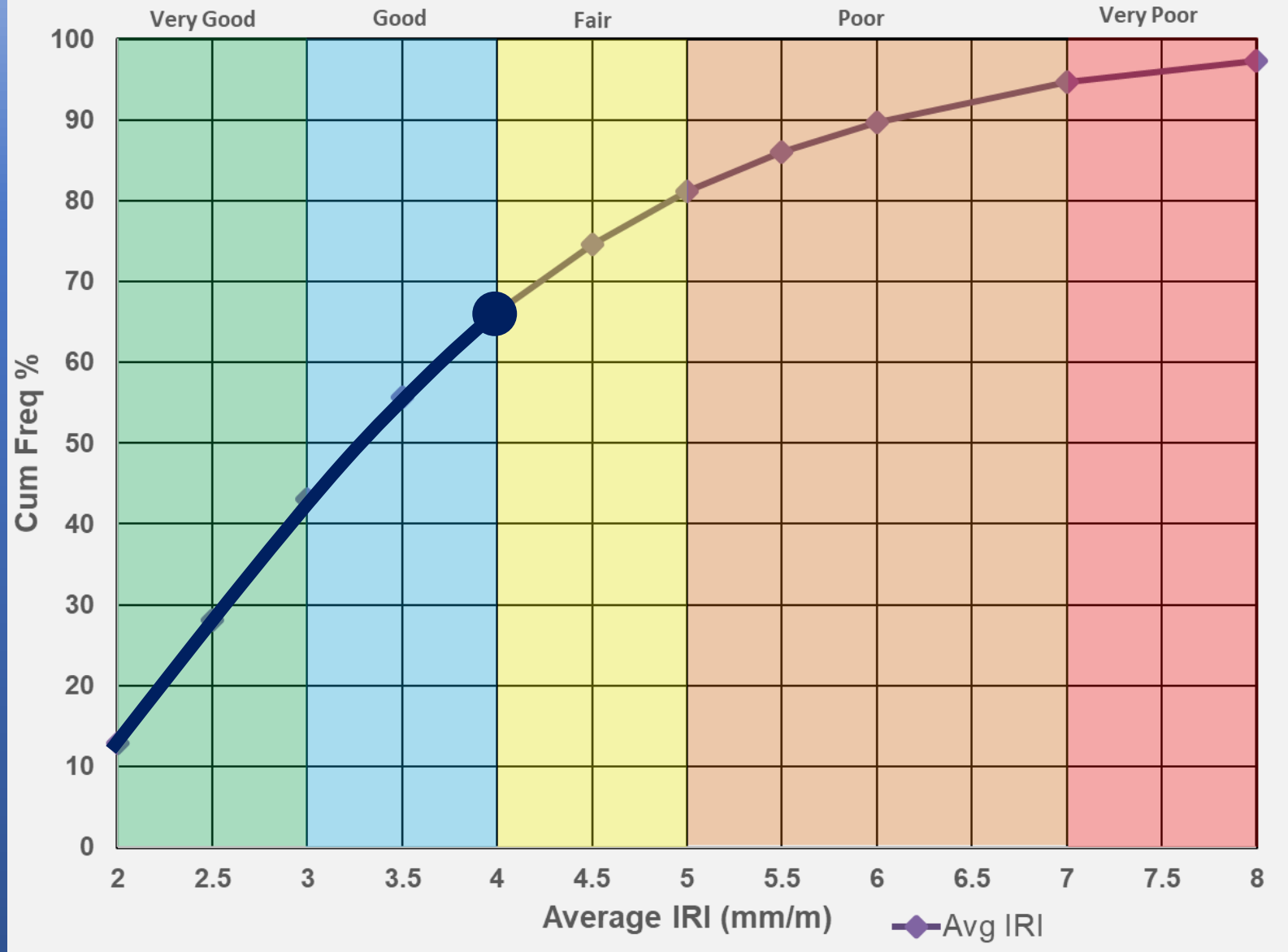




2024

c. 67%

Smooth or better @ Speed Limit





2024

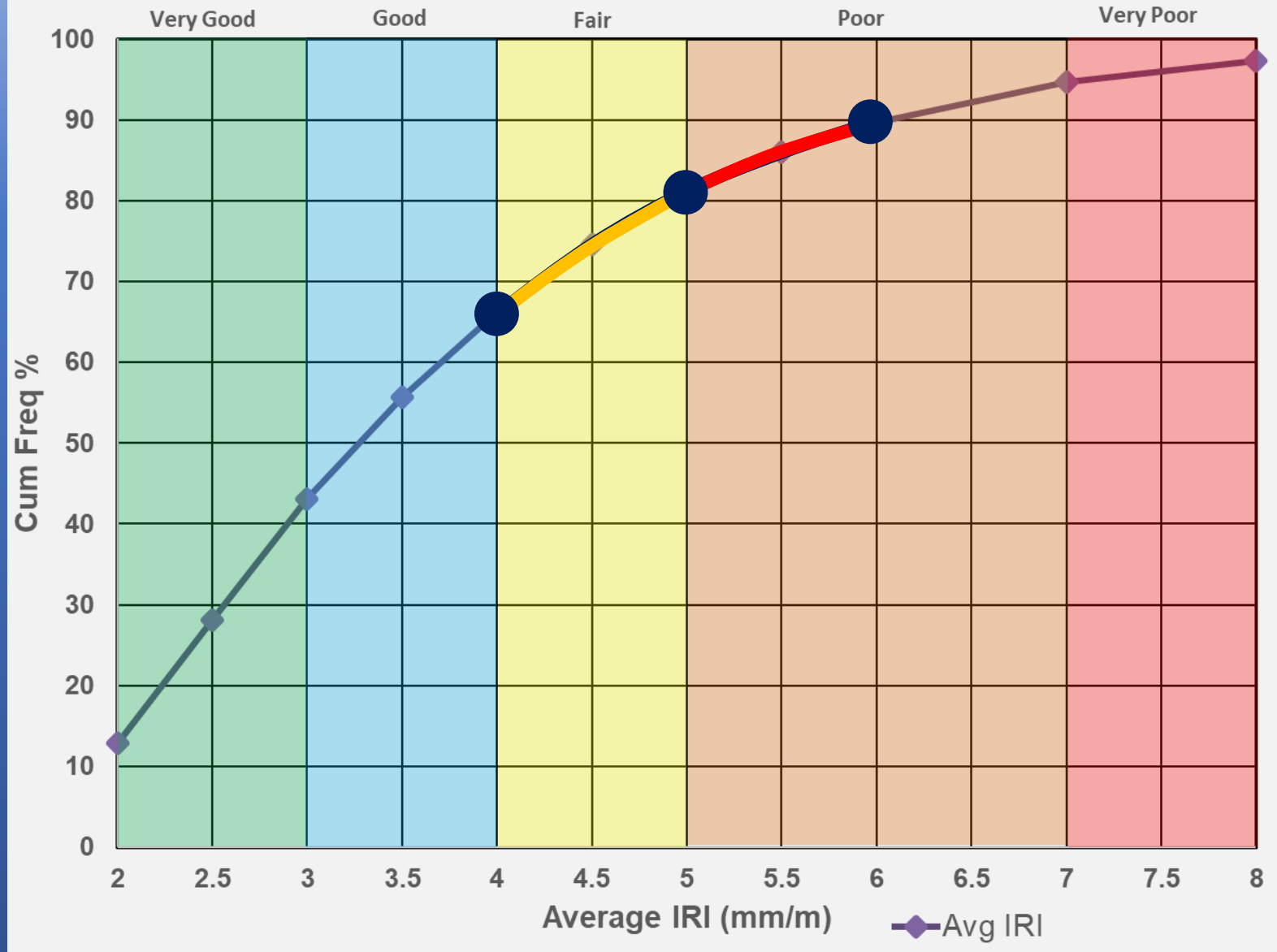
c. 23%

Perceptible Movement

@ Speed Limit c. 13%

Reduction in speed
required c. 10%

80% @ Fair Or Better

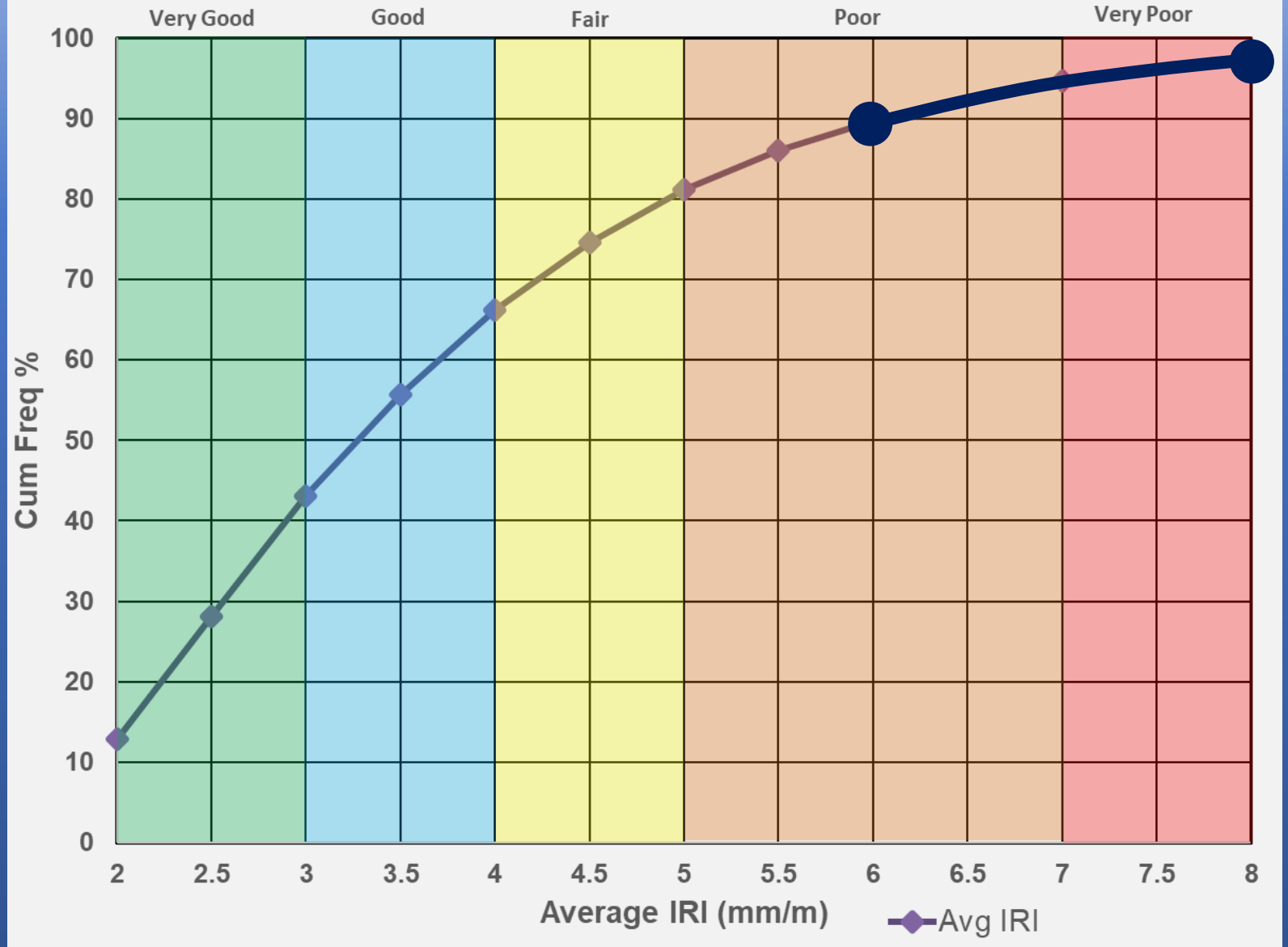




2024

c. 10%

Reduction in speed required
under 60kmh





2018
2024

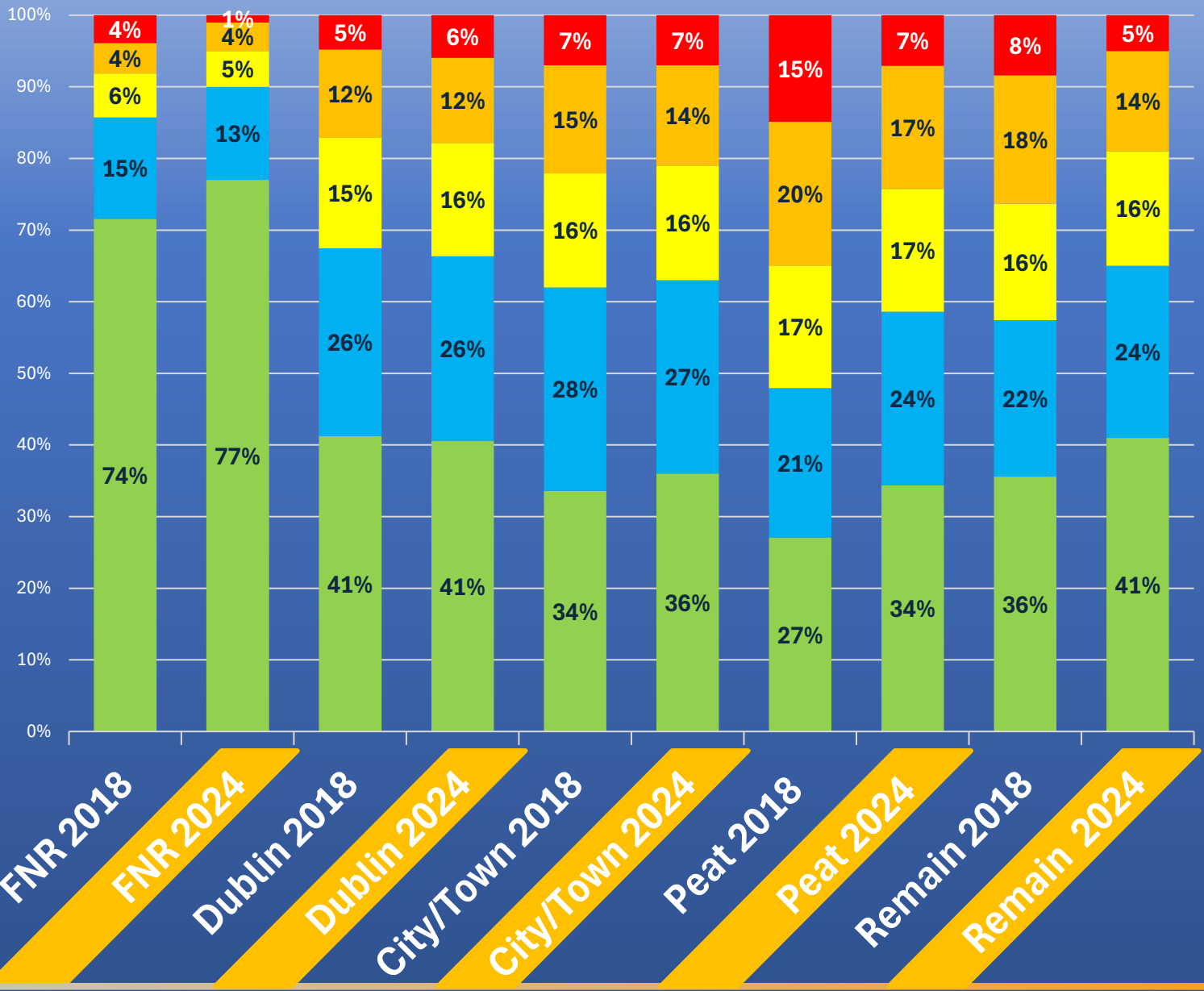
V. Good <3 mm/m

Good 3 – 4 mm/m

Fair 4 – 5 mm/m

Poor 5 – 7 mm/m

V. Poor >7 mm/m



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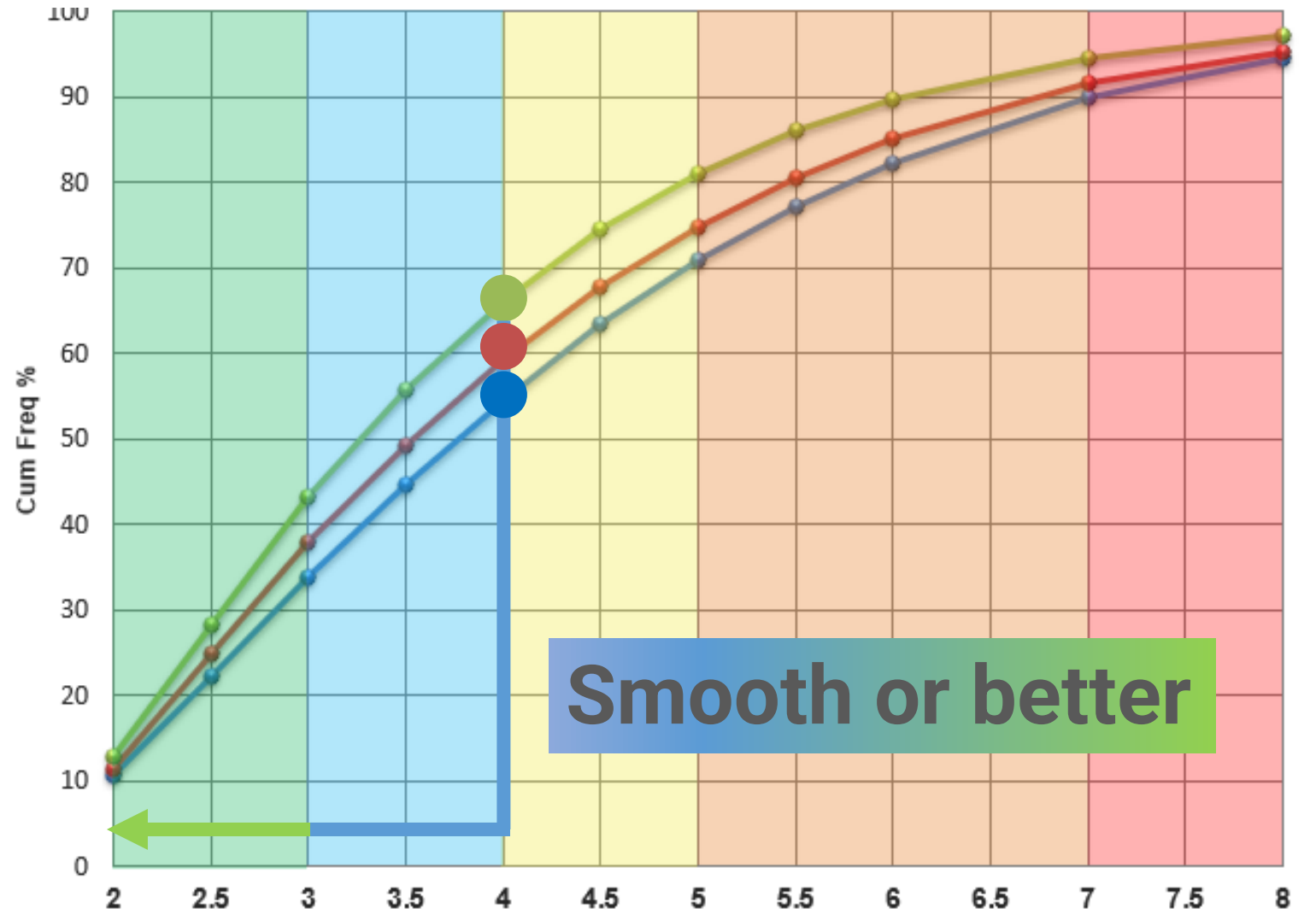


