



THE ROAD SURFACE TREATMENTS ASSOCIATION

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# Decarbonisation of Road Surfacing

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# RSTA Overview

- Formed in 2008
- Members treat Circ.100 million m<sup>2</sup> per annum
- 13 sectors represented
- 90 members – 14 local authority contracting members
- Represents the supply chain
- Key aim is to promote industry best practice, train the workforce and educate highway authorities and their consultants



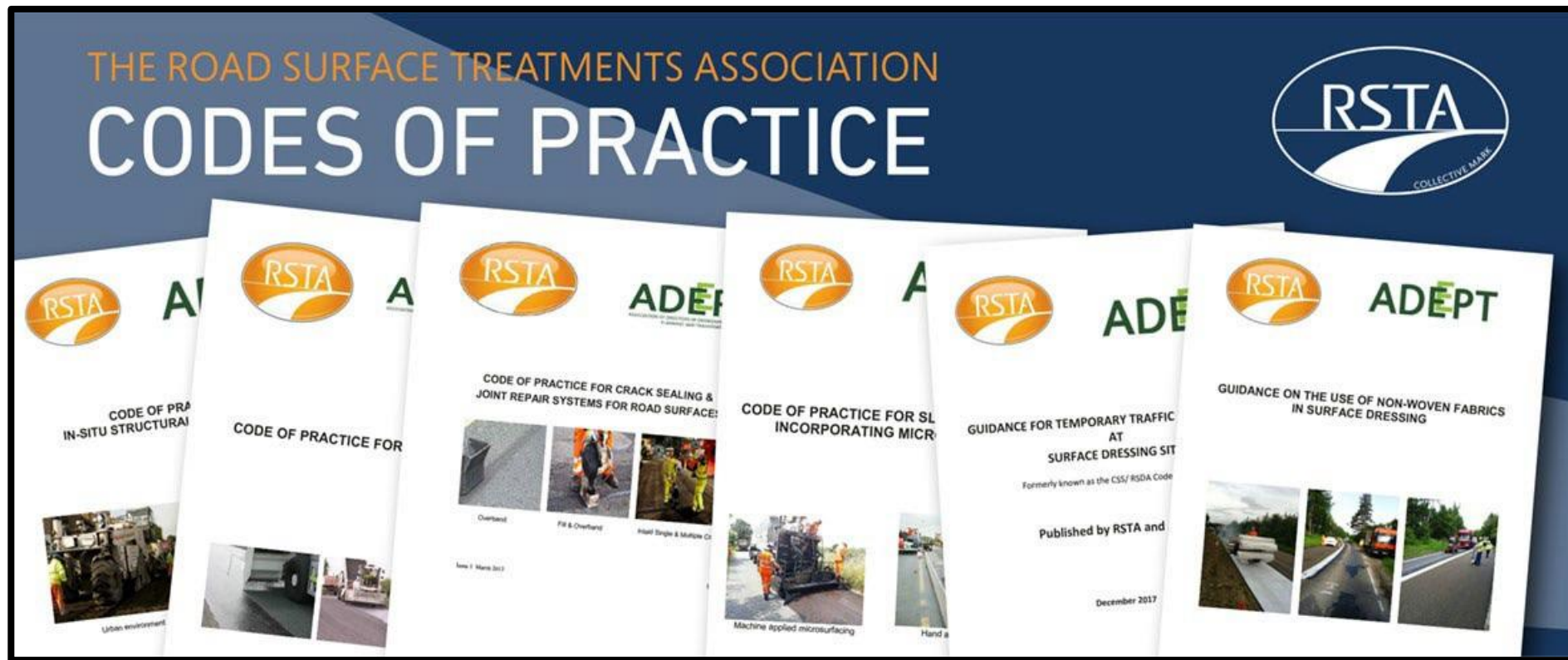
# RSTA Structure



# RSTA Codes of Practice and Guidance



12 Codes of Practice for Surface Treatments, along with Guidance documents for free download at [www.rsta-uk.org](http://www.rsta-uk.org)



# Questions for Local Authorities



Have you got too much money?

Have you declared a climate emergency?



