



# APSE Highways & Streetlighting Advisory Group Meeting September 2023

Reading Borough Council

Delivering ambitious road improvements whilst  
responding to the climate emergency



# The Highways Team at Reading Borough Council

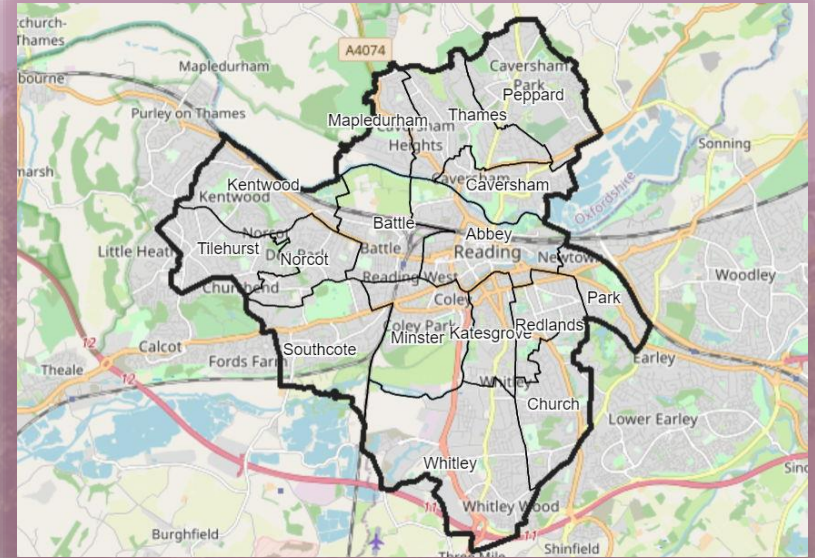




# Reading Borough Council

Reading is a Labour led unitary authority and the principal regional and commercial centre of the Thames Valley, also a major retail and leisure destination

- 160,337 Residents (2020 ONS)
- 65,410 Households (2020 ONS)
- 400 km of roads
- 80 Bridges and 300 other structures
- Streetlights: 11,500 (18,750 lighting units)



Healthy environment



Thriving communities



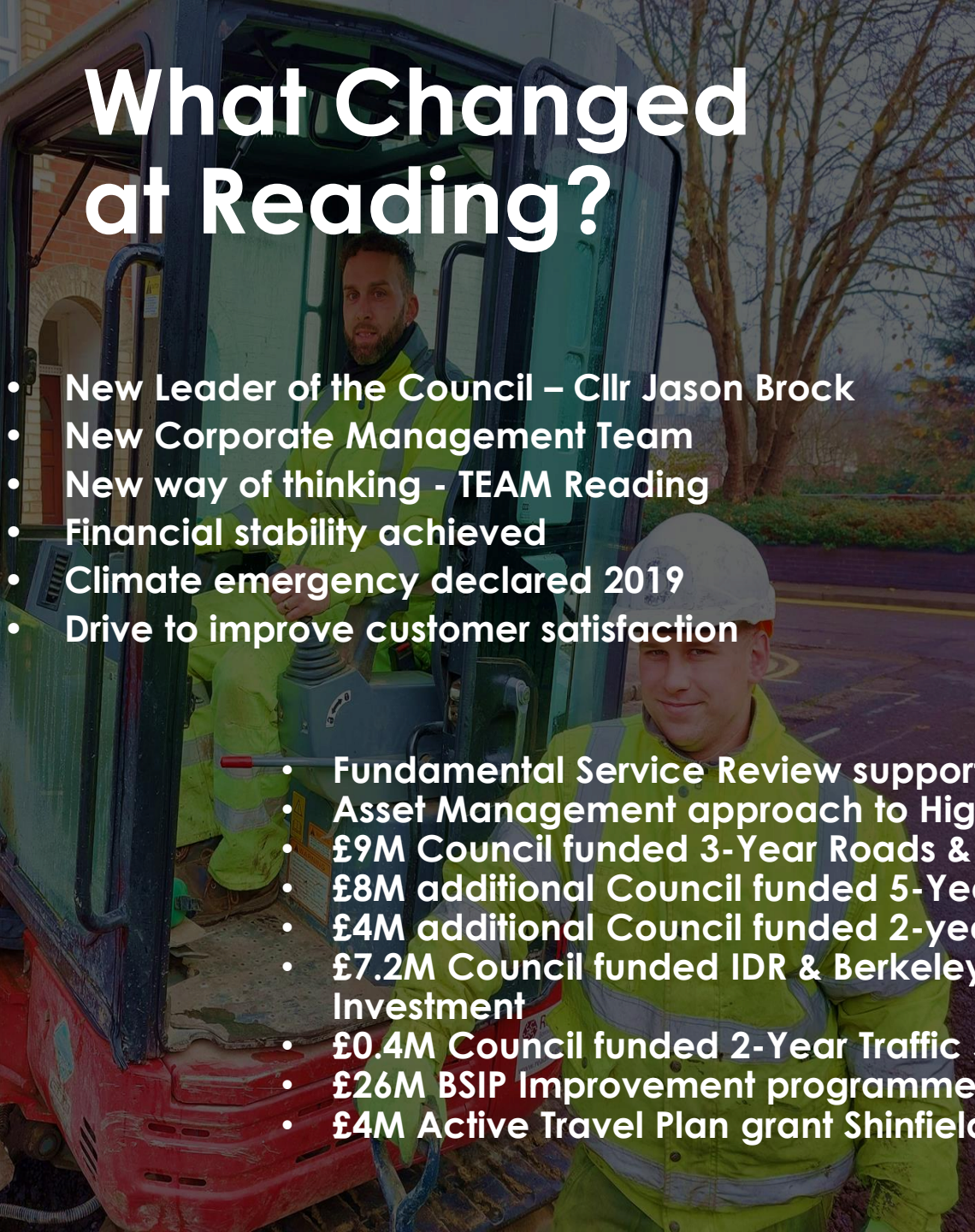
Inclusive economy





# What Changed at Reading?

- New Leader of the Council – Cllr Jason Brock
  - New Corporate Management Team
  - New way of thinking - TEAM Reading
  - Financial stability achieved
  - Climate emergency declared 2019
  - Drive to improve customer satisfaction
- 
- Fundamental Service Review supported by APSE independent review
  - Asset Management approach to Highway Assets – ASOR's
  - £9M Council funded 3-Year Roads & Footway Investment
  - £8M additional Council funded 5-Year Roads & Footway Investment
  - £4M additional Council funded 2-year Bridges & Structures Investment
  - £7.2M Council funded IDR & Berkeley Ave Bridges & Structures Investment
  - £0.4M Council funded 2-Year Traffic Signal Investment
  - £26M BSIP Improvement programme
  - £4M Active Travel Plan grant Shinfield Road & Bath Road





# Achievements

- Over 530 roads surfaced to date and counting
- Over 1 million m<sup>2</sup> of road surfacing to date and counting. Competitive tender returns accelerated programme with Kiely Bros. Ltd delivering record amount of micro asphalt schemes within Borough
- Developing in-House Highways team's skills
- 80 residential footways resurfaced (in-house) and counting
- 70 pedestrian crossings with tactile paving (in-house) installed at junctions and counting
- Contributing to Reading's climate emergency action plan
- Reading able to invest in unclassified residential roads & explore innovation
- Complaints and pothole reports at all time low
- 'Best in Britain' LCRIG Innovation recognition
- MJ Award Winner – Best Council Service
- Working with our contractors Kiely Bros. Ltd, Velocity, Meon, iTip Handles, Gaist & Vaisala is bringing innovation to Reading and becoming part of 'Business as Usual'



# Improvement in Residents Satisfaction

The gauges below show how Reading's 2022 results compare with previous year and with all other authorities in the survey. They show the number of scores that are above and below national average and the number that are improving or reducing compared with the previous year.

Above Average

Below Average

Improving

Reducing

 141

 8

 90

 53

The gauges below show Reading's highest and lowest satisfaction scores in the survey and the largest upward and downward changes in satisfaction since 2021.

Highest Satisfaction

Lowest Satisfaction

Biggest Improvement

Worst Decline

How easy buses are to get on/off (PT8105)

81%

Speed of repair to damaged roads (HM8130)

33%

Deals with potholes/damaged roads (HM???)

14%

The cleanliness of pavements (WCB103)

-5%

## Comparisons and Trends





# Road Surfacing Communication Strategy



## ROAD IMPROVEMENTS IN YOUR LOCAL AREA

Every year the council maintains **250 miles of roads and 500 miles of pavements**

In its last residents survey, the council asked people in Reading what their number one priority was for improvements and... **58% said better road surfaces!**

The council is investing **£9m over 3 years** focusing on roads in residential areas.