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c. 55% 2011
c. 60% 2018
c. 67% 2024

2011 v 2018 v 2024



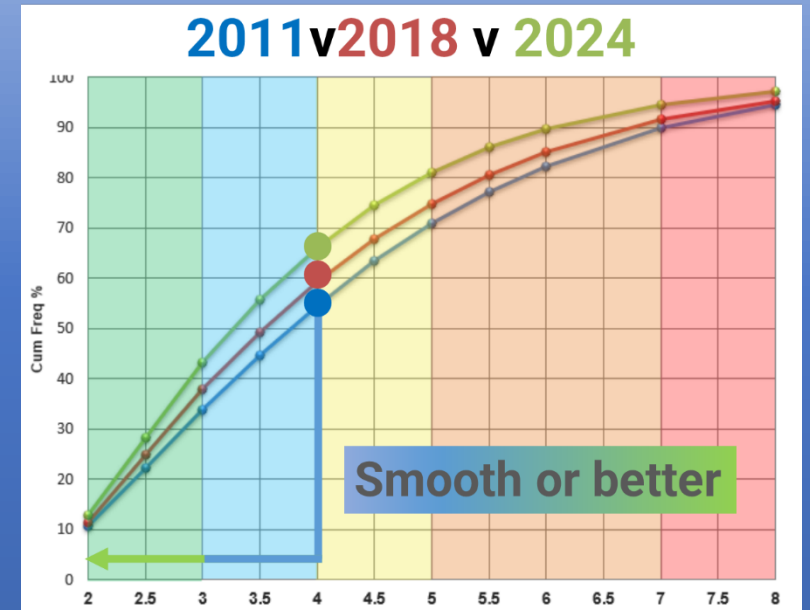


2024

c. 55% 2011

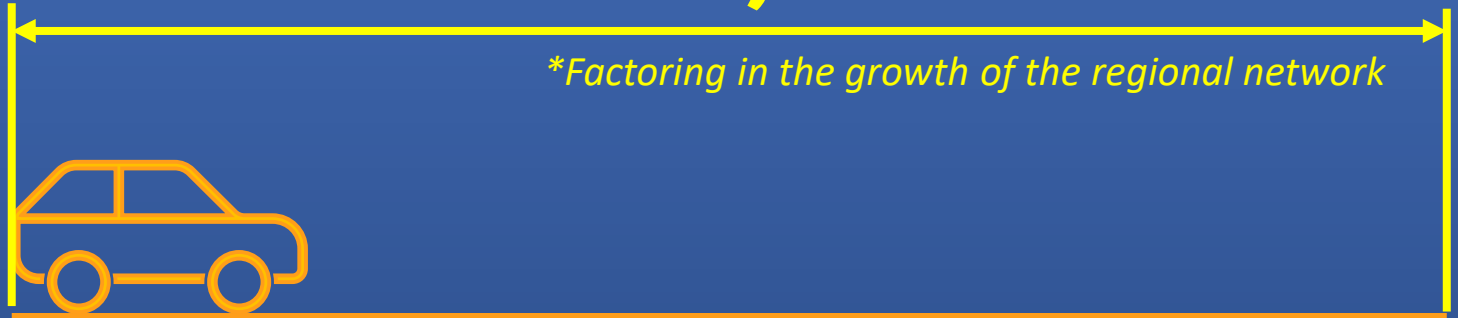
c. 60% 2018

c. 67% 2024



c. 1,400km *

**Factoring in the growth of the regional network*





RUT

(Transverse Profile)