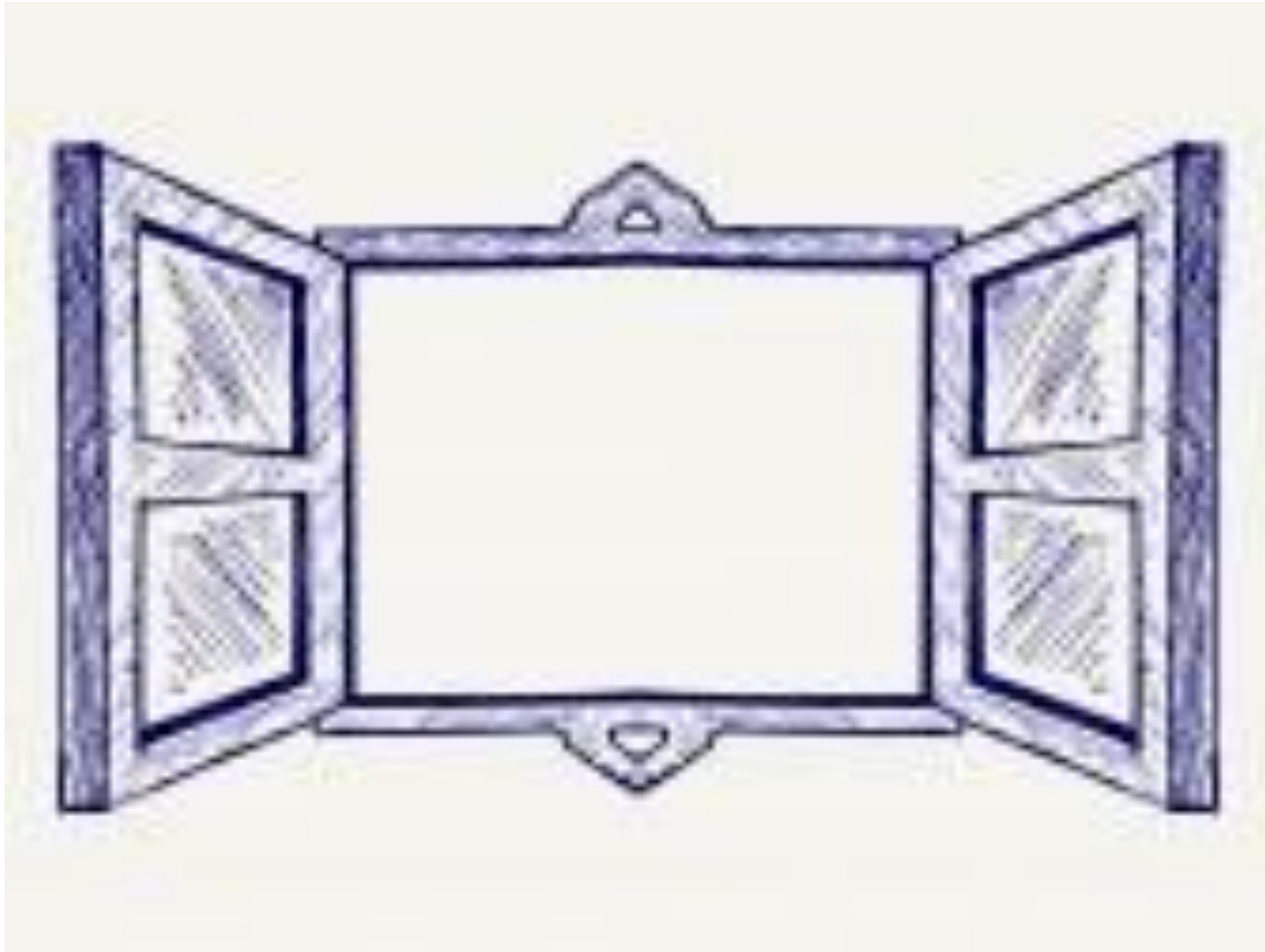
Would you like to make better use of your allocated finance?

Would you like to reduce carbon emissions as a result of your highway maintenance operations?