As part of the programme... around **400 roads and 100 pavements will be resurfaced** from end to end and **63 roads are being improved** in summer/autumn 2020 to begin the programme

#lovecleanreading

Reading Borough Council

Colouring competition winning entry – Josh aged 6 won a family meal at a local restaurant

## WHAT YOU CAN EXPECT DURING YOUR LOCAL ROAD IMPROVEMENT WORKS

- 1** You may have already noticed some pre-patching in your road - 'pothole' type defect repairs to ensure that the road is strengthened and level (20 minutes per repair)
- 2** A thin 'micro asphalt' surfacing layer (up to 20mm thickness) is laid. Road opened up as soon as material is set
- 3** There will be an initial loss of stones while the volatiles in the bitumen release and the material settles down, which takes a couple weeks. Road will seem rough and gravelly.
- 4** Road closed again and cars cleared for:
  - Sweeping loose material loose
  - Raising low iron works (gullies and manholes)
  - Painting road markings

**ENJOY USING YOUR SMOOTH NEW ROAD!**

#lovecleanreading

Reading Borough Council

## Another road repaired in your local community

For your chance to win a meal for 4 at the Thirsty Bear in Reading, tweet a photo of the completed picture to @readingcouncil or email it to communications@reading.gov.uk

Reading Borough Council

## Another road resurfaced in your community

We are resurfacing hundreds of residential roads and pavements in the borough as part of our biggest ever highways improvement scheme.

Reading Borough Council





# Responding to Reading's Climate Emergency

- Reading Borough's carbon footprint has fallen by 55% since 2005 - the 4th largest reduction out of 374 UK local authorities
- In 2021, Reading was added to the Carbon Disclosure Project's (CDP) 'A' list of cities taking 'bold climate action' and retained it's 'A' list status in 2022 - an accolade reserved for only 19 UK local authorities and 122 worldwide
- Tree planting (387 trees planted last year) & re-wilding programmes, Highways funding a further 225 trees this year with more to follow
- CIL Funded SUDS Pocket Gardens – working with Urban Planting to bring biodiversity to Reading and promote community engagement
- Emphasis on active travel – 2 new cycle lanes being created
- Contractors actively encouraged to reduce carbon at source
- Residential micro asphalt surfacing programme used 40% less carbon than conventional surfacing methods
- 15% less materials with the Miles Macadam Milepave for concrete road surfacing
- Electrification of RBC Fleet
- **Using Innovation to drive carbon savings**



Shinfield Road Active Travel Scheme



The Highway Team Electric Van



Volunteers planting Donated Miles Macadam 'Whips'



# Innovation Delivering a Sustainable Future



- **Multihog** Machine & **JCB** Pro
- **Meon** Fully Electric Road Marking machine
- **iTip** Handles
- **Gaist** Road condition surveys
- **Vaisala** Winter Sensor trials
- **Meon** Cold Applied MMA road marking & footway preservation
- **Yunex** Traffic Signal Micro Sensors
- **Solaris Lighting** CCTV and power adaptor trials
- **Velocity** Carriageway Preservation
- **Miles Macadam** Concrete road solution including trial of zero carbon grouting
- **Kiely Bros Ltd / Univrses** - carrying out video surveys at own cost to help Reading determine low-cost solutions & low emission products for our schemes using 3DAICity software
- **Collaboration: M4/J11 Scheme RBC, Kiely Bros, Velocity, Meon & funding from National Highways**
- **LCRIG – Paula Claytonsmith** visiting Reading this month to look at our innovation programme



# Commercial Approach whilst Enhancing Team Skills

- Commercial Journey began in 2008
- Developed operatives' skills
- Moved from pothole repairs to small schemes with commercial ambition
- Highways Operations Team budget -£450k pa
- All statutory highway repairs fully funded by commercial approach.



Jordon Brookson H&D Senior Operative

## Staff Training

### Apprenticeship Programme

- 14 staff members completed Plant Operators NVQ
- 1 staff member completed Supervisors NVQ
- All new staff receive NRSWA StreetWorks Accreditation through this programme
- Highways & Drainage Operative apprenticeship post created
- Upskilling existing Operatives
- Succession planning







Any  
Questions?

Thank You







# Road Markings Asset Management Planning

## RAMP

APSE Scotland Road and Street Lighting AG Group

John Warne – Business Development and Marketing Director

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01/09/2023







- Why do we need RAMP?
  - Code of Practice
- What is RAMP?
  - Levels and options available
  - Retroreflectivity Survey
  - Conditional Survey
  - Asset Management
  - Data based decision making
- Outcomes of RAMP
- What next?







Why do we need RAMP?



# Managing Infrastructure

Being asked to do more with less

   [Departments](#) [Worldwide](#) [How government works](#) [Get involved](#)  
[Consultations](#) [Statistics](#) [News and communications](#)

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Guidance

## Local highways maintenance incentive fund

Guidance and a self-assessment questionnaire for the local highways maintenance incentive fund.

UK ROADS LIAISON GROUP

## WELL-MANAGED HIGHWAY INFRASTRUCTURE: A CODE OF PRACTICE



# Assisting Local Authorities

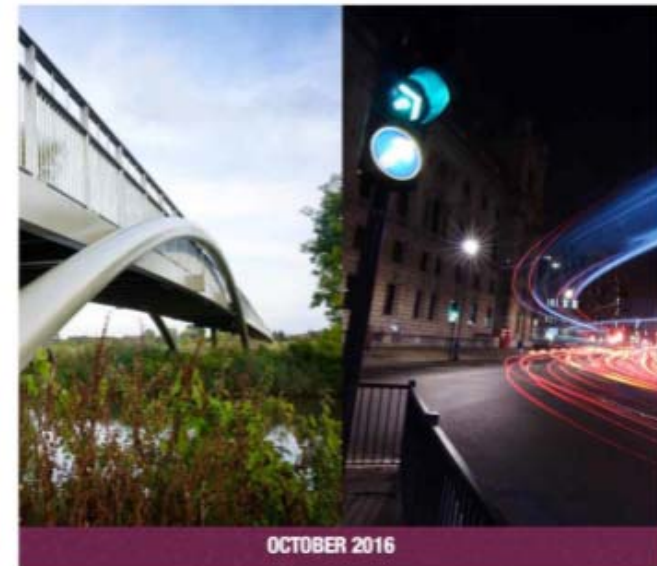
## What is outlined in the code of practice?

Well Managed Highway Infrastructure: A code of Practice.

- B.5.14. SERVICE INSPECTION OF ROAD MARKINGS AND STUDS
- B.5.14.1. Inspections in respect of wear, spread, colour, skid resistance and retroreflectivity shall be undertaken for paint markings and for thermoplastic markings, at frequencies determined by risk assessment.
- Inspections for reflective conspicuity should be carried out during the hours of darkness and programmed to enable maintenance works to be completed before the onset of winter.

UK ROADS LIAISON GROUP

## WELL-MANAGED HIGHWAY INFRASTRUCTURE: A CODE OF PRACTICE





## Self Assessment Fund (Band 3)

*“The authority should have lifecycle plans to demonstrate what investment is required to achieve its performance targets and, where this investment is not available, the likely shortfall. It is aimed specifically at major assets”*



What is RAMP?