2024

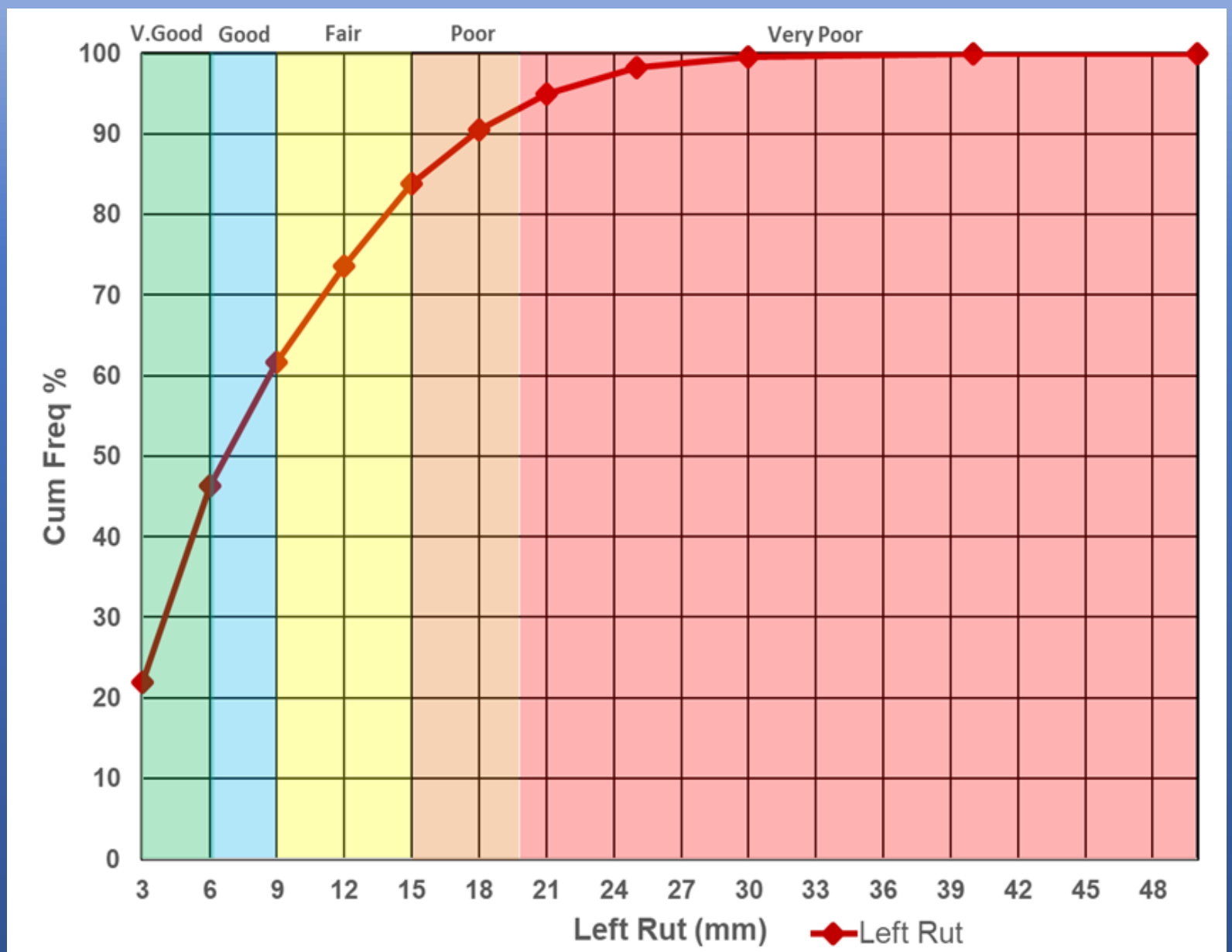
V . Good <6mm

Good 6 – 9mm

Fair 9 – 15mm

Poor 15 – 20mm

V . Poor >20mm

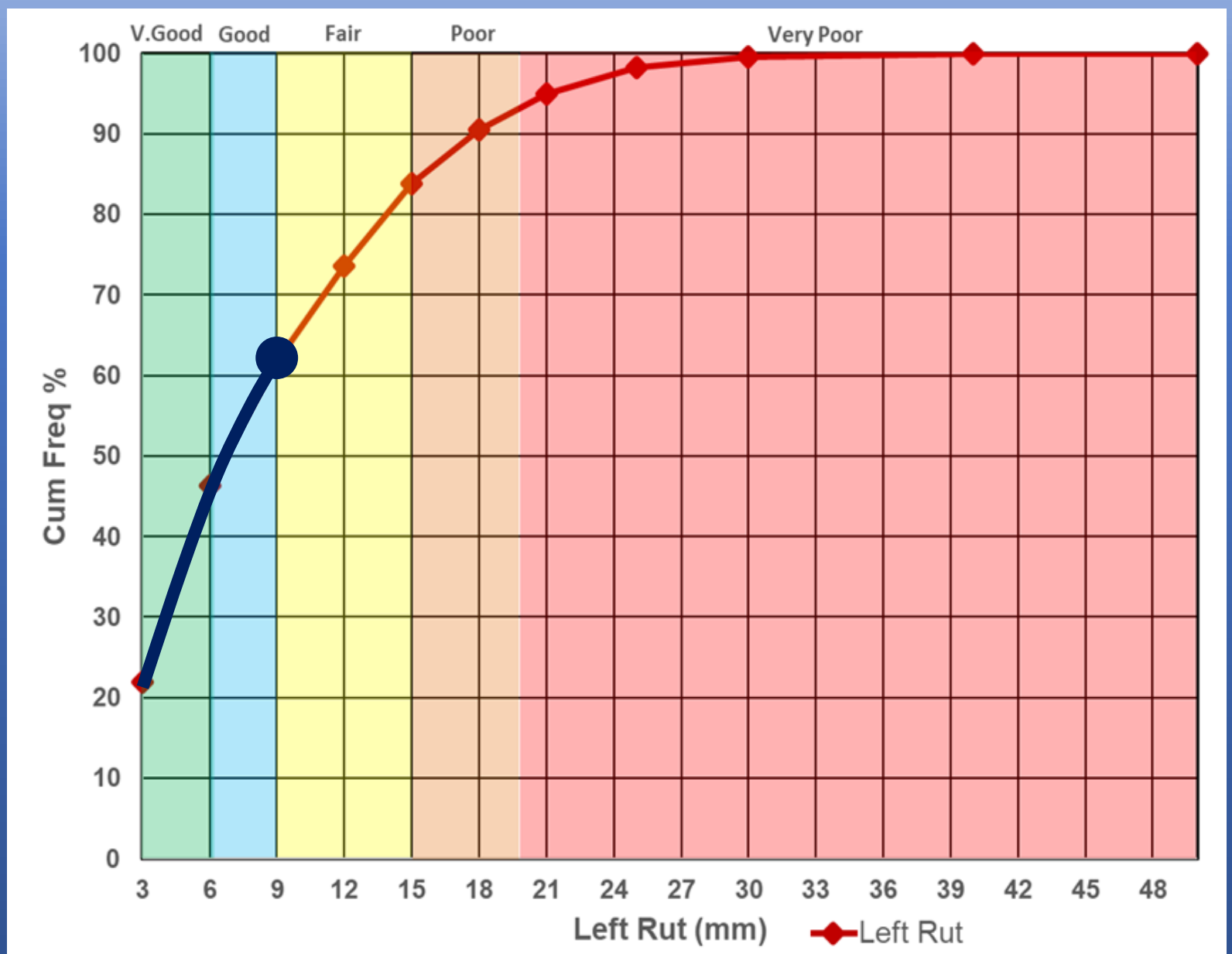




2024

c. 62%

has rut depth values considered GOOD or Better @ < 9mm

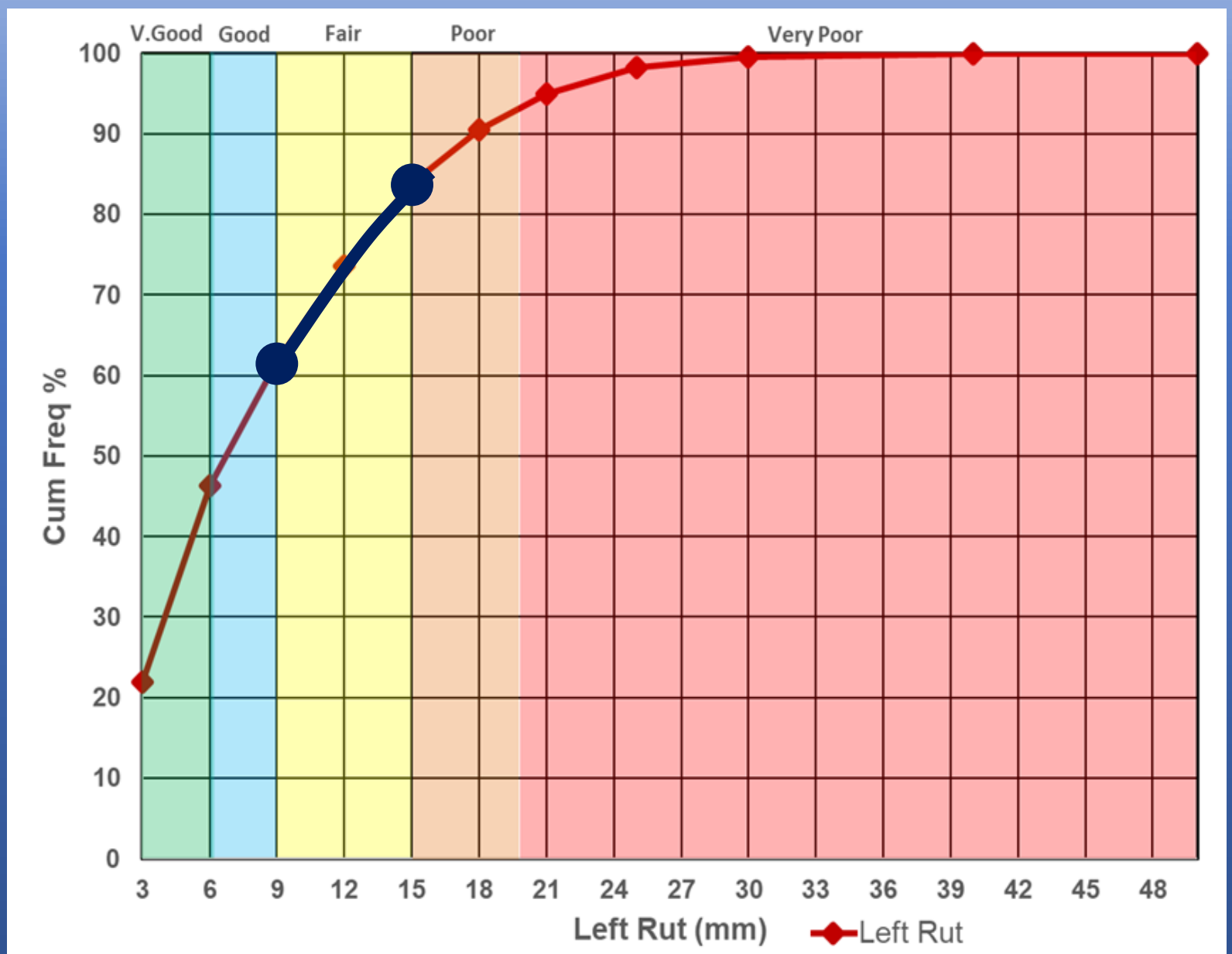




2024

c. 22%

has rut depth values considered FAIR

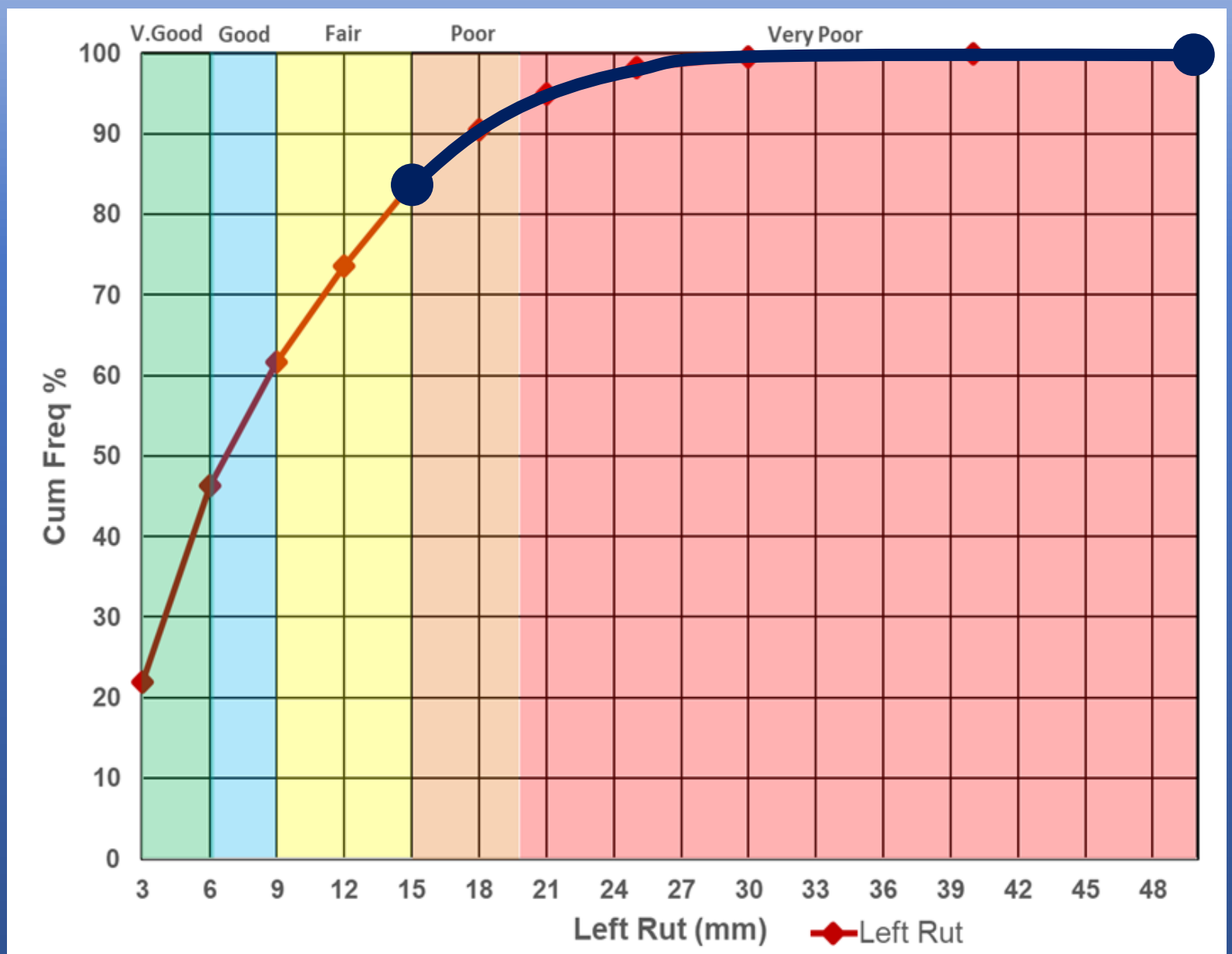




2024

c. 16%

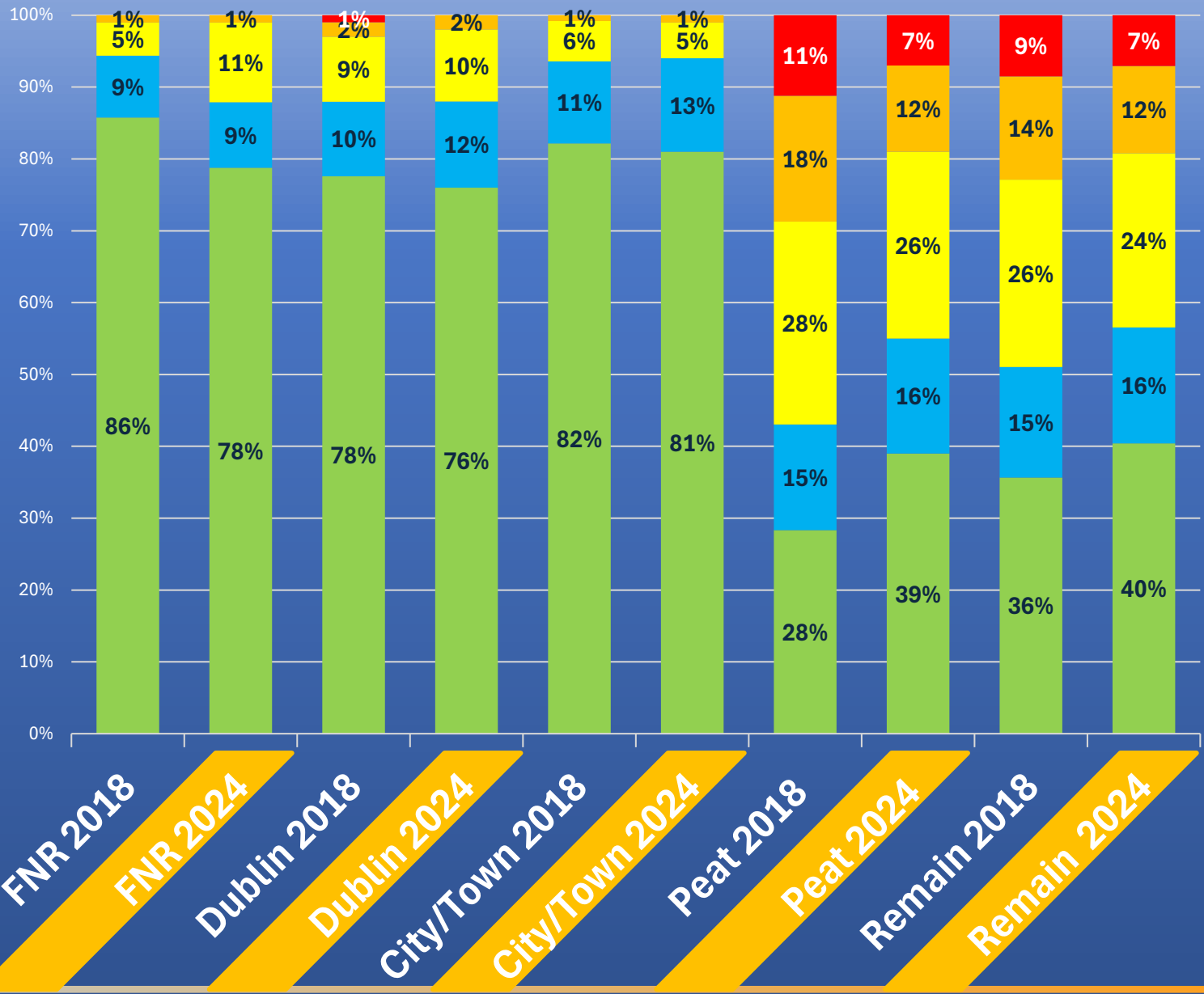
has rut depth values considered POOR or worse, majority 15mm – 30mm





2018
2024

V . Good <6mm
 Good 6 – 9mm
 Fair 9 – 15mm
 Poor 15 – 20mm
 V . Poor >20mm



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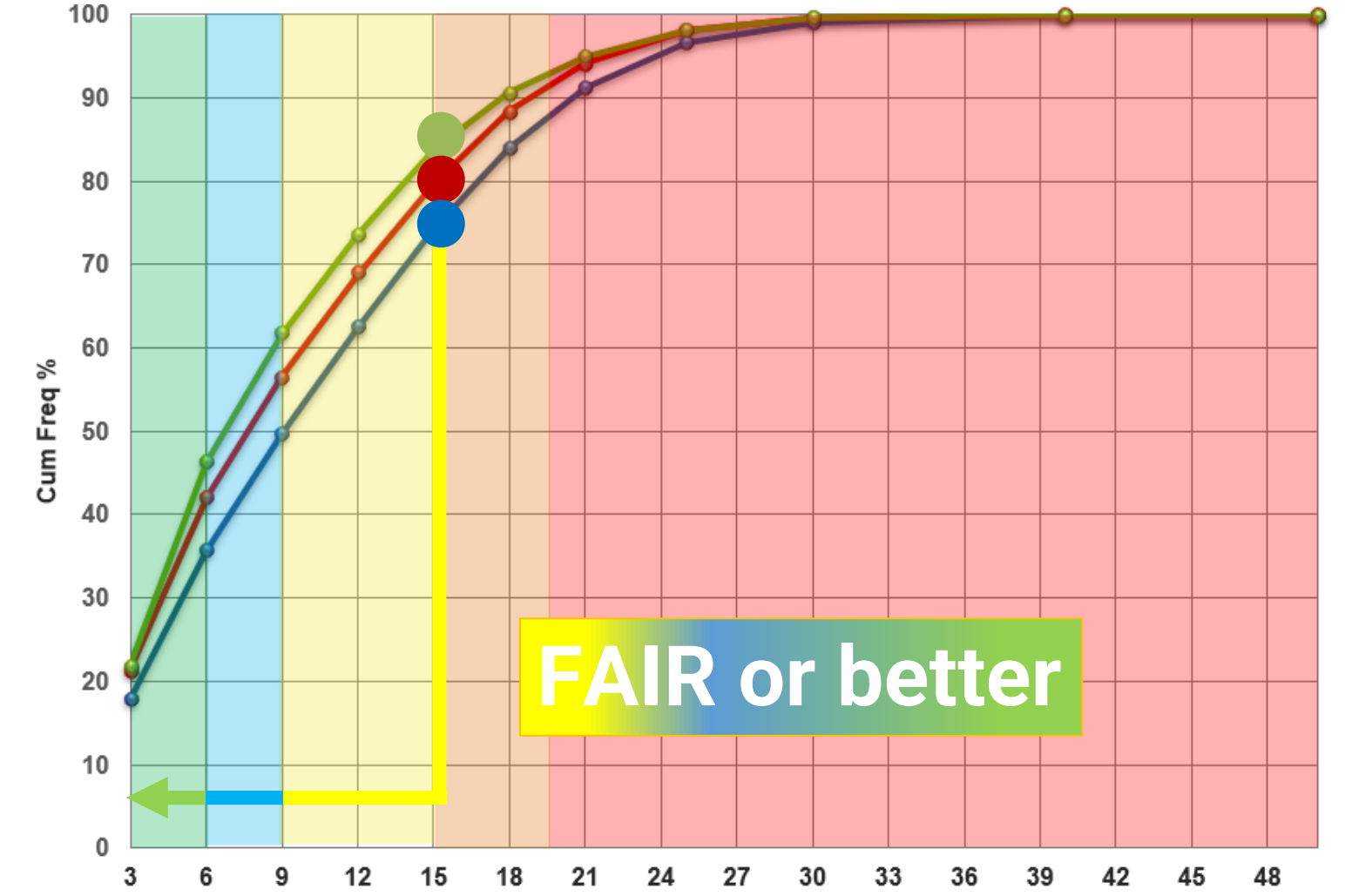


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C. 74% 2011
C. 80% 2018
C. 84% 2024

2011 v 2018 v 2024





SCRIM

(Characteristic SRIM Coefficient)





2024

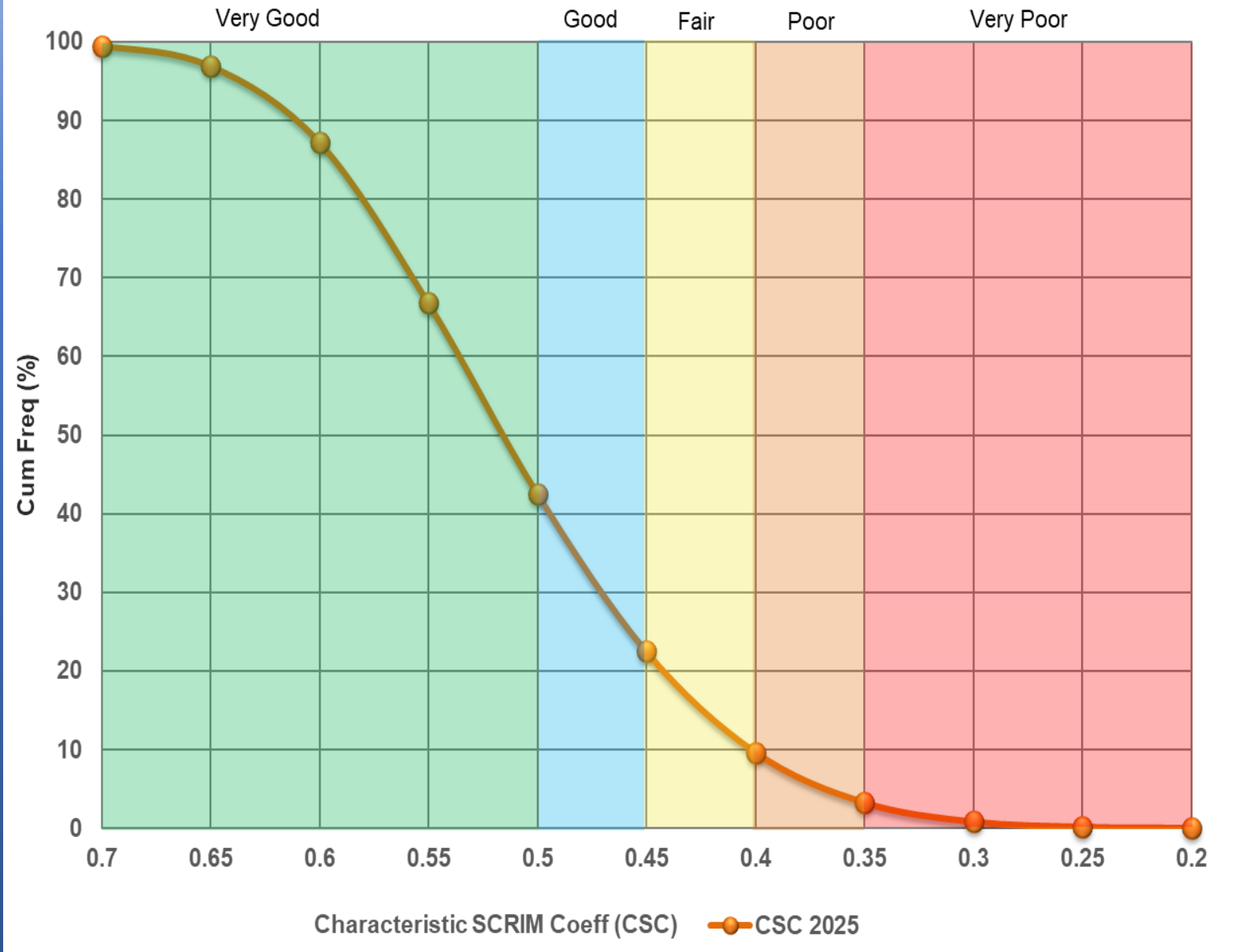
V . Good 0.5-0.7

Good 0.45 – 0.5

Fair 0.4-0.45

Poor 0.35-0.4

V . Poor <0.35

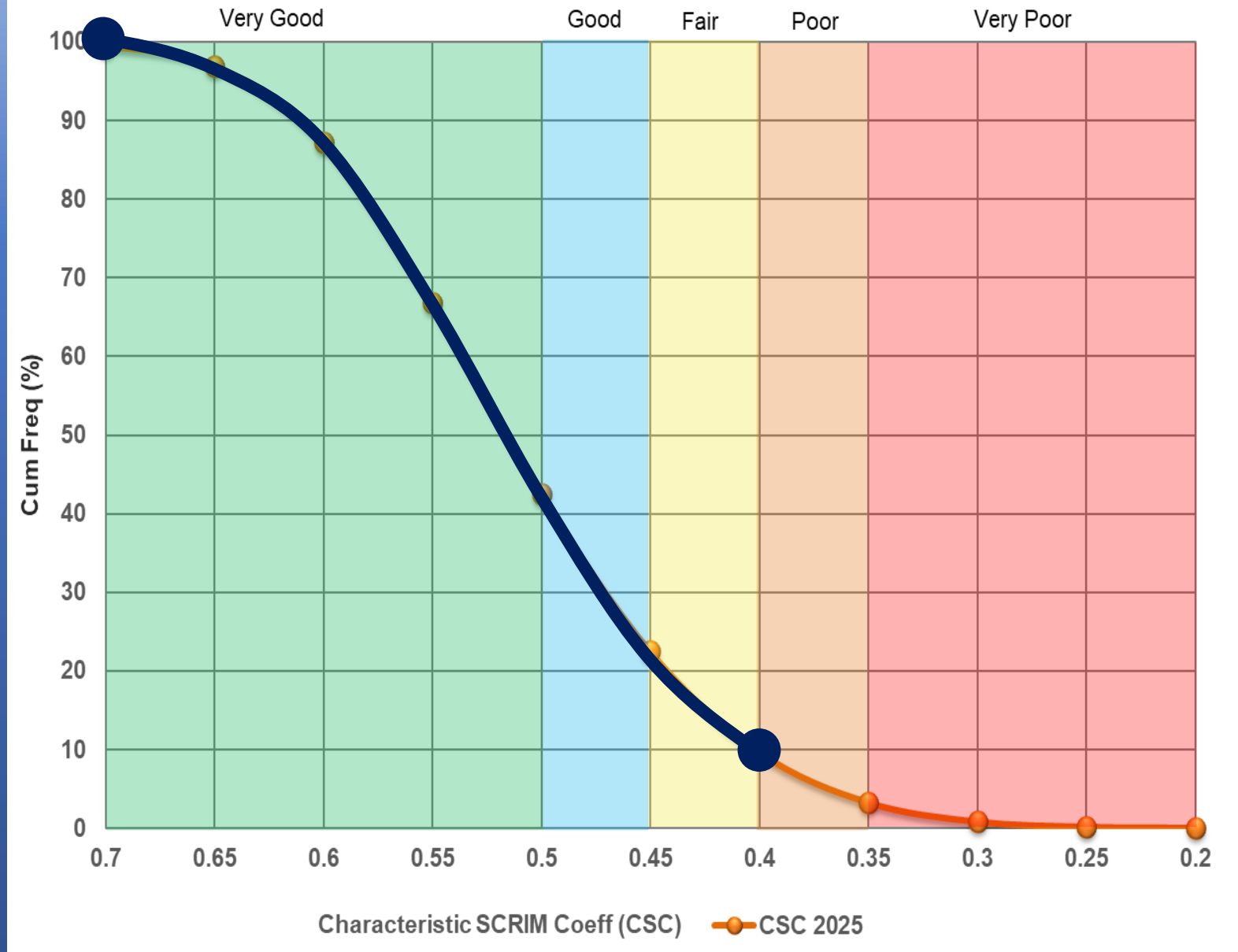




2024

c. 90%

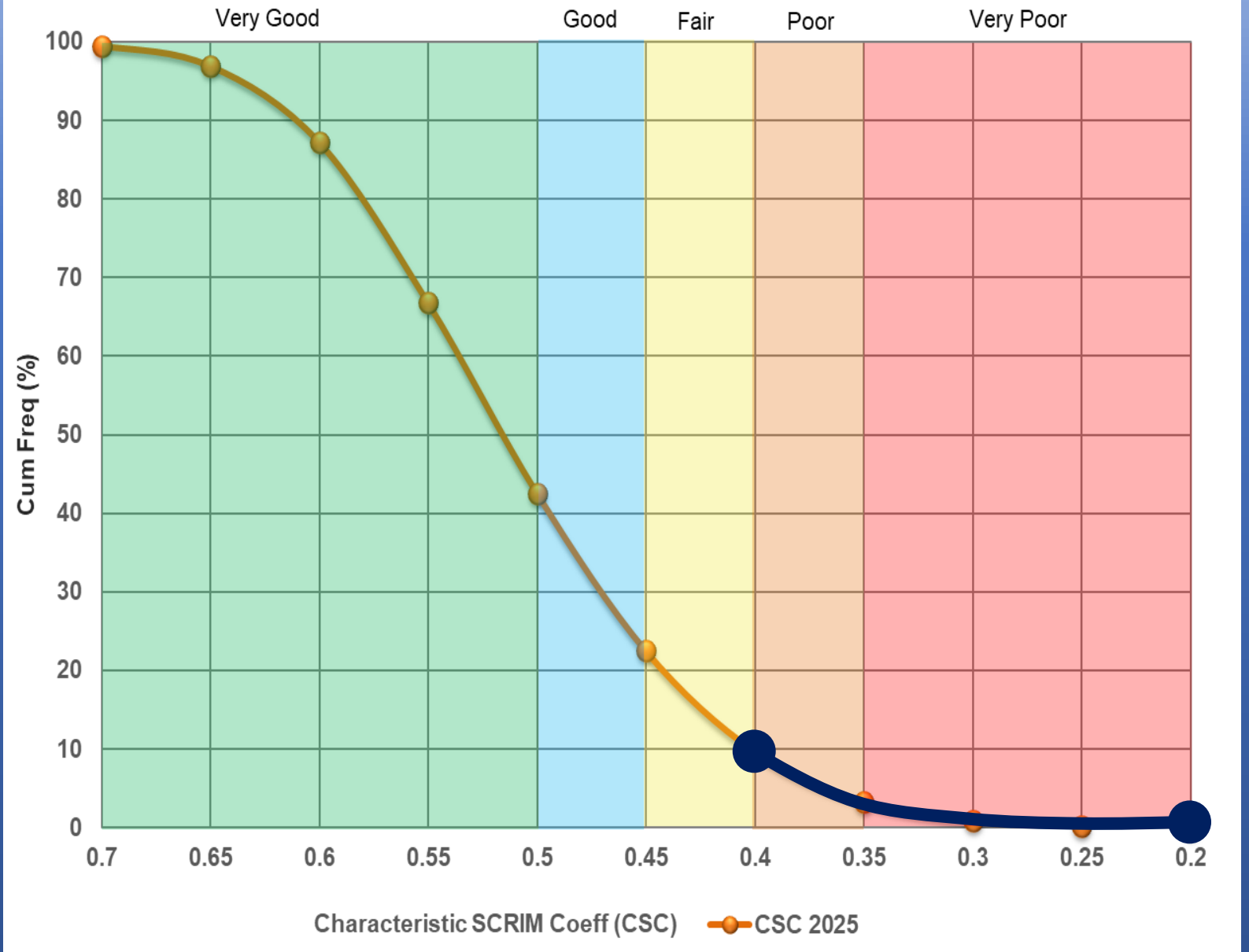
FAIR or Better





2024

c. 10%
POOR or Worse





2018
2024

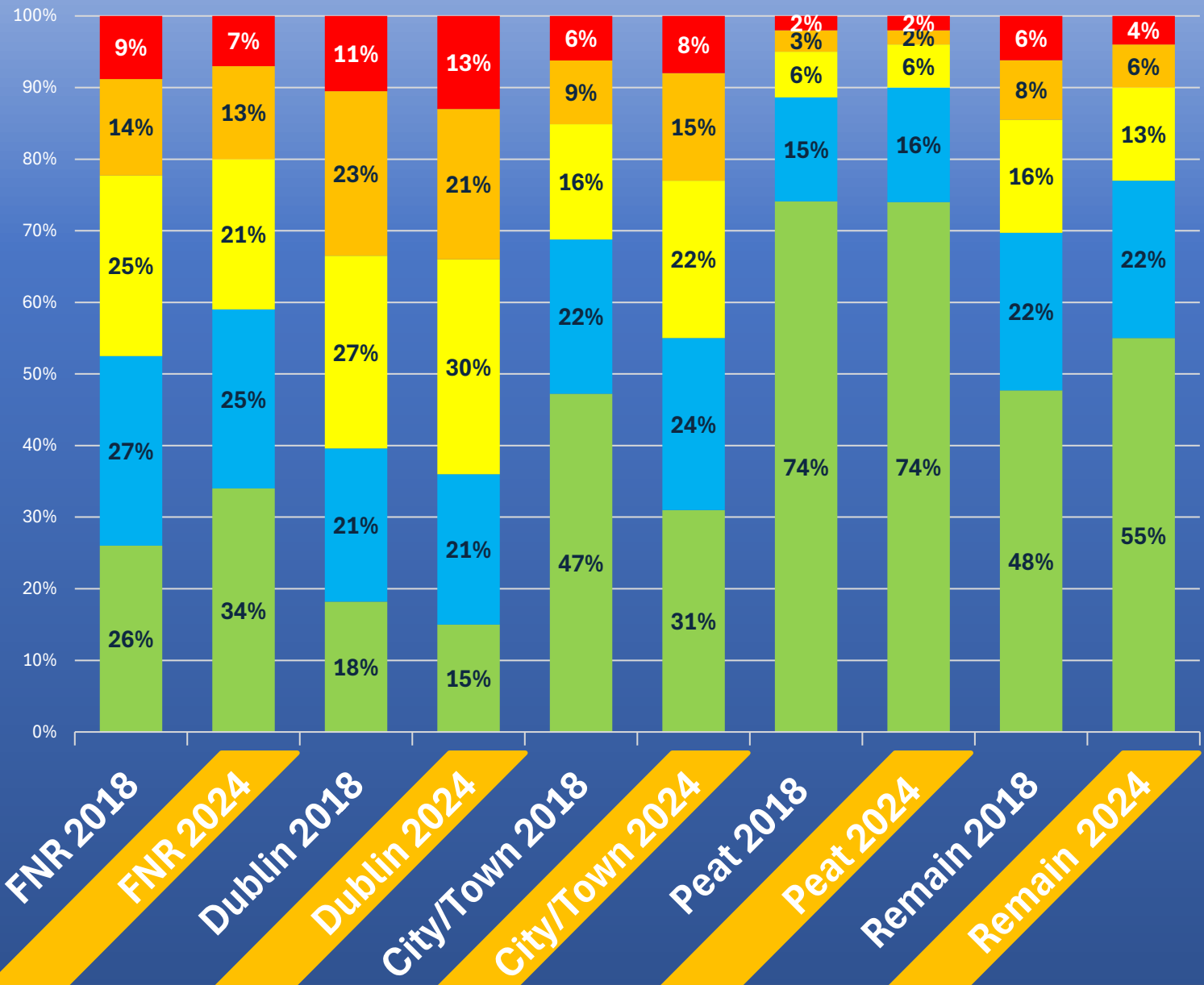
V . Good 0.5-0.7

Good 0.45 - 0.5

Fair 0.4 - 0.45

Poor 0.35 - 0.4

V . Poor <0.35



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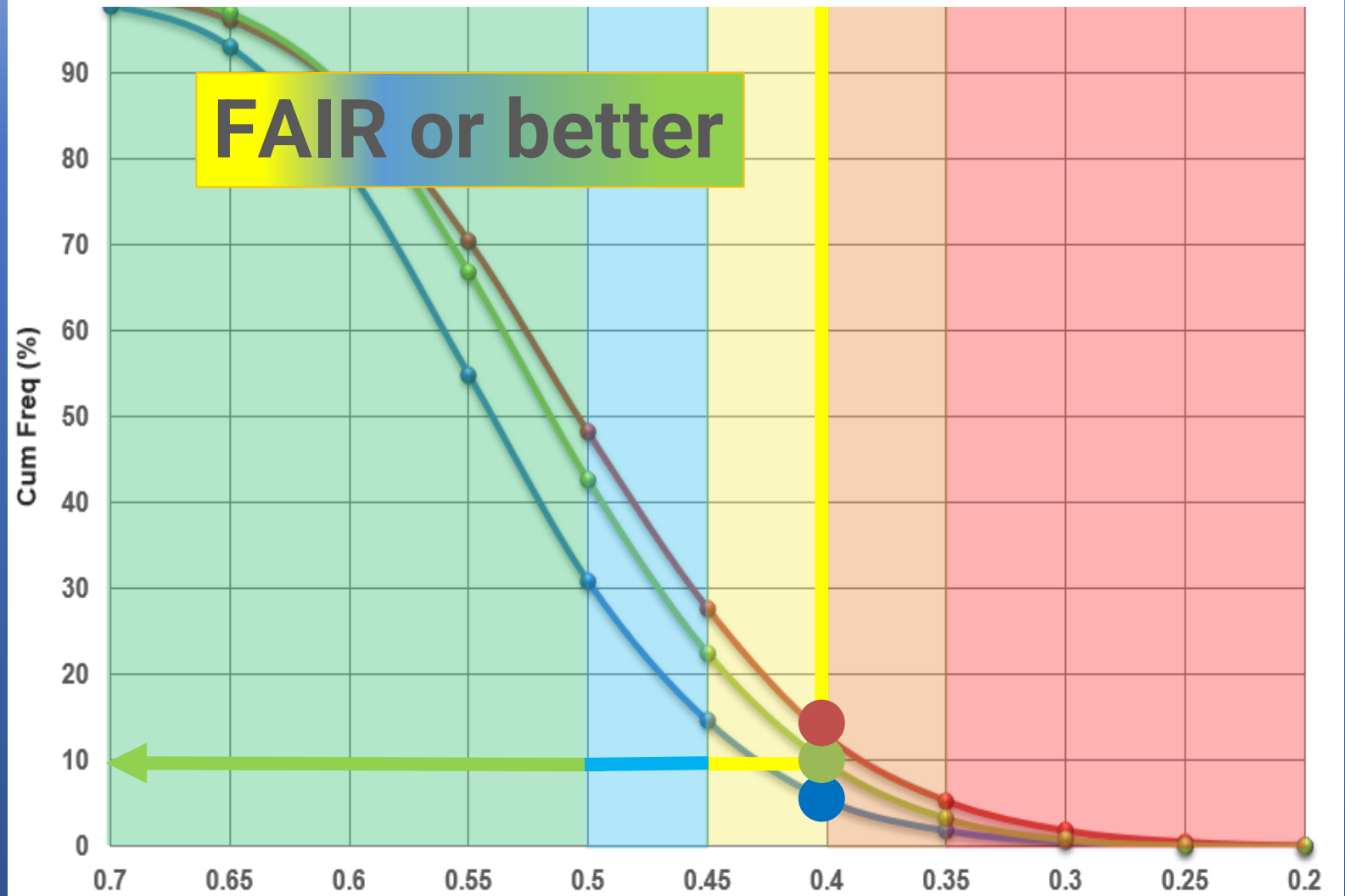


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c. 95% 2011
c. 87% 2018
c. 91% 2024

2011 v 2018 v 2024





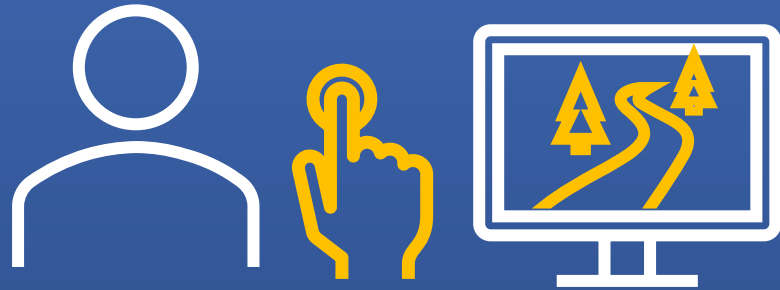
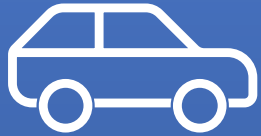
PSCI

(Pavement Surface Condition Index)

Overall PSCI Rating	Primary Rating Indicators*	Secondary Rating Indicators*
10	No Visible Defects.	Road surface in perfect condition.
9	Minor Surface Defects¹. Ravelling or Bleeding <10% .	Road surface in very good condition. Like new.
8	Moderate Surface Defects¹. Ravelling or Bleeding 10% to 30% .	Little or No Other defects.
7	Extensive Surface Defects¹. Ravelling or Bleeding > 30% .	Little or No Other defects.
6	Moderate Other Pavement Defects^{2, 3, 4}. Other Cracking ² ≤ 20% . Sealed Cracks in Good condition. Some narrow Open Cracks ² (≤ 12 mm). Patching in Good condition ⁴ . Surface Distortion ³ requiring some reduction in speed.	Surface defects ¹ may be present No structural distress ⁵ .
5	Significant Other Pavement Defects^{2, 3, 4}. Other Cracking ² > 20% . Sealed Cracks in Fair condition. More frequent narrow Open Cracks ² (≤ 12 mm). Patching in Fair condition ⁴ . Surface Distortion ³ requiring reduction in speed.	Surface defects ¹ may be present Very localised structural distress⁵ (< 5 m² or a few isolated potholes) may be present.
4	Structural Distress⁵ Present. Rutting, Alligator Cracking or Poor Patching for 5% to 25% . Wide Open Cracks ² (> 12 mm) with moderate Spalling. Sealed Cracks in Poor condition. Frequent Potholes. Short lengths of Edge Breakup.	Other defects may be present.
3	Significant Areas of Structural Distress⁵. Rutting, Alligator Cracking or Poor Patching for 25% to 50% . Many Wide Cracks ² (> 12 mm) with severe Spalling. More frequent Potholes. Continuous lengths with Edge Breakup.	Other defects may be present.
2	Large Areas of Structural Distress⁵. Rutting, Alligator Cracking or Very Poor Patching for > 50% . Severe Rutting (> 50 mm). Extensive Very Poor Patching. Many Potholes.	Pavement badly deteriorated. Very difficult to drive on.
1	Extensive Structural Distress⁵. Severe Deterioration of surface. Pavement Failure. Many large and deep Potholes. Extensive Failed Patching.	Severe Deterioration Virtually undrivable.