# RAMP

Codes of Practice & Incentive funds for Highways

## Level 1 RAMP

- Retro reflectivity survey
- Report indicating performance of surveyed network

## Level 2 RAMP

- Enhanced reporting via Asset Management system

## Level 3 RAMP

- Conditional survey of road marking assets
- Additional data sets

# RAMP Level 1

## Standard Retro Reflectivity Survey

## Latest Surveying Machines

- RetroTek D Scanner recently added to the fleet, increasing our capability

## Lines and Studs

- Measures the retro reflectivity of lines on both sides of the carriage way
- Counts the studs that are working – identifying areas where studs will need looking at

## Standard Reporting

- Red, Amber, Green reporting direct from the survey machine
- Fast results

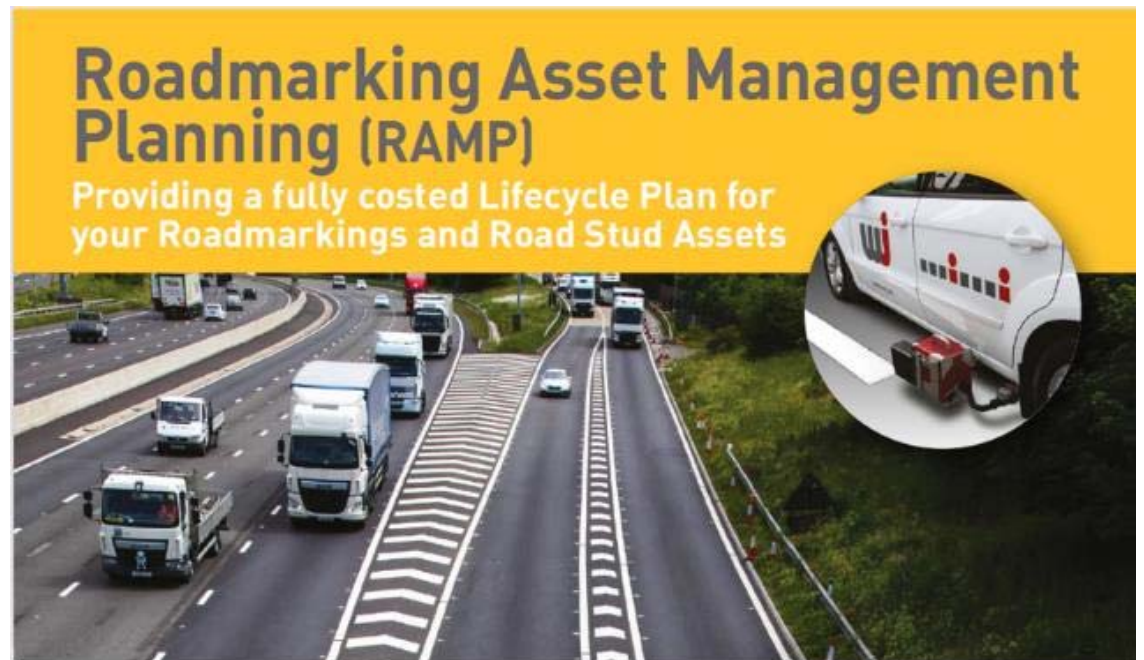




# RAMP Level 2

## Enhanced Asset management reporting

- Retro Reflectivity survey loaded into our asset management tool – quickly giving a through picture on the state of the network