Pavement Surface Condition Index



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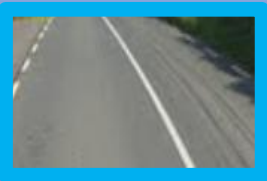
PSCI



- The introduction of a Machine Learning Image Recognition Model,
- Limited to Rural Roads



Each individual Image frame is rated by the model and given a 1 to 10 for every 5m Section

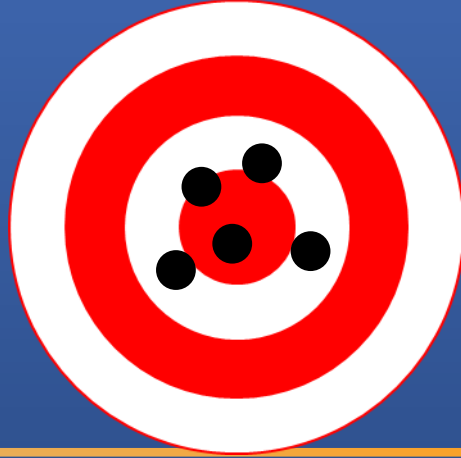


5m	8	8	7	8	8	7	6	9	4	8	9	9	8	8	8	8	8	8	3	5	3
Aggregated to minimum 200m section as per PSCI Methodology																					
8																					
4																					

High accuracy High precision



High accuracy Lower precision



PSCI

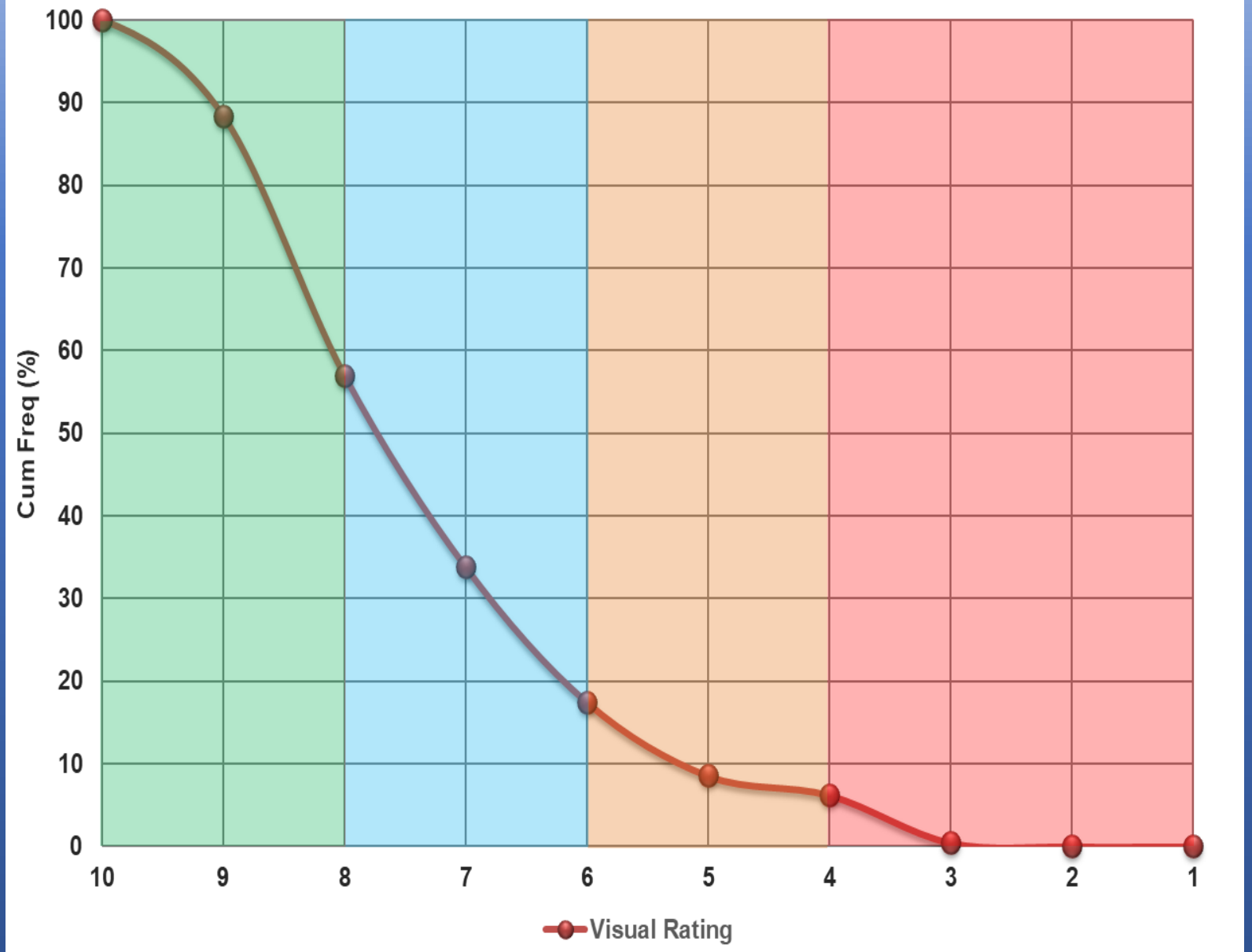
2024

9-10

7-8

5-6

1-4

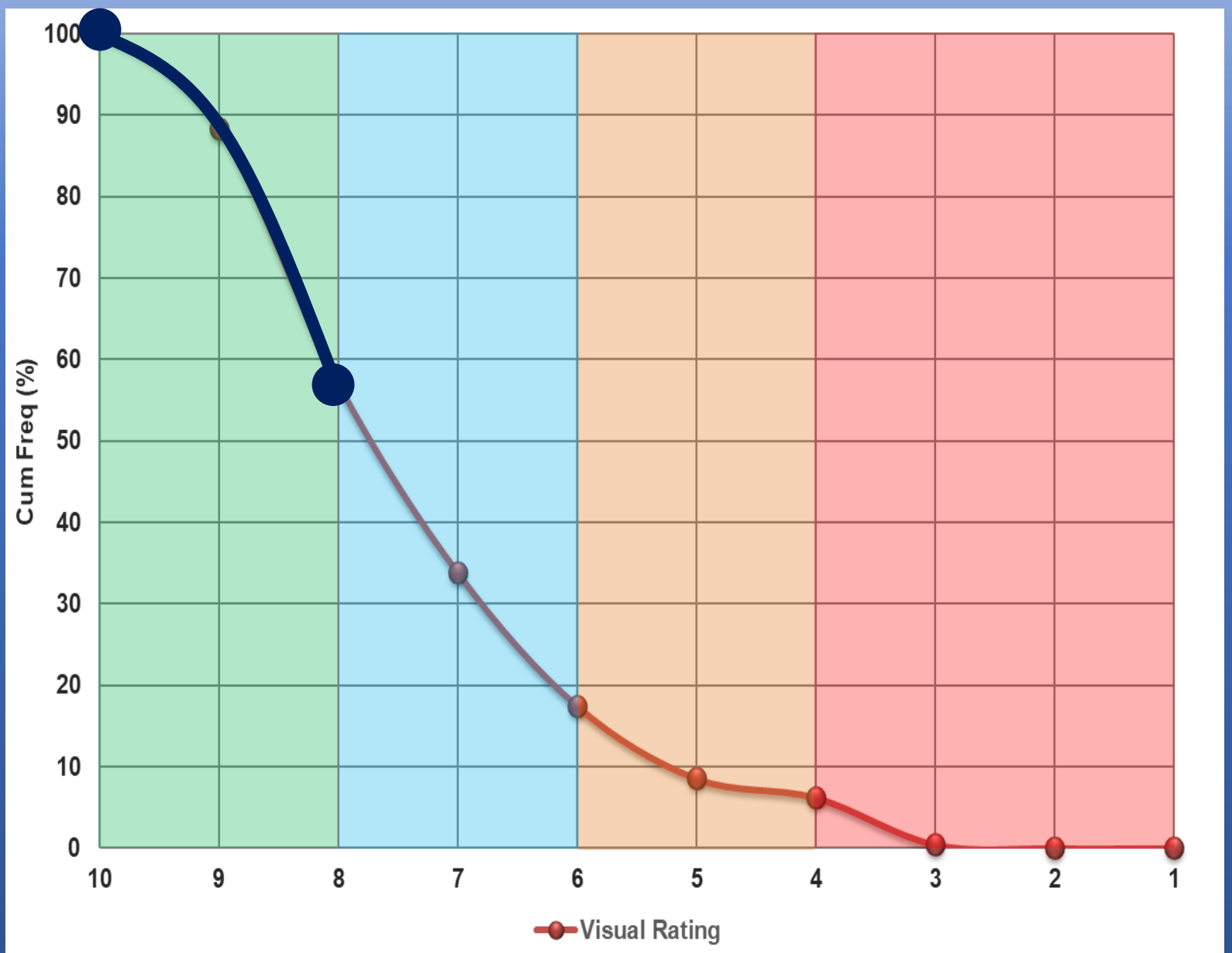


PSCI

2024

c. 42%

Perfect to very good condition

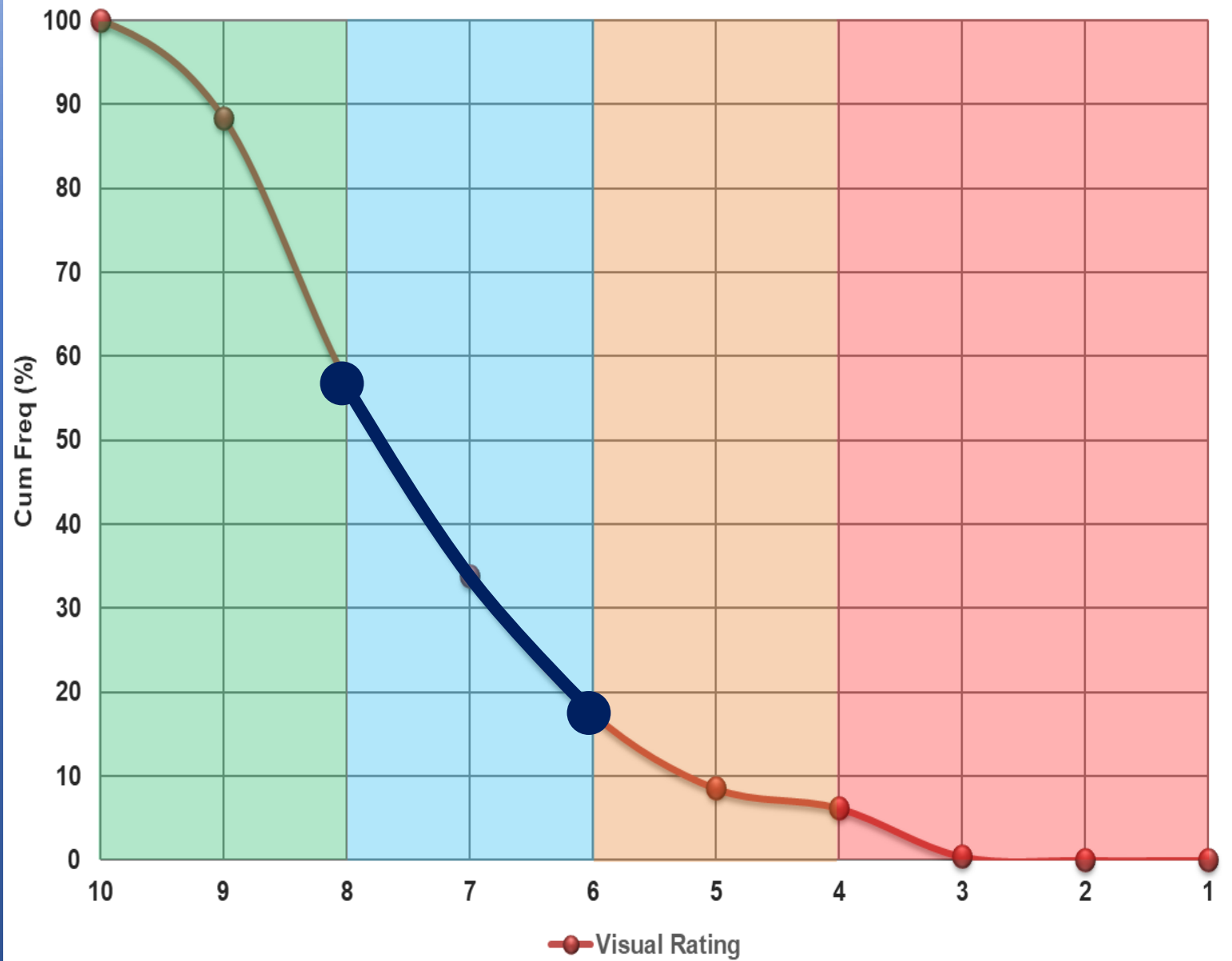


PSCI

2024

c. 40%

Surface Ravelling or
Bleeding but little other
defects

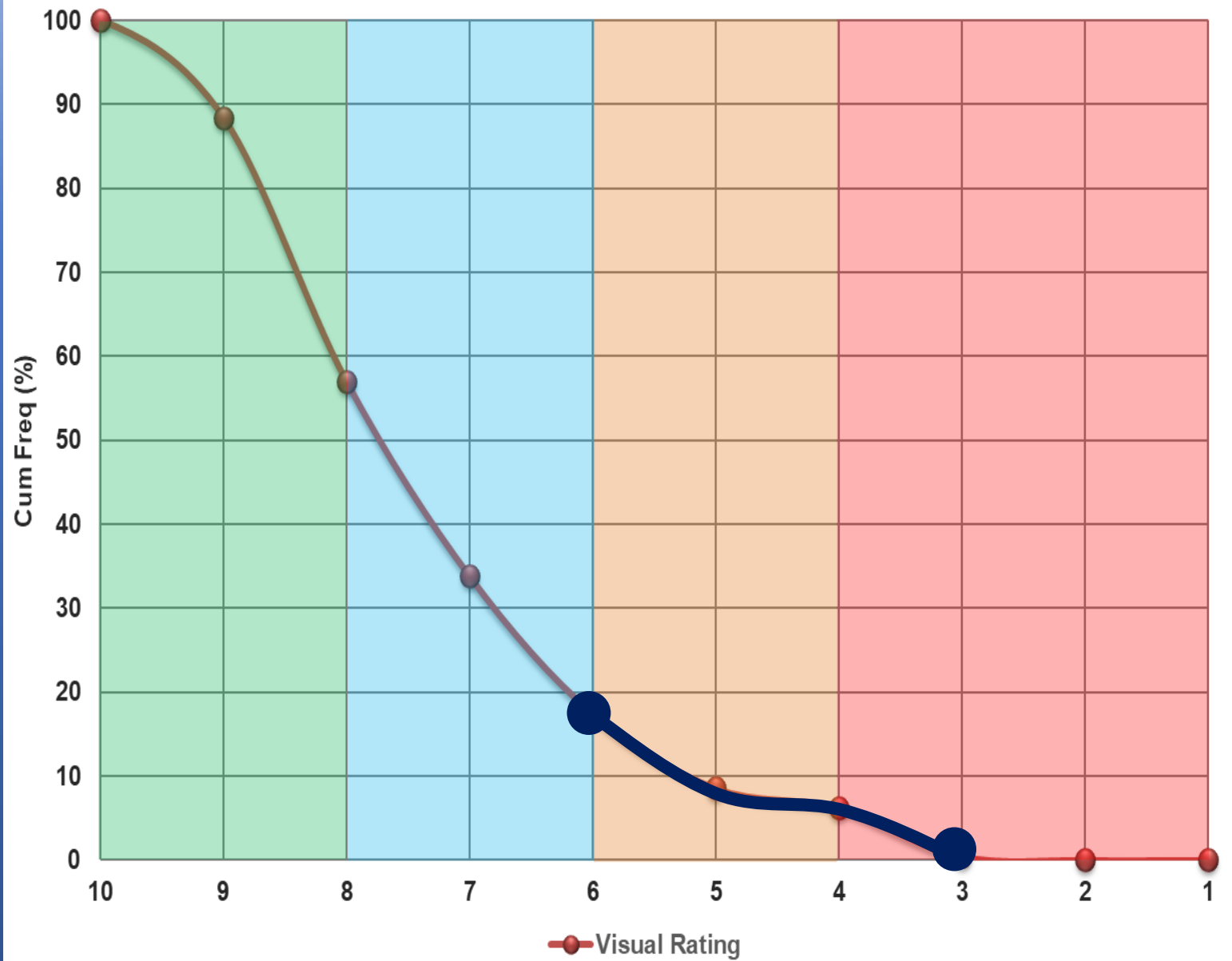


PSCI

2024

C. 18%

Requires Structural Intervention



PSCI

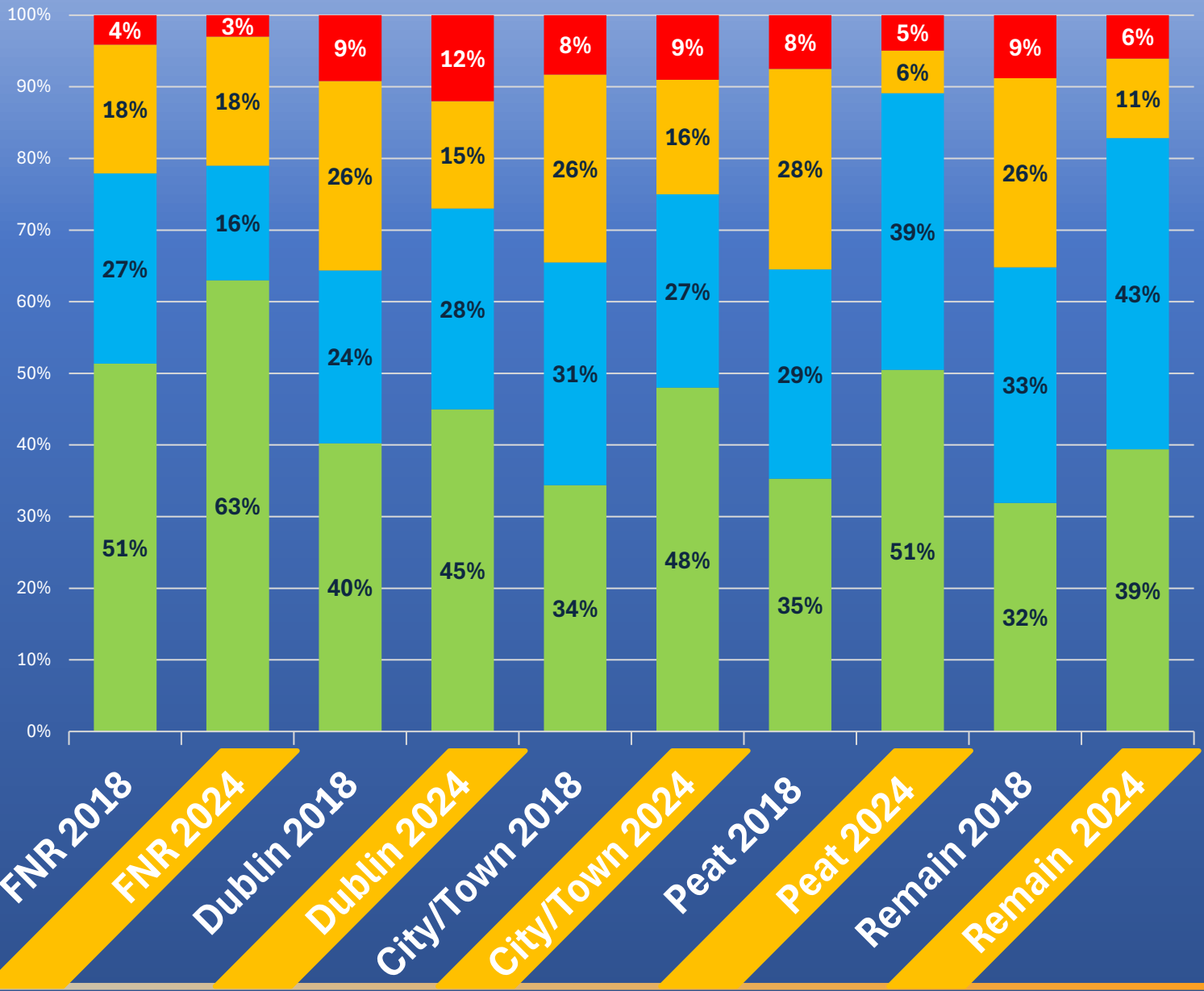
2018
2024

9-10

7-8

5-6

1-4



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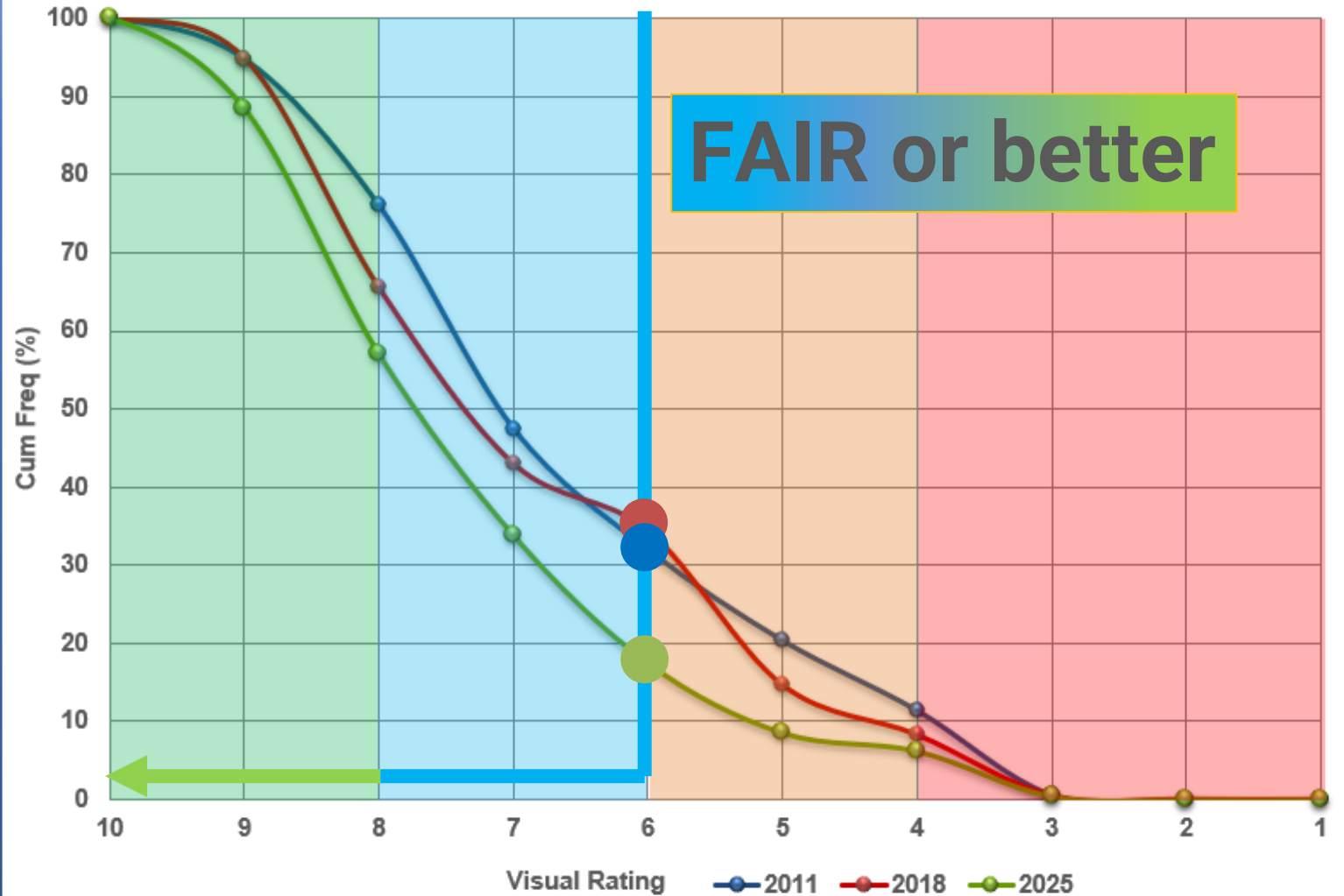