# Retro Reflectivity



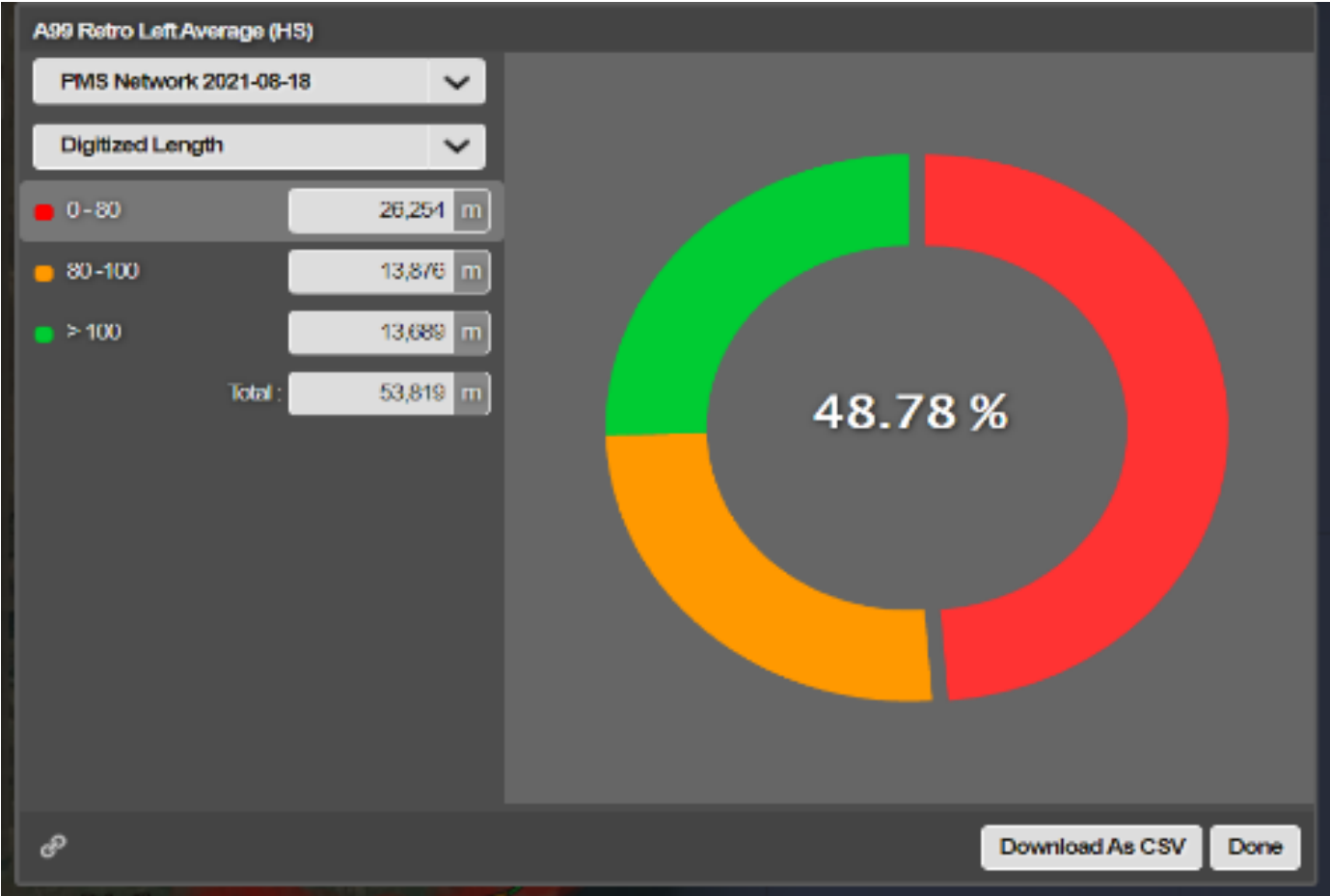


# Resilient Road Network

Conditional Survey



# Asset Management – Quantifying Condition

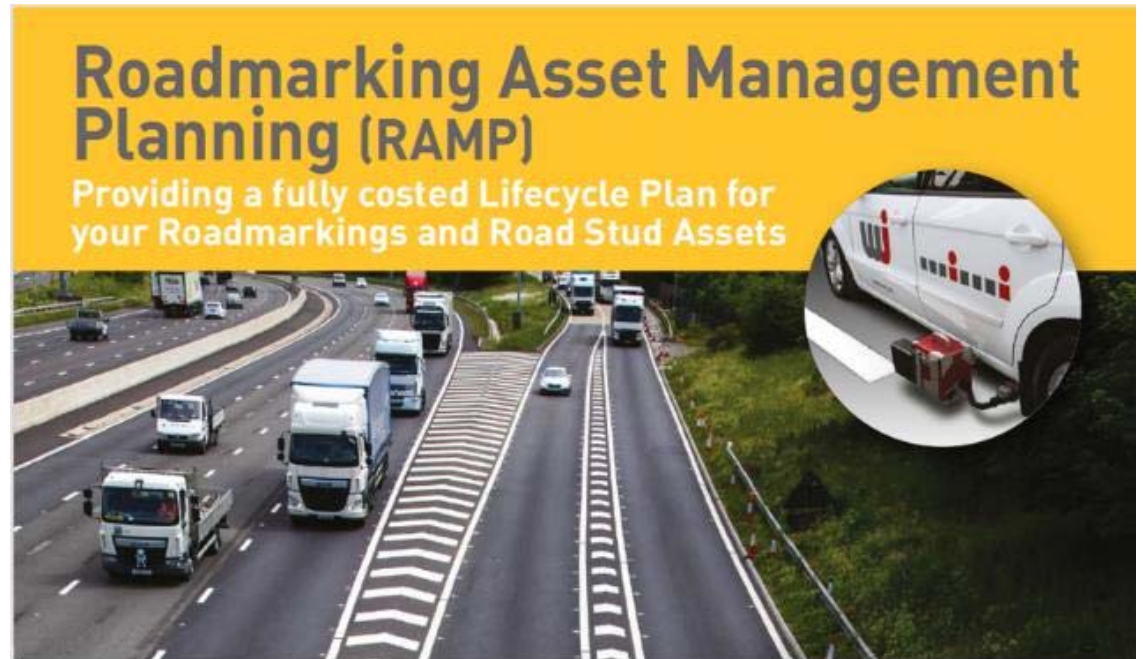




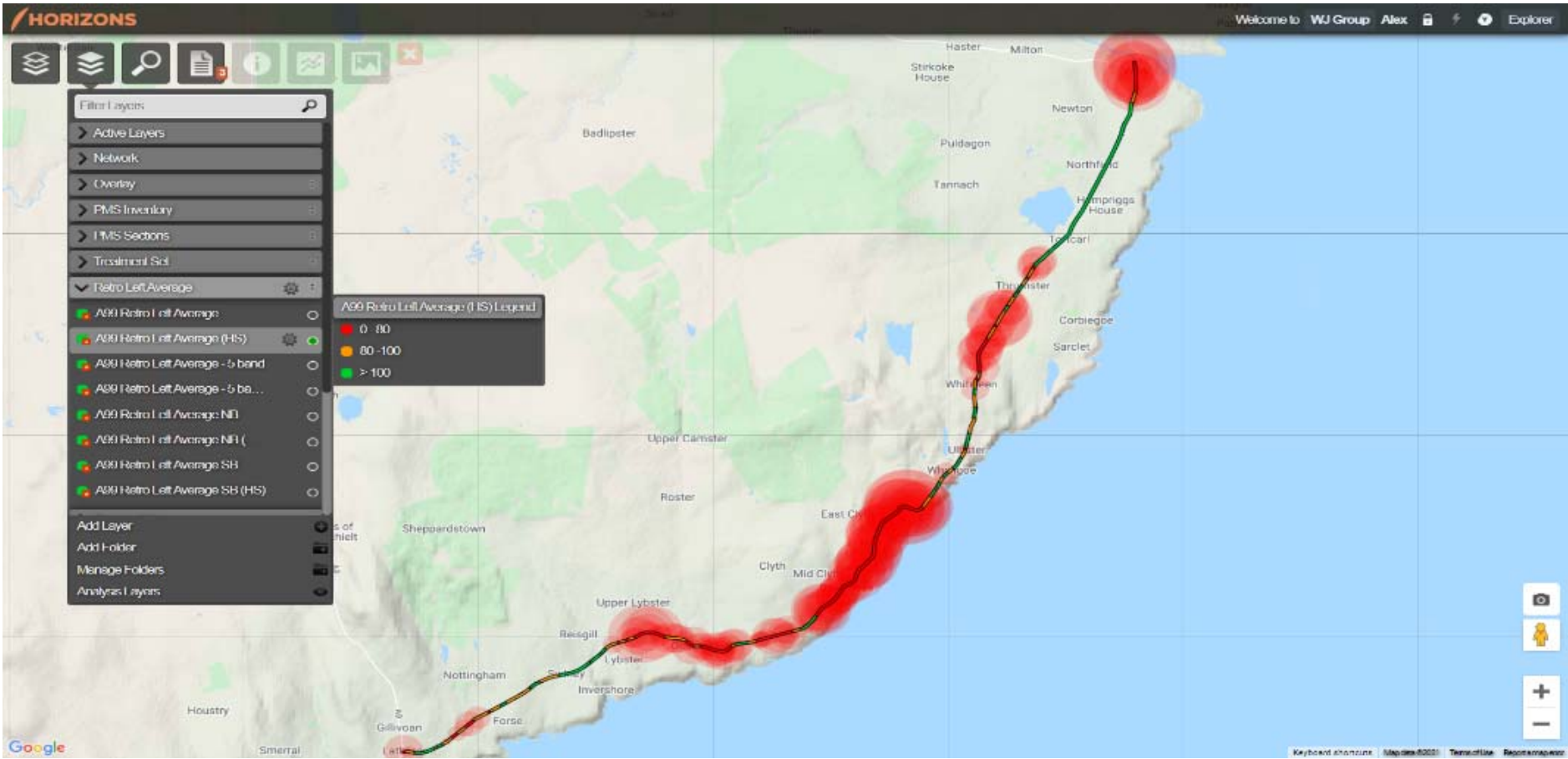
# RAMP Level 2

## Enhanced Asset management reporting

- Retro Reflectivity survey loaded into our asset management tool
- Groups together lengths of road markings that require interventions to create efficient to deliver, carbon reducing schemes of work
- Providing spending profiles based on survey data and software analysis
- Modelling options for different treatments
- Can provide work packages for period
- Carbon cost of schemes can also be calculated

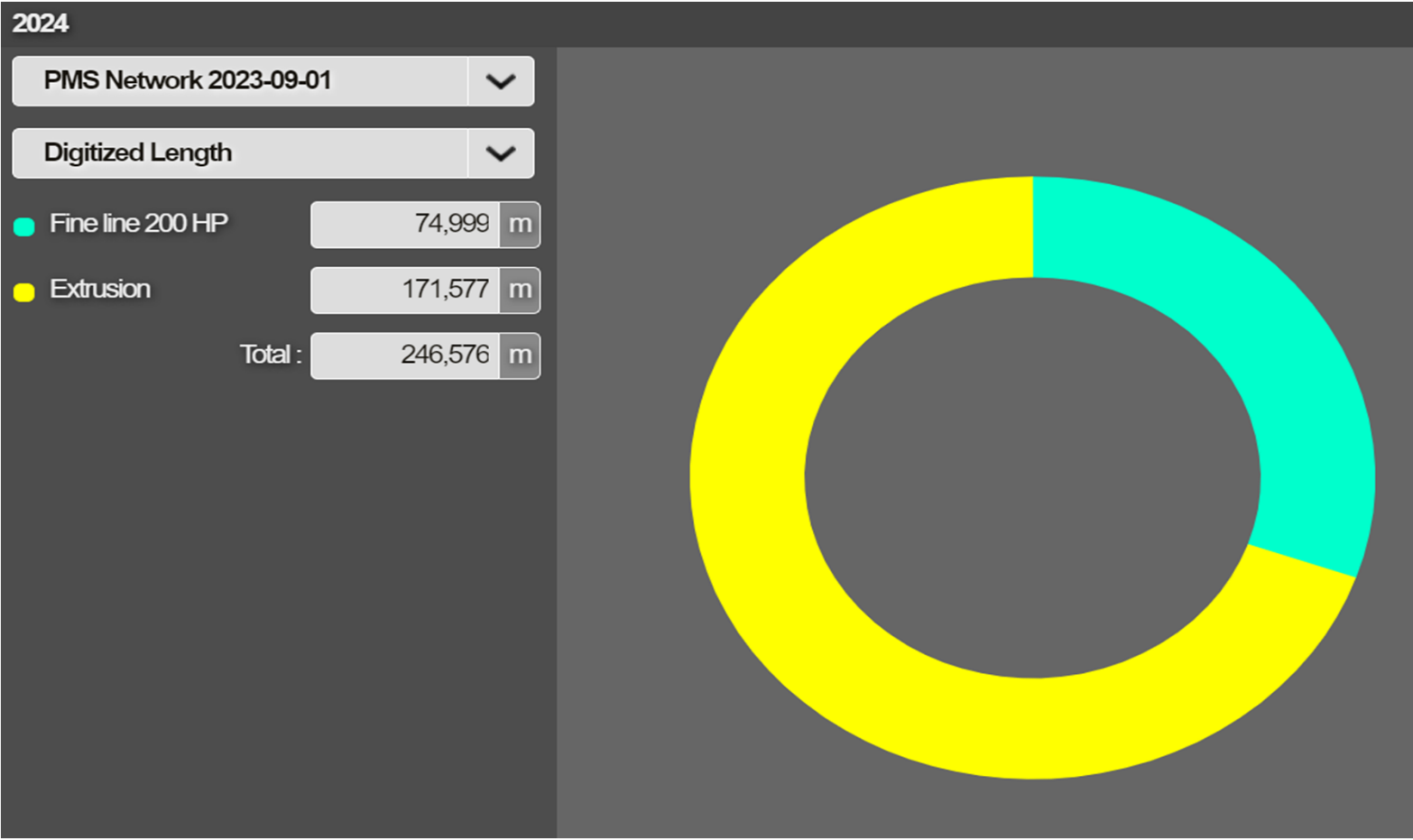


# Asset Management - **Prioritising**



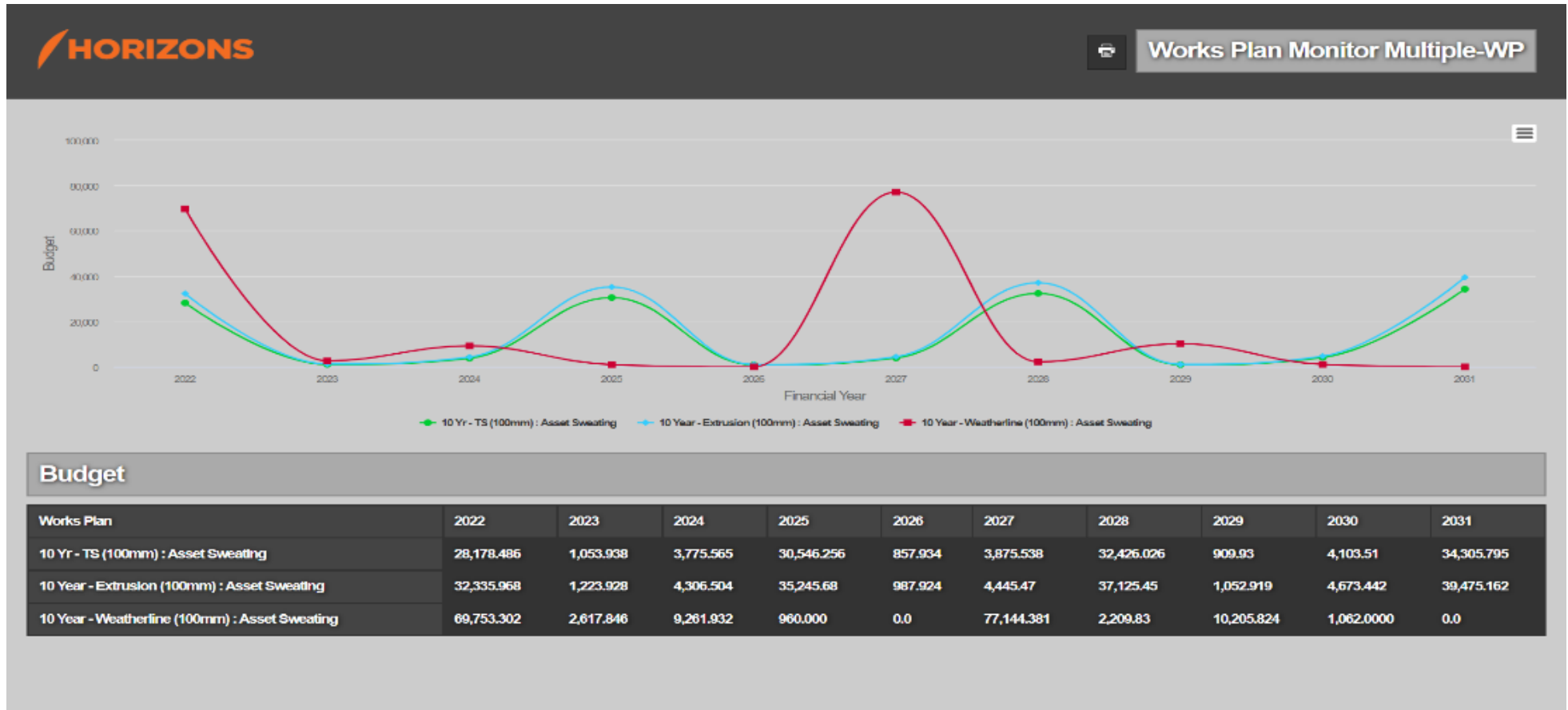


# Works Schedule for 2024

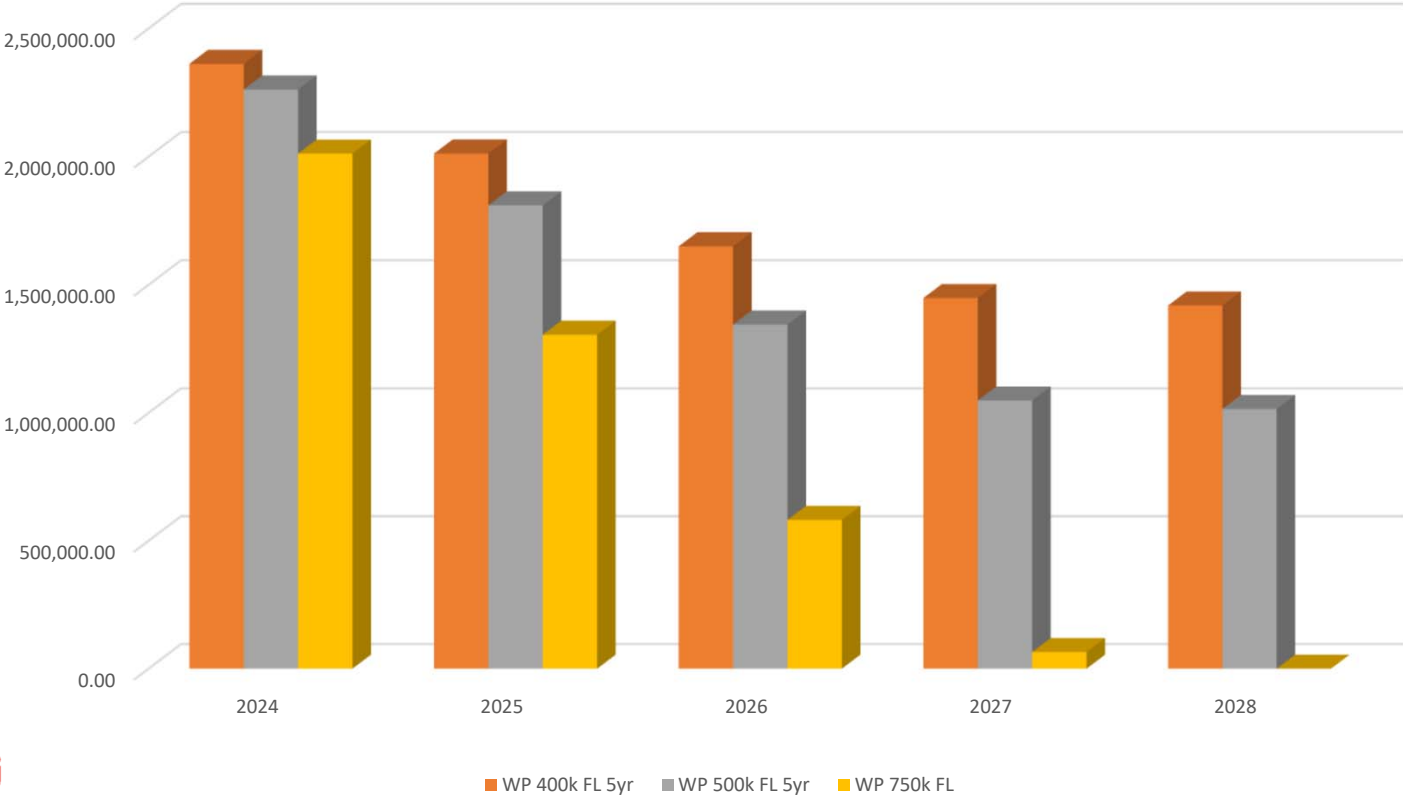


| Treatment        |     |
|------------------|-----|
| Extrusion        | 70% |
| Fine line 200 HP | 30% |