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PSCI

c. 68% 2011
c. 65% 2018
c. 82% 2024

2011 v 2018 v 2024





Cracking Intensity



**% Area /100m SU
(sample unit)**

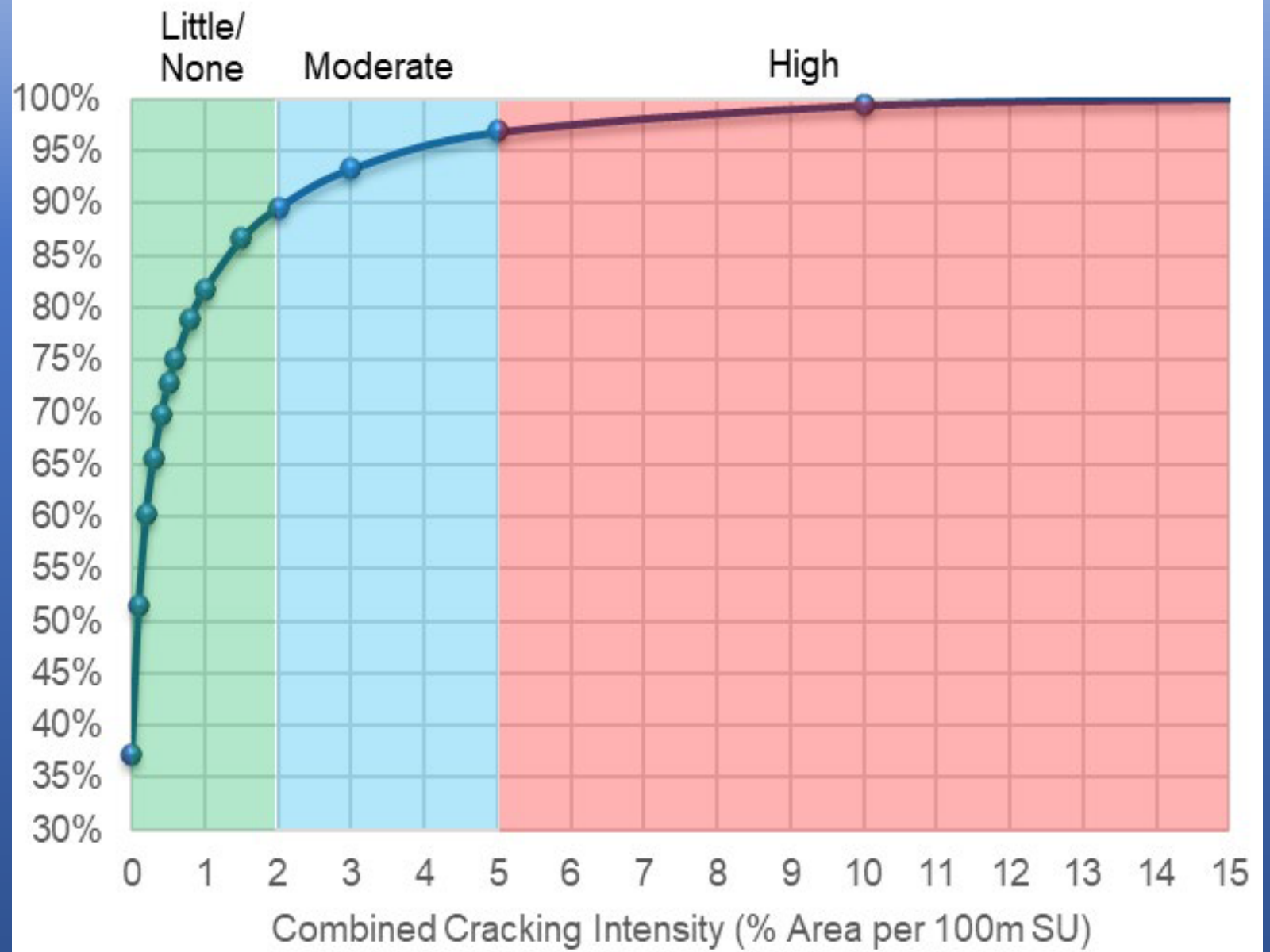


2024

0 - 2% Little to None

2 - 5% Moderate

5 - 15% High

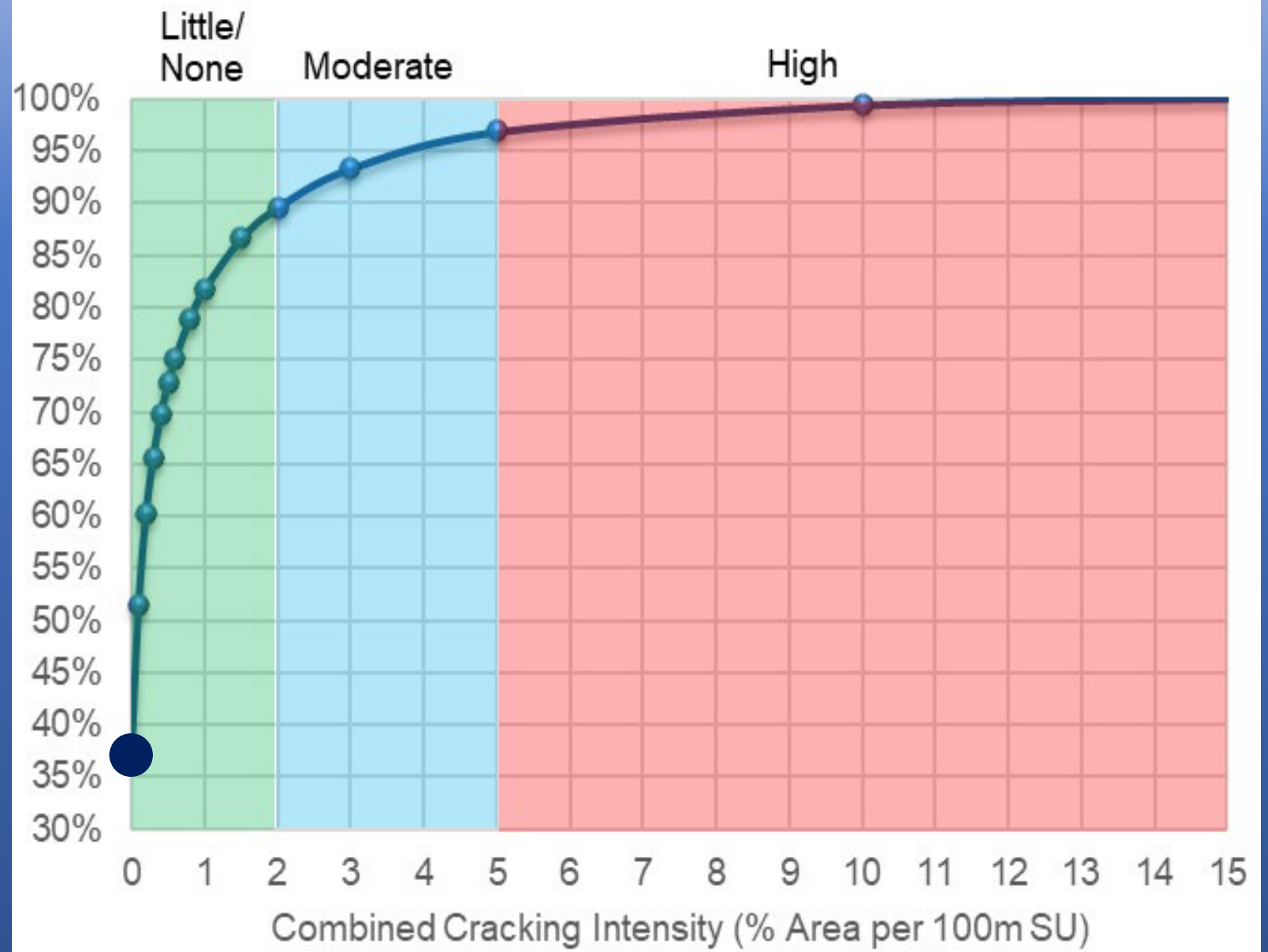




2024

c. 35%

No Cracking

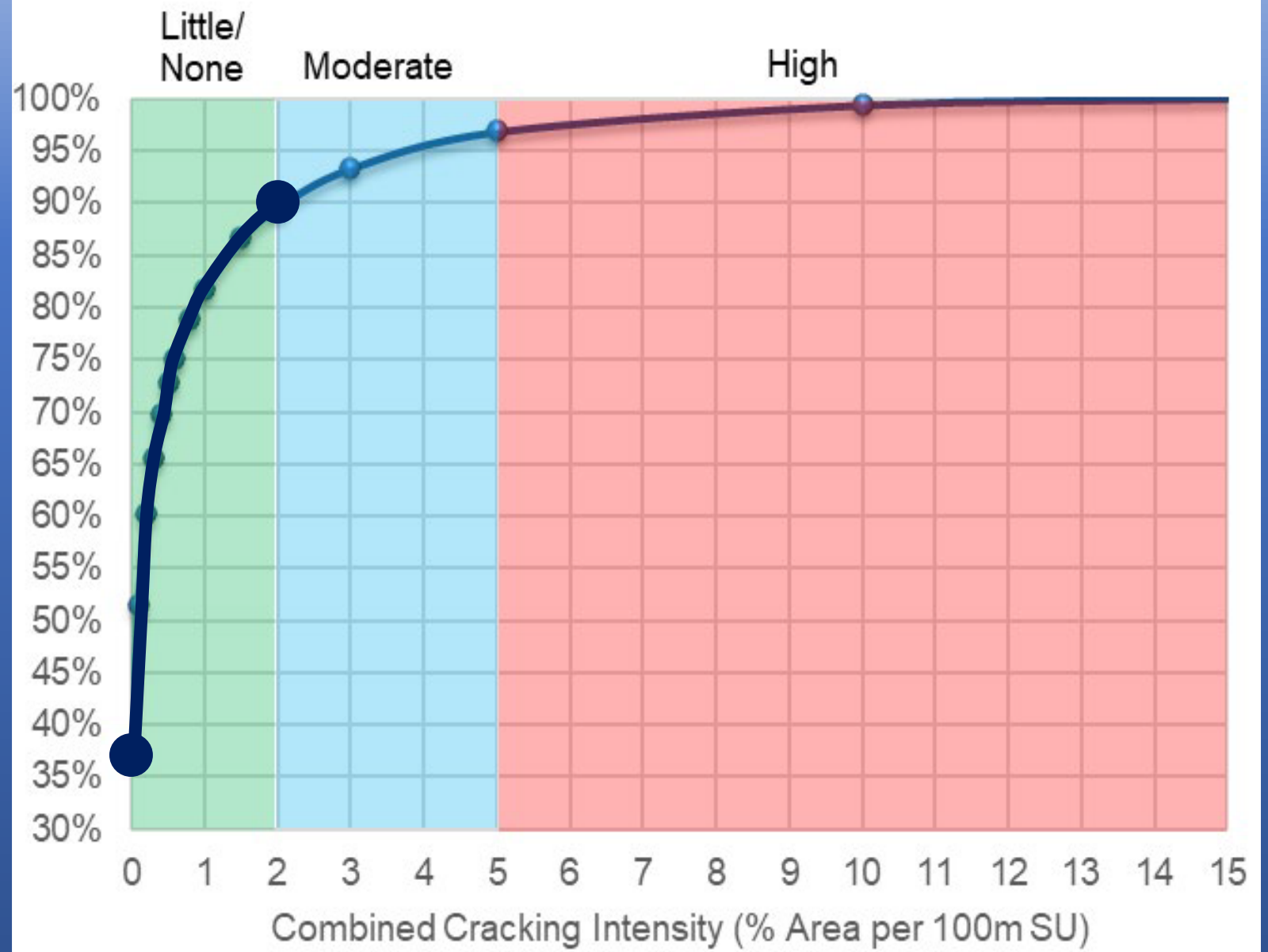




2024

c. 90%

Little to None

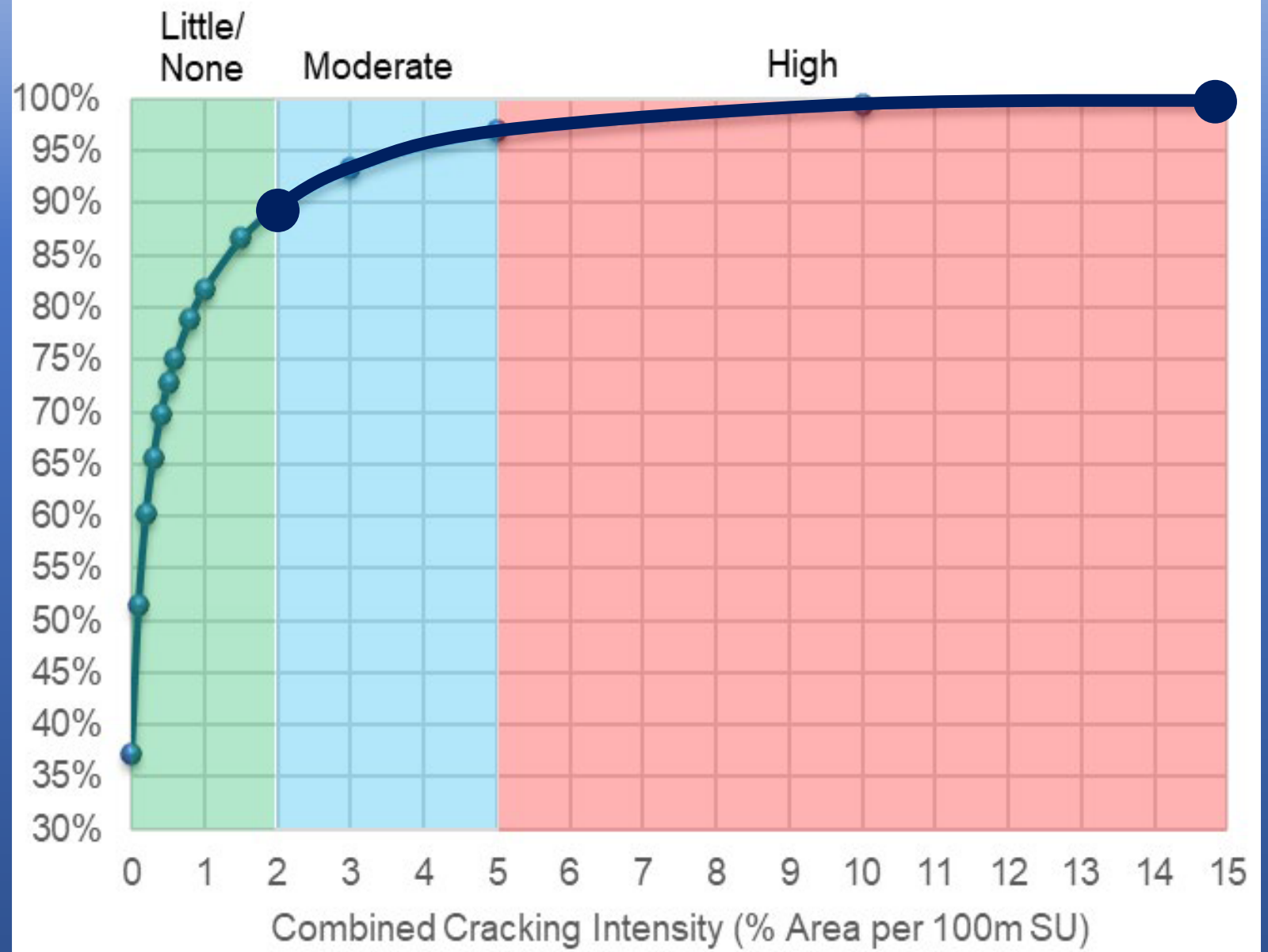




2024

c. 10%

water can penetrate into the pavement structure





Ravelling Intensity



**% Area / 100m SU
(sample unit)**

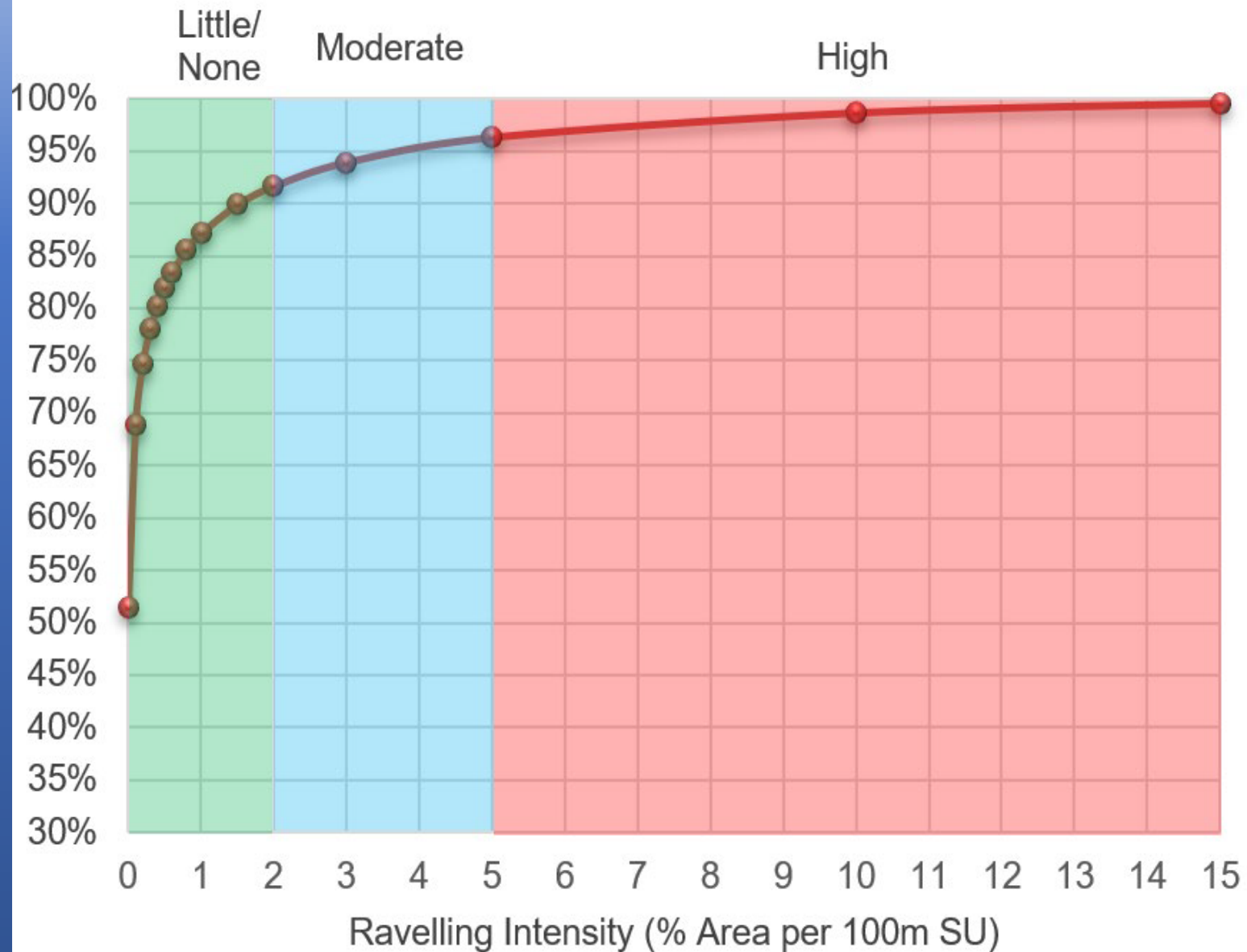


2024

0 - 2% Little to None

2 - 5% Moderate

5 - 15% High

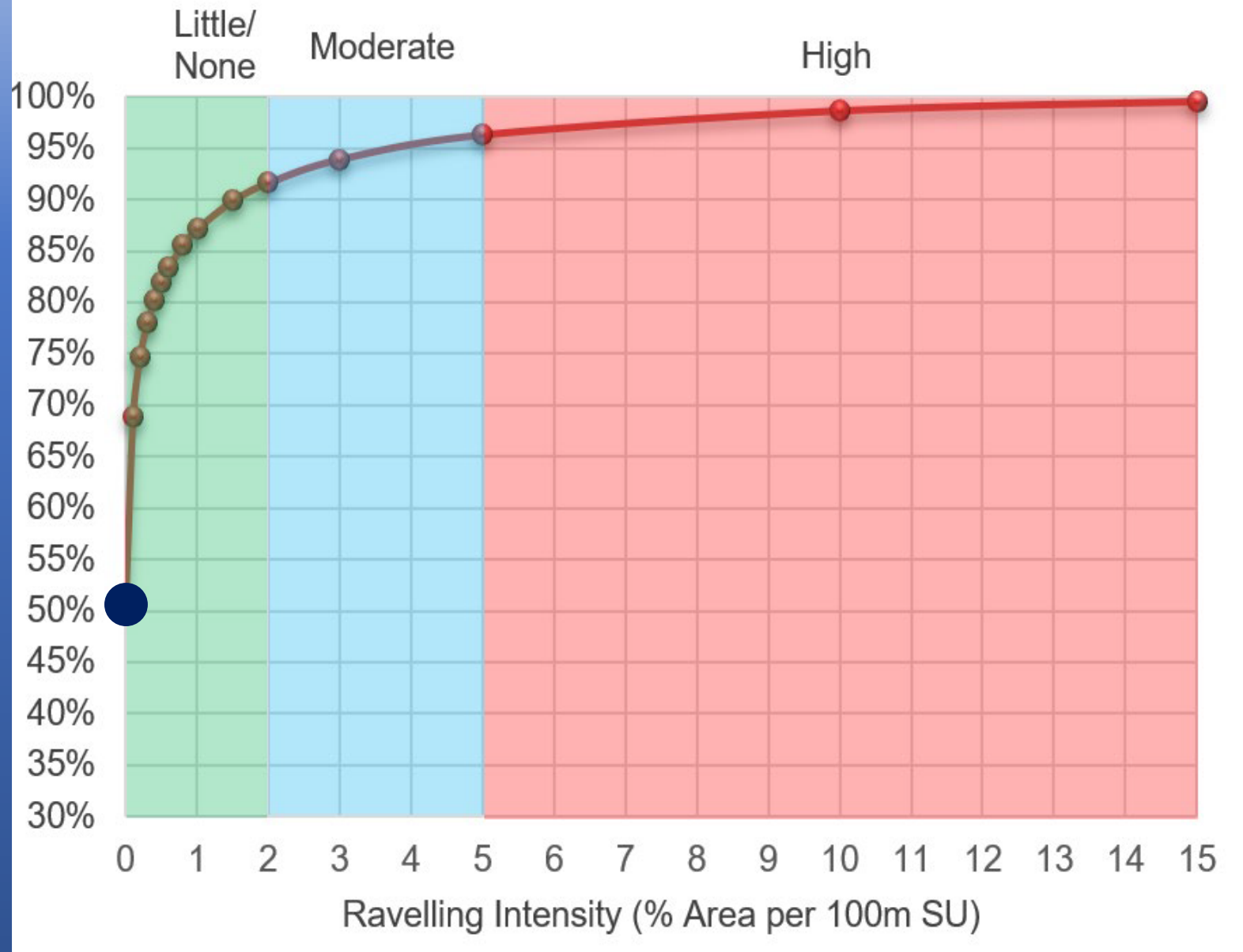




2024

c. 53%

No Ravelling

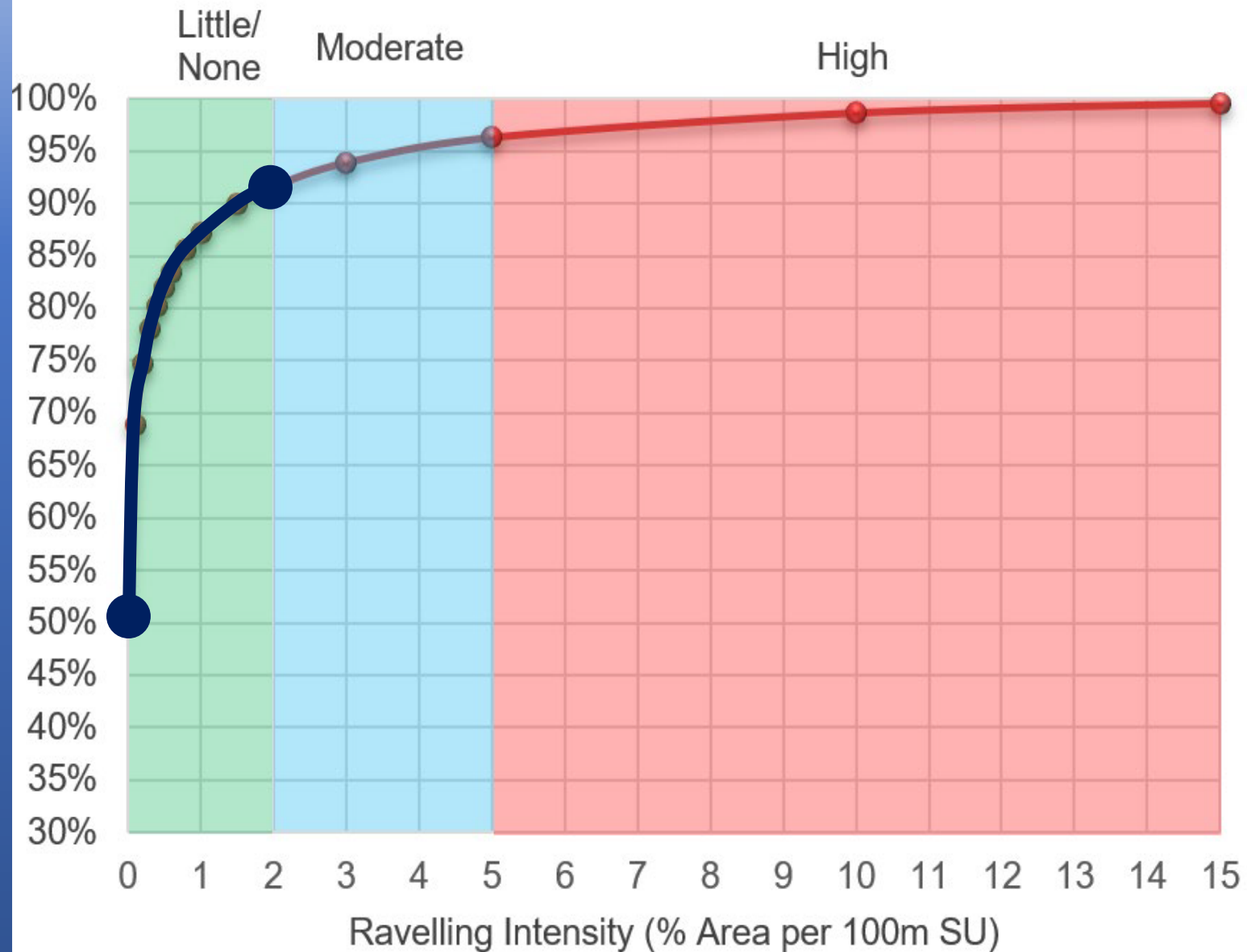




2024

c. 93%

Little to None Ravelling

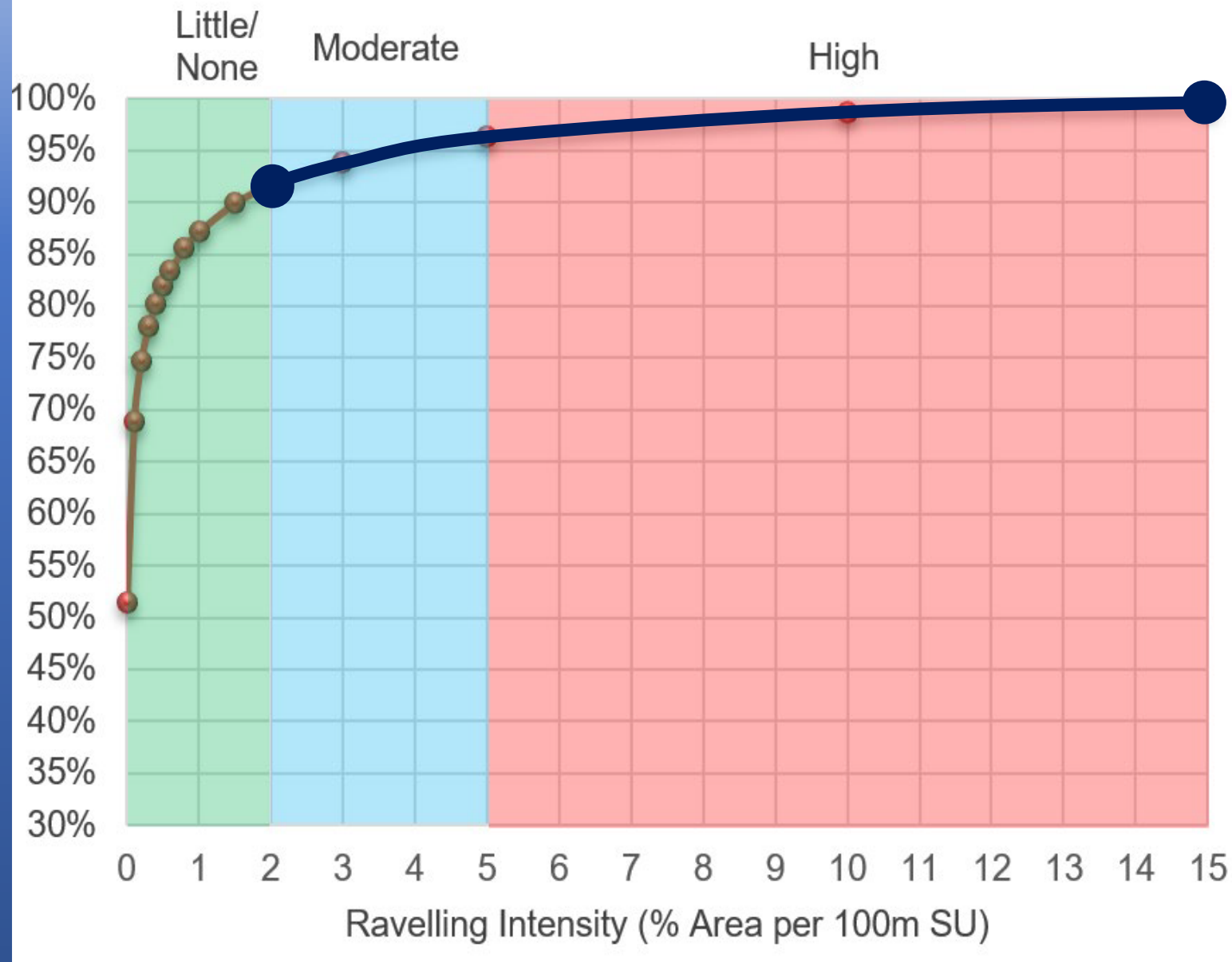




2024

C. 7%

Moderate to High Ravelling



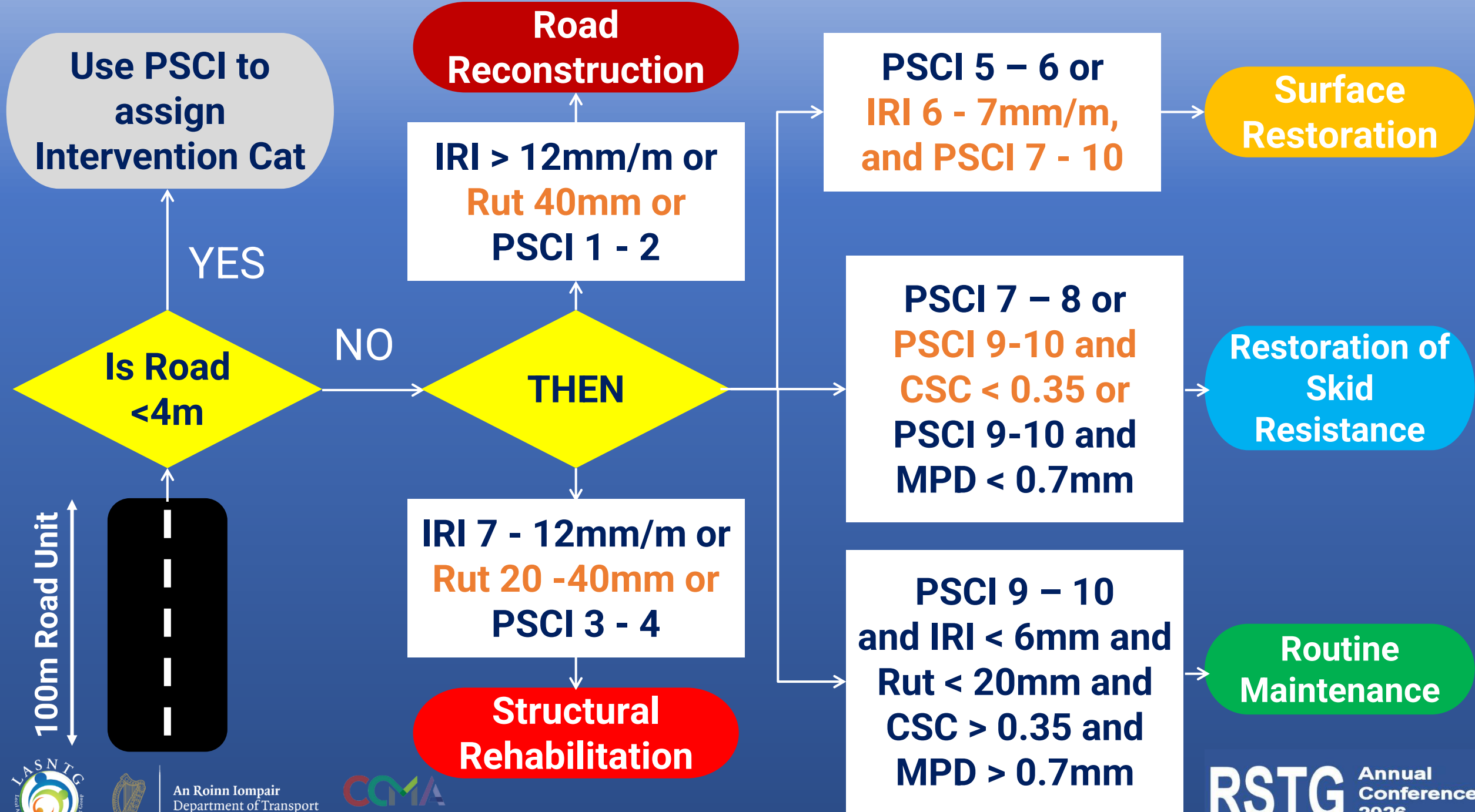
Interventions



PSCI Rating	Primary Rating Indicators
10	No Visible Defects
9	Minor Surface Defects
8	Moderate Surface Defects
7	Extensive Surface Defects
6	Moderate Other Pavement Defects
5	Moderate Other Pavement Defects
4	Structural Distress Present
3	Significant Areas of Structural Distress
2	Large Areas of Structural Distress
1	Extensive Structural Distress



PSCI Rating	Pavement Intervention	Permitted Grant
10	Route Maintenance	DG