# Asset Management – Spending profiles

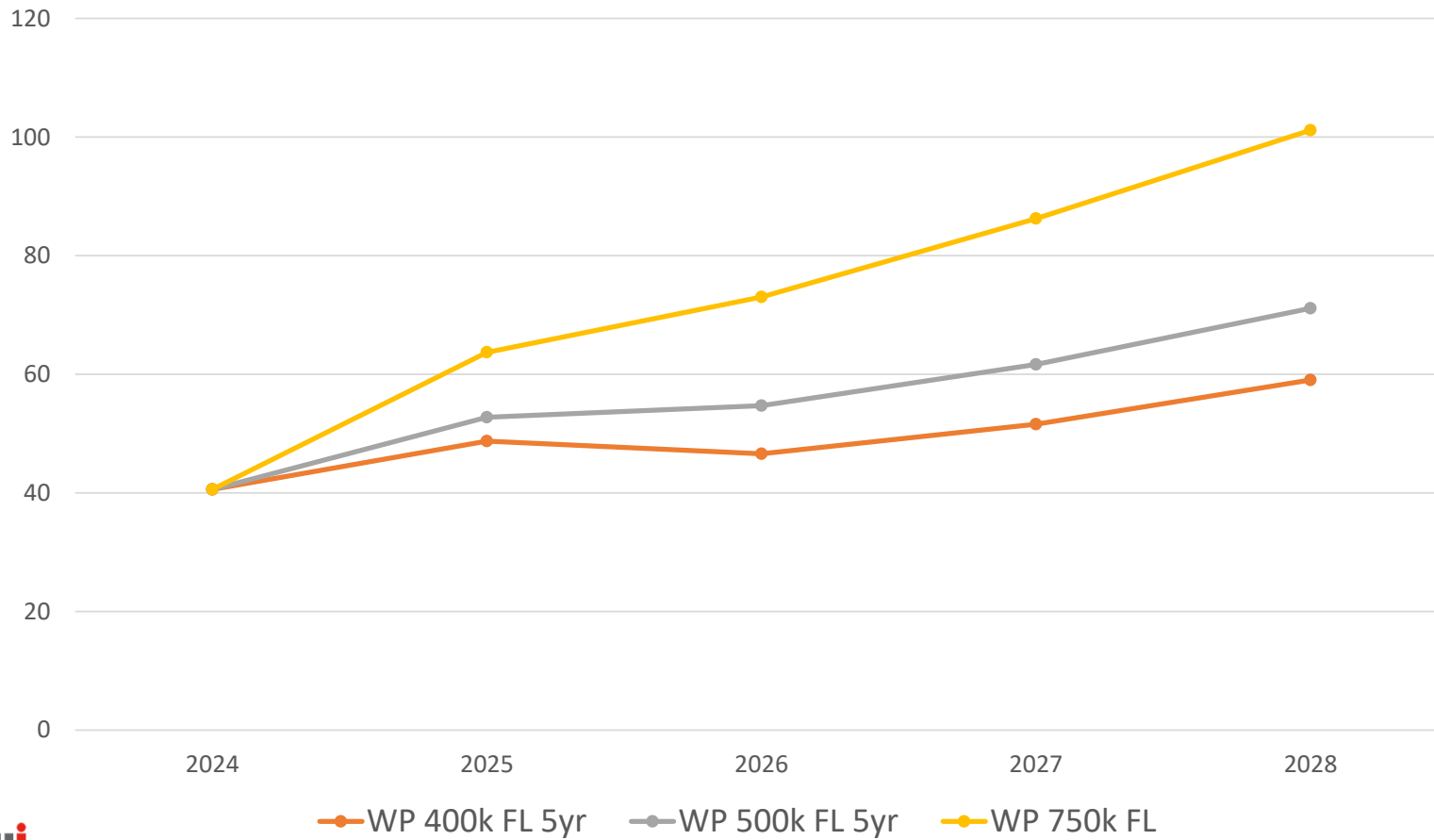


# Maintenance Back Log



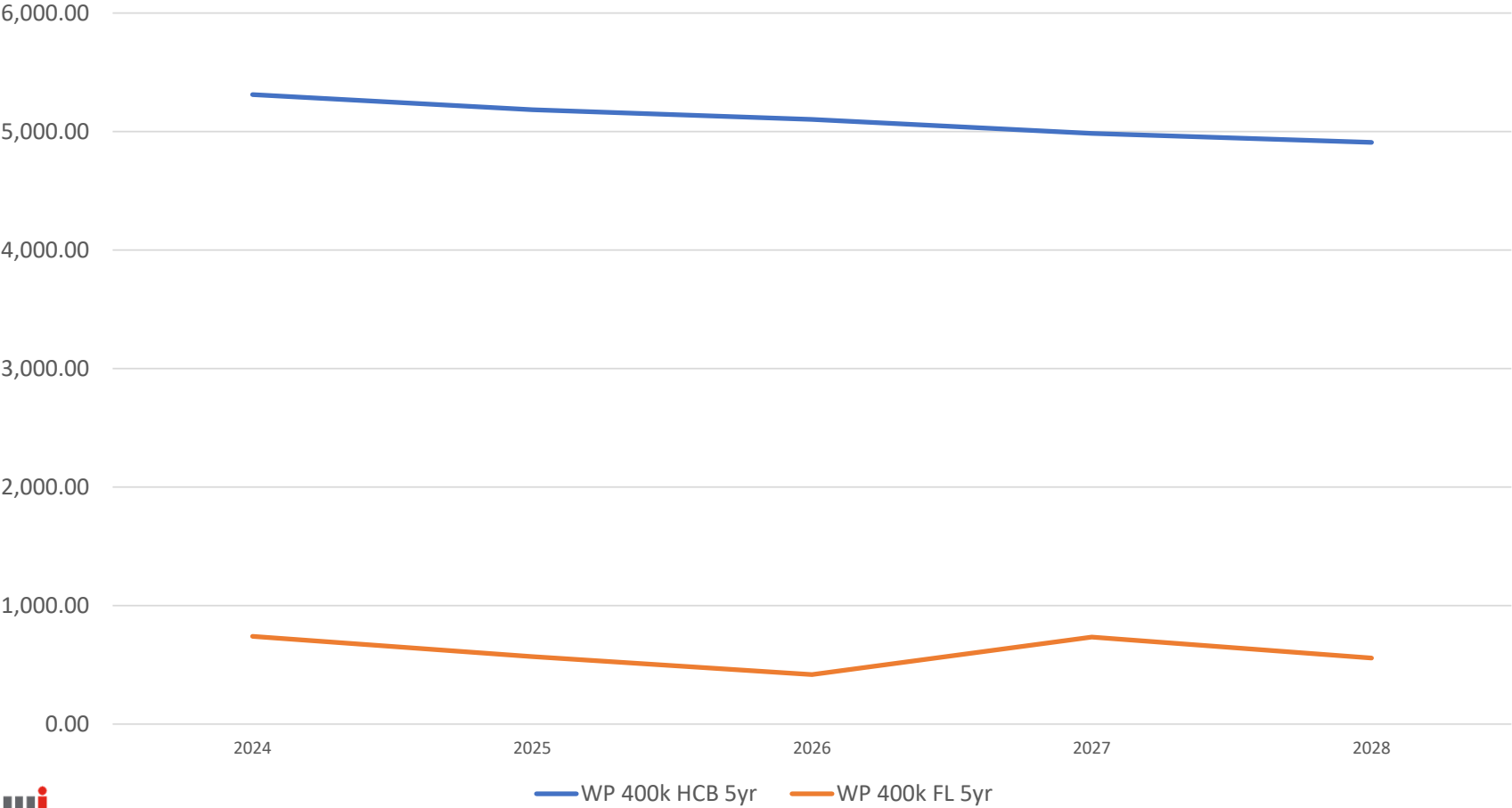


# Mean Retroreflectivity value of the network



# Carbon Cost

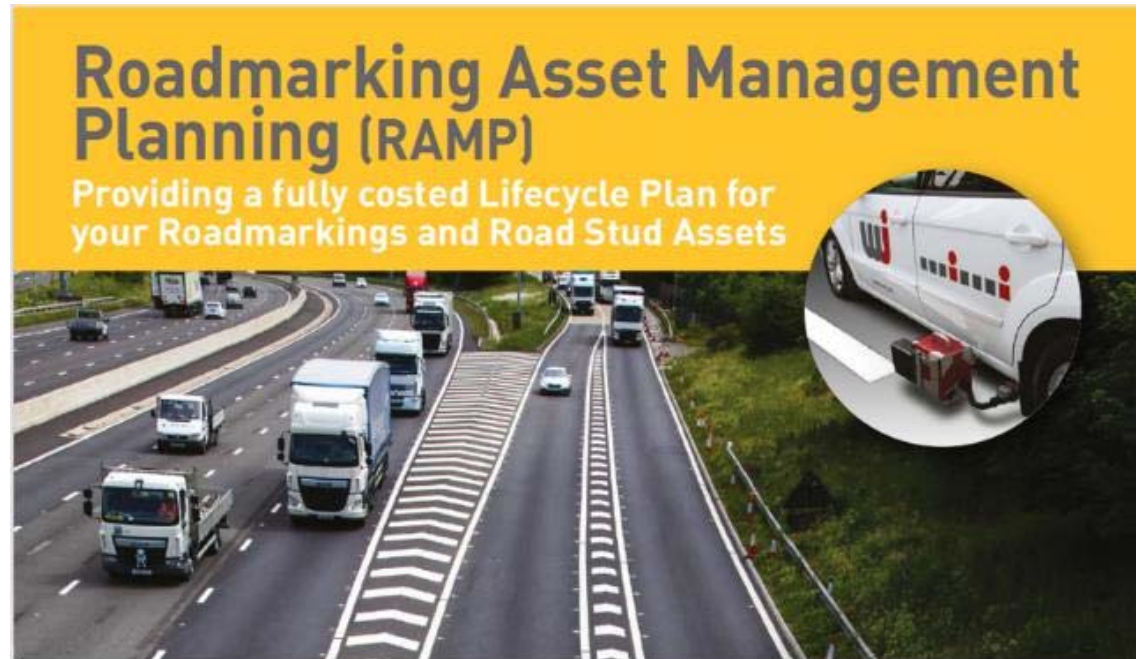
Bio Resin based v Hydrocarbon based Thermoplastic



# RAMP Level 3

Support data-based decision making

- Conditional Surveys
- External data
  - STATS 19 data
  - Road surfacing plans
- Complete view of Road Marking environment
- Supports sophisticated decision making with clear data supported evidence







# Outcomes

# RAMP Deliverables

- Survey of retro reflectivity performance of the network
- Supporting the Local Authorities and their partners to deliver an evidence backed asset management policy and strategy for road markings and road studs
- Life cycle planning for road markings
- Work programmes to support efficient delivery and carbon reduction





What next?