9		
8	Resealing RSR (Restoration of Skid Resistance)	RM, SRM, DG, CI and RI for urban roads
7		
6	Surface Restoration Carry out Localised Repairs with surface treatment or thin overlay	RI, DG, CI
5		
4	Structural Rehabilitation Required to Strengthen Road Localised repairs prior to Overlay	RI, DG, CI
3		
2	Road Reconstruction Full depth reconstruction with extensive base repair	RI, DG, CI
1		

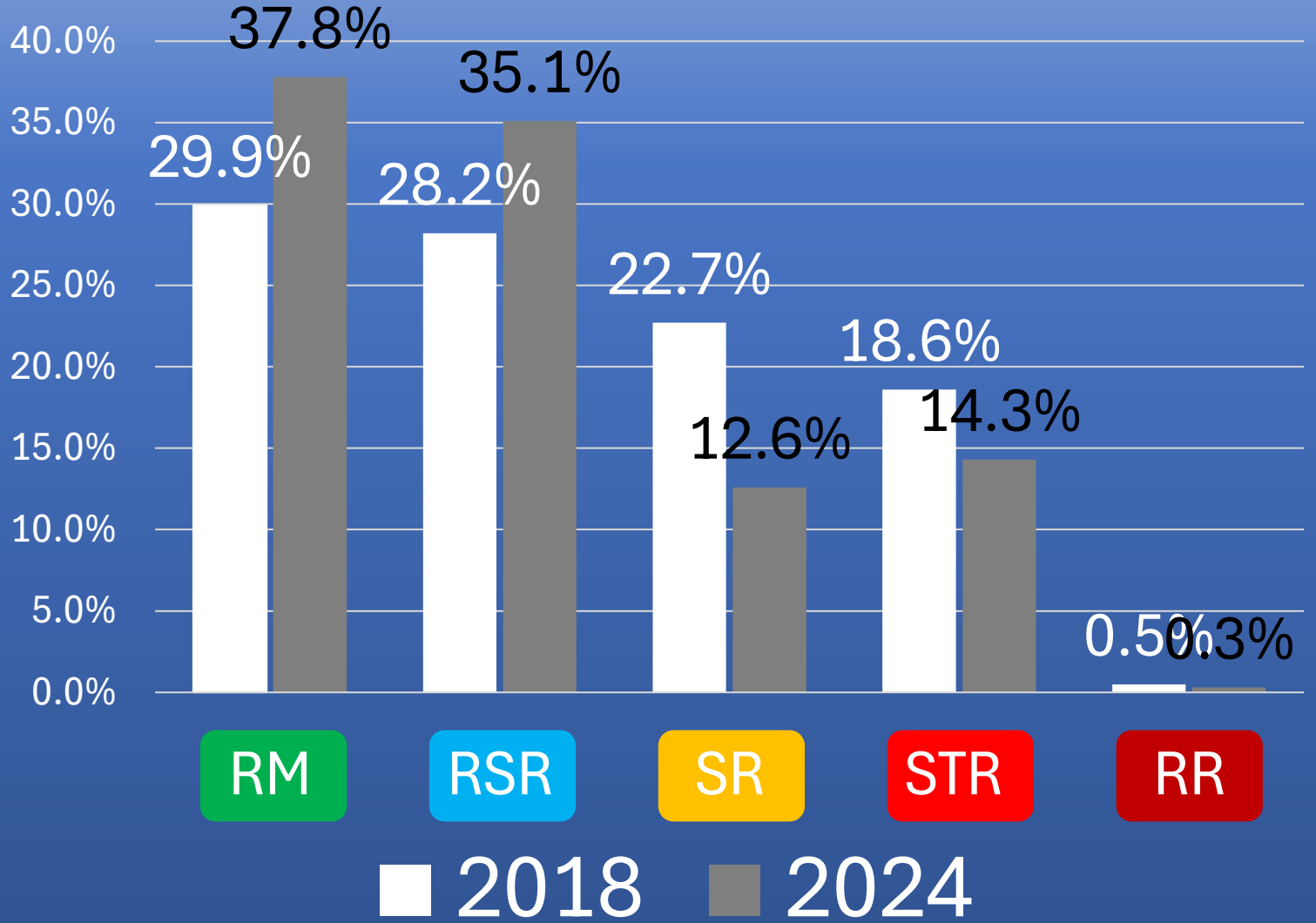


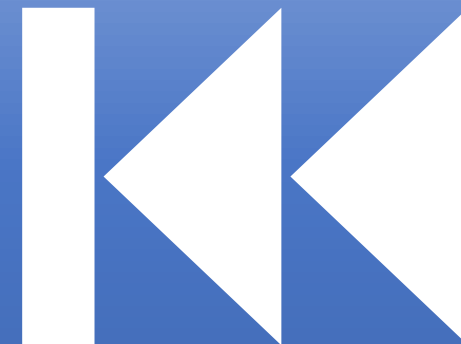
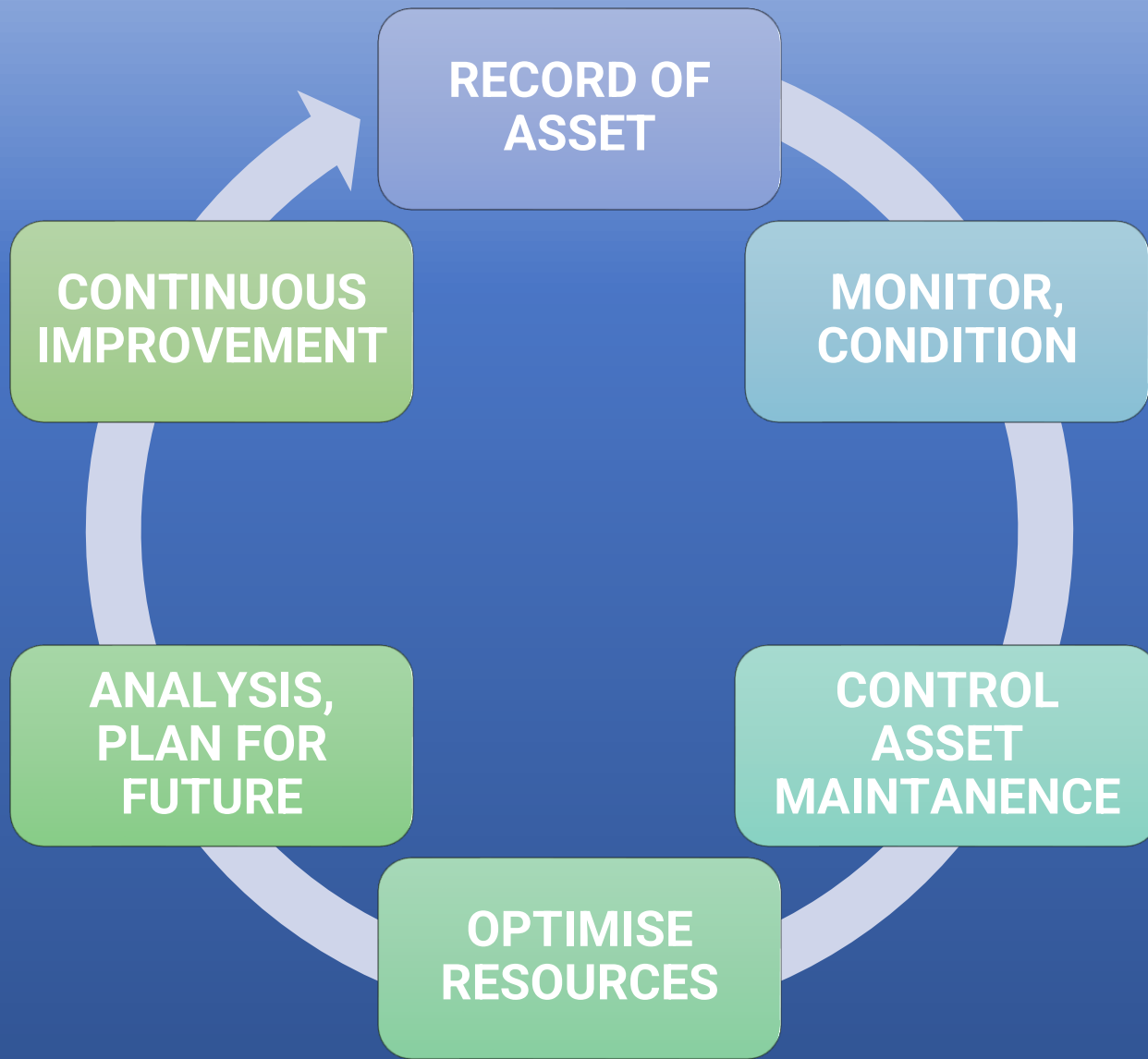
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Intervention Work Categories

Intervention	2018 (km)	2025 (km)
Road Reconstruction	60	34
Structural Rehabilitation	2418	1885
Surface Restoration	2952	1655
Restoration Skid Resistance	3663	4614
Routine Maintenance	3887	4969





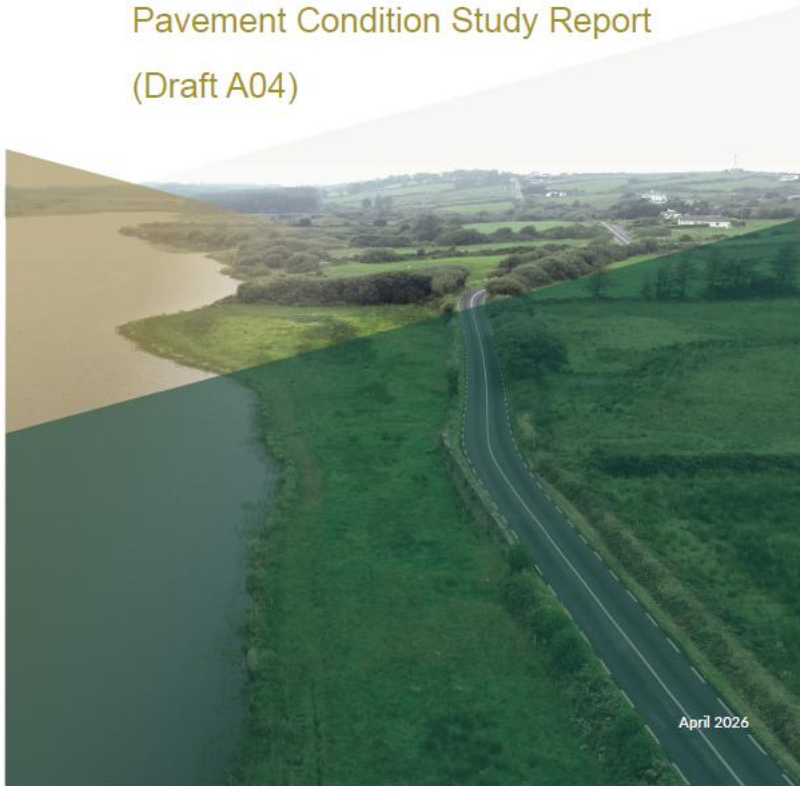


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Department of Transport

Regional Roads Condition Study 2024/2025

Pavement Condition Study Report

(Draft A04)



April 2026

Drill down to all values @ Local Authority Level



MapRoad

Asset Management System

contact@rmo.ie



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THANK YOU



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Join the Q&A session at **Slido.com**
and enter 2063208 or via the **QR**
Code.

**Questions must include name
and associated Local Authority
to be considered by the panel.**