Thank you

Any Questions?

# THE CASE FOR SURFACE DRESSING

KEEPING OUR ROADS SAFE, WITHOUT COSTING THE EARTH.



The **pothole pandemic** grows each year resulting in damage to vehicles travelling over them.

However, we have **sustainable surface treatments** that can prevent pothole formation.

## **SO WHY ARE WE LOOKING FOR A POTHOLE SOLUTION WHEN WE HAVE SURFACE TREATMENTS THAT CAN SUCCESSFULLY TREAT THE PROBLEM?**





# LOCAL AUTHORITY PRESSURES

Local authorities have a statutory **RESPONSIBILITY** to ensure that their road networks are maintained to a safe and serviceable condition.

There is mounting pressure for local authority Highway Engineers and Asset Managers to:

**OPTIMISE** the use of allocated highway maintenance funding.

Deliver value for road users and taxpayers.

Minimise the **FINANCIAL** implications, risks and **ENVIRONMENTAL** impacts.

**Preventative Surface Dressing treatments must be considered as a highly advantageous solution.**



## SOME FACTS TO BEGIN WITH

Local authorities in England and Wales maintain **97%** of our road networks.

With an asset value of over £400 billion, it is the largest physical asset owned by the public sector.

The road network is fundamental to economic growth and prosperity.

It connects communities, workers, consumers and businesses.

In addition, the network provides opportunities for investment and developn



**Success is dependent on Asset Managers taking the strategic decision to prioritise proactive preventative interventions, to ensure long-term resilience and lifetime value.**



# A LONG-TERM APPROACH IS WHAT IS NEEDED...

Pothole repairs are extremely **EXPENSIVE** and **DISRUPTIVE** to the UK taxpayer.

In 2021/22, a pothole was filled every 19 seconds, with a total annual cost of £107m– the highest cost since 2015/16\*

Repairing a significant number of potholes **is not a sign of success, but a sign of failure.**

## WHY?

\* Source: AIA Alarm Survey 2022



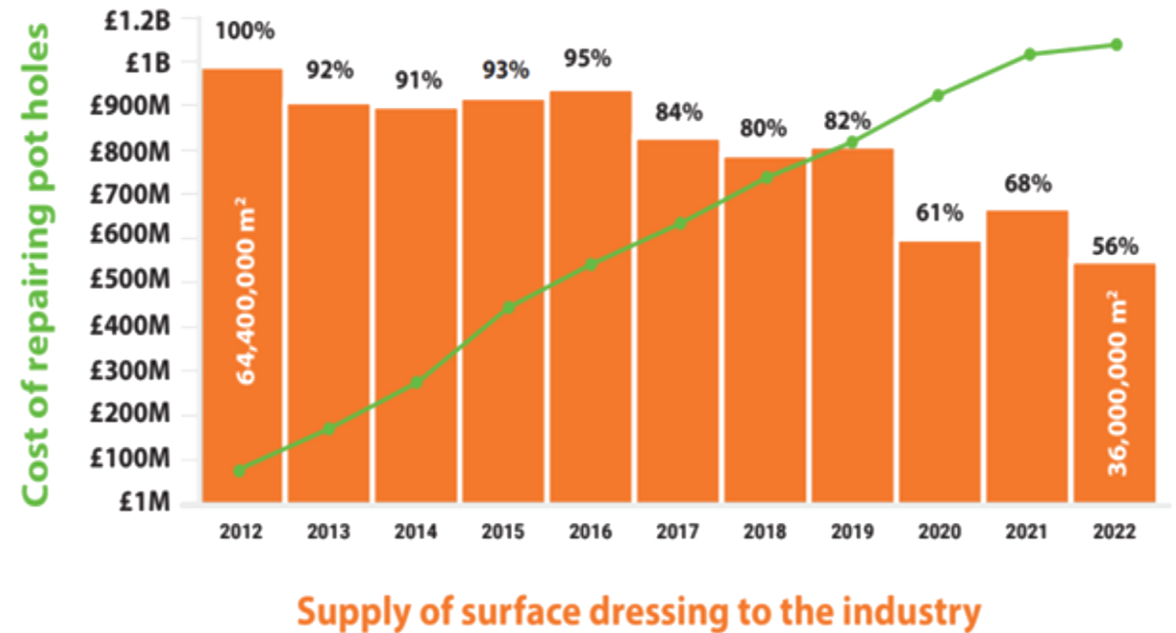


# THE DECLINE OF SURFACE DRESSING TREATMENTS

According to statistics from the Department for Transport the percentage of roads (A, B & C) receiving Surface Dressing treatment has **DECLINED 30%** since 2016.

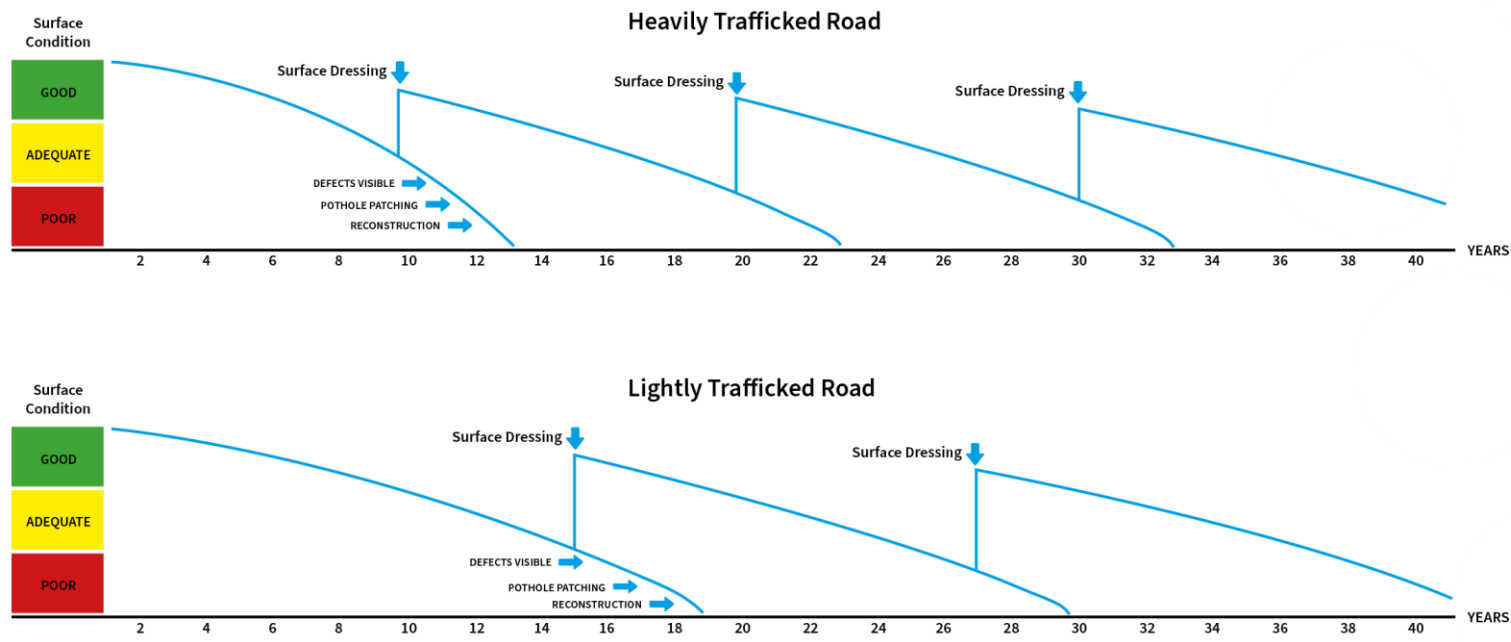
This is mirrored by feedback from REA Members who report a **44% DECLINE** in the application of Surface Dressing over the 10-year period from 2012 to 2022.

As the **DECLINE** in Surface Dressing continues, the **AMOUNT** and cumulative **COST** of fixing potholes over the 10-year period **HAS RISEN** significantly.

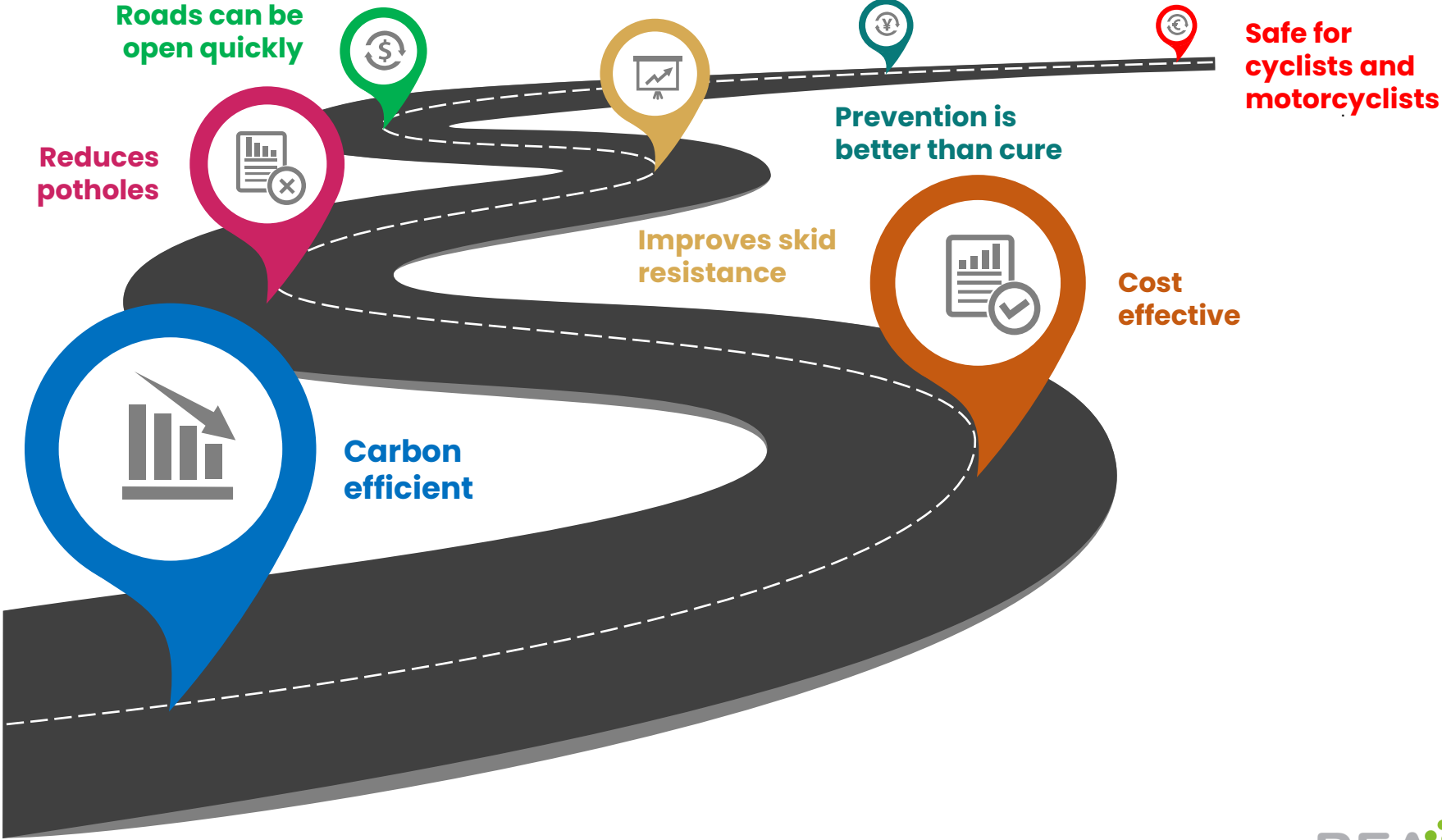


# THE CASE FOR SURFACE DRESSING

The application of Surface Dressing at the correct intervention periods is the most **COST-EFFECTIVE** method, **FINANCIALLY** and **ENVIRONMENTALLY** to **IMPROVE** skid resistance and **SEAL** the road surface. It will stop the **INGRESS** of water and help to **PREVENT** pothole formation.



# THE ROAD TO SUCCESS WITH SURFACE DRESSING



**SAFER ROADS SAVE LIVES**



## A MODERN APPROACH...

Using **PROVEN** technology, polymer modified, high performance bituminous emulsions, are used together with modern plant and equipment.

The development and introduction of proprietary encapsulation systems has also improved the chipping retention that provides a “new road” look for a fraction of the cost.

**ENCAPSULATION** enables Surface Dressing chippings to be **LOCKED** into the surface, resulting in a **SAFER** drive, especially for cyclists and motorcyclists.

It also gives an aesthetic **APPEARANCE** to the road surface and can enable the carriageway to be trafficked **QUICKLY** following application.



# SURFACE DRESSING IS COST EFFECTIVE

Typically, a **6-METRE-WIDE ROAD** of one kilometre in length (6,000/m<sup>2</sup>) can be Surface Dressed for approximately **£30,000** resulting in a service life of **10-15 years**.

10 to 15 years is equivalent to the service life of an untreated asphalt surface course system.

To fully resurface the same road, in traditional asphalt surface course using primary aggregate could cost up to ten times the amount and without surface treatment intervention, may not last any longer.

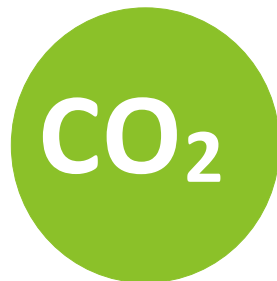
Therefore, for the cost to repair potholes an additional **3,500 KM** of local roads could be Surface Dressed, thus preventing the need for costly and time-consuming interventions and the future costs of pothole repair.



# SURFACE DRESSING IS MORE CARBON EFFICIENT

According to the latest RSTA research – RSTA Carbon Emissions for Road Surface and other Maintenance Treatments – Report and Guidance – launched earlier this year, **SURFACE DRESSING** was confirmed as one of the most carbon efficient surface treatment solutions available to highway asset managers.

**Surface Dressing** uses up to **75% LESS BITUMEN** and up to **80% LESS AGGREGATE** per square metre than thin asphalt surface courses.

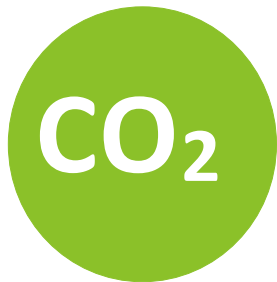


# SURFACE DRESSING IS MORE CARBON EFFICIENT

Surface Dressing interventions extend the surface course design life. If untreated, deterioration eventually results in the need to resurface.

Resurfacing a **6,000 M<sup>2</sup> ROAD** with a **40 MM SURFACE** course being laid on top, the amount of aggregate used will be approximately **580 TONNES**. To transport this aggregate to site will take 30 vehicles, plus the same again for the disposal of the planed surface.

Bitumen emulsion binders used in Surface Dressing are sprayed between **85°C** and **90°C** meaning significantly less embedded carbon is required than in asphalt surfacing.







# THE CASE FOR SURFACE DRESSING

AS PART OF A SUSTAINABLE  
PROACTIVE MAINTENANCE STRATEGY

# IN CONCLUSION

Surface Dressing not only significantly **EXTENDS** the service life of the pavement, it provides a reduced impact on the environment, and can also be reapplied over several years.

## IN SUMMARY:

As a result of the **DECLINE** in the use of Surface Dressing, there has been a significant increase in the amount of potholes and in the costs to repair the damage. This is of no coincidence and there is a need to **REVERSE** this decline to help **SOLVE** the UK pothole pandemic.

Surface Dressing is a **LOW-COST** solution for **RESTORING** and **PROTECTING** road surfaces.

It provides a good **RESISTANCE** to skidding.

It is one of the most **CARBON EFFICIENT** surface treatments.

It prevents water **INGRESS**, reducing **CRACKS** and **POTHOLES** from forming.

It can be up to **TEN** times cheaper than other methods.

It is a **QUICK** process and roads can be trafficked sooner.



# FINALLY

And finally.... the application of **SUSTAINABLE**, low-carbon, Surface Dressing systems on some of the “Amber” and “Green” local authority roads, will further **EXTEND** the life of that road. It will result in **FEWER** potholes and prevent these routes from becoming “Red” thus resulting in **COSTLY** and **DISRUPTIVE** repairs.

Taking the appropriate decisions by adopting **LONGER TERM** strategies for the future, together with early intervention to **PREVENT** rather than cure road defects, local authorities can achieve significant financial advantages.