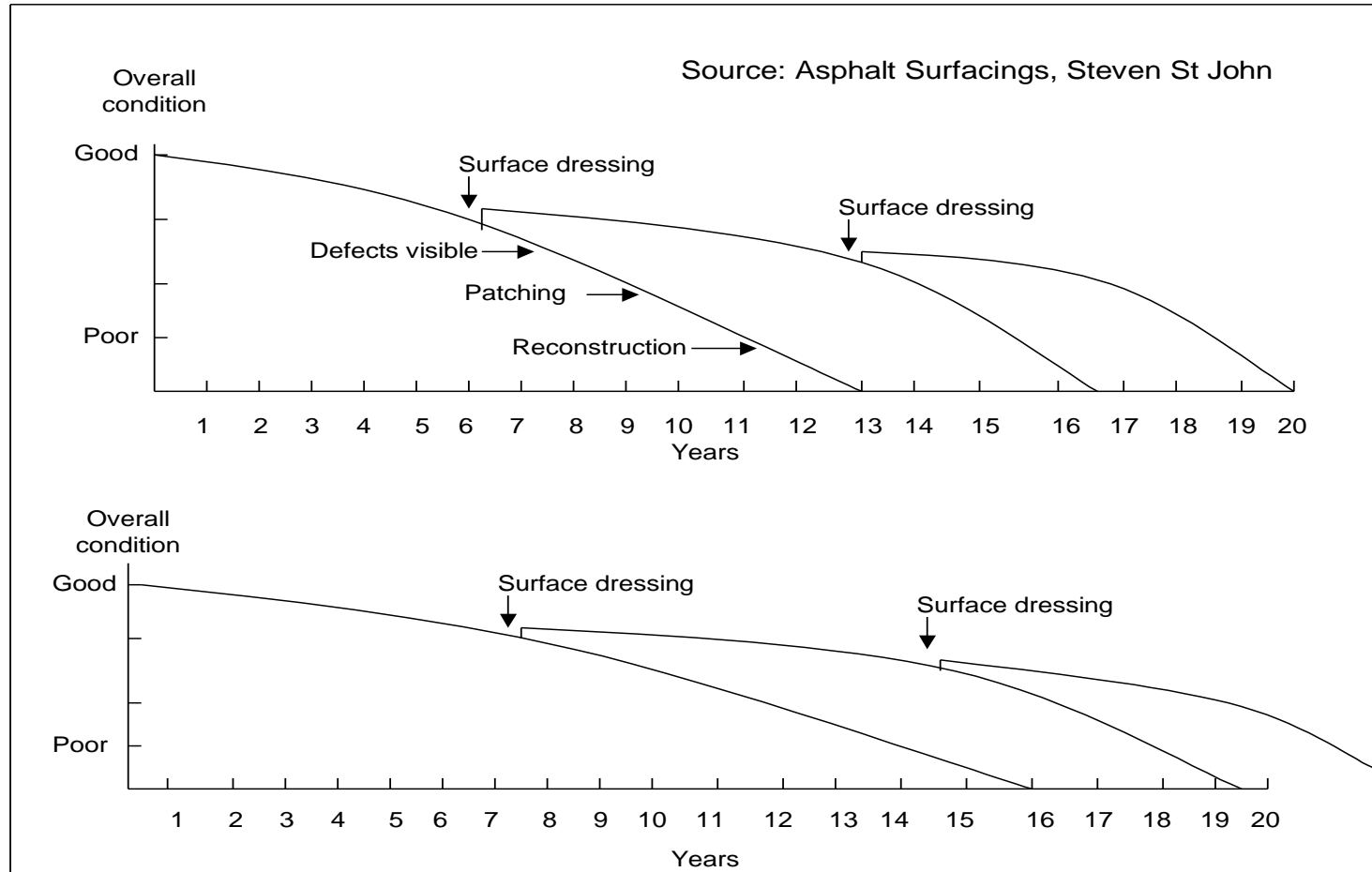
# Whole Life Cost



By considering an asset over its whole life cycle its possible to select the optimum point to intervene with the optimum treatment and hence provide the best whole life cost



# Preventative Maintenance





# Treatment / Costs



- Surface Dressing    £ 3
- Inlay Surfacing    £15
- Binder/Surface    £30

# How long does it last?



<u>Treatment Type</u>	<u>Heavily Trafficked</u>	<u>Lightly Trafficked</u>
	('A' & 'B' Class)	('C' & 'U' Class)
Surface Course	10 Yrs	20 Yrs
Binder/Surface Course	15 Yrs	30 Yrs
Surface Dressing	10 Yrs	15 Yrs

# Carriageway Lifecycle Cost



<u>Treatment Type</u>	<u>Heavily Trafficked</u> ( 'A' & 'B' Class )	<u>Lightly Trafficked</u> ( 'C' & 'U' Class )	<u>Cost</u> ( £/ m <sup>2</sup> )
New Road/Renewal	10 Yrs	15 Yrs	
Surface Course	10 Yrs	15 Yrs	15
Surface Course	10 Yrs	15 Yrs	15
Binder/Surface Course	10 Yrs	15 Yrs	30
Surface Course	10 Yrs	15 Yrs	15
Surface Course	<u>10 Yrs</u>	<u>15 Yrs</u>	<u>15</u>
	60 Yrs	90 Yrs	<b>90</b>

# Carriageway Lifecycle Whole Lifecycle Cost



<u>Treatment Type</u>	<u>Heavily Trafficked</u>	<u>Lightly Trafficked</u>	<u>Cost</u>
	( <u>'A' &amp; 'B' Class</u> )	( <u>'C' &amp; 'U' Class</u> )	( <u>£/m2</u> )
<b>New Road/Renewal</b>	<b>10 Yrs</b>	<b>15 Yrs</b>	
<b>Surface Dressing</b>	<b>10 Yrs</b>	<b>15 Yrs</b>	<b>3</b>
<b>Surface Dressing</b>	<b>10 Yrs</b>	<b>15 Yrs</b>	<b>3</b>
<b>Surface Course</b>	<b>10 Yrs</b>	<b>15 Yrs</b>	<b>15</b>
<b>Surface Dressing</b>	<b>10 Yrs</b>	<b>15 Yrs</b>	<b>3</b>
<b>Surface Dressing</b>	<b><u>10 Yrs</u></b>	<b><u>15 Yrs</u></b>	<b><u>3</u></b>
	<b>60 Yrs</b>	<b>90 Yrs</b>	<b>27</b>



# Treatments Cradle to Gate Co2e Emissions



- Preservation = 0.43kg/m<sup>2</sup>
- Surface Dressing = 1.00kg/m<sup>2</sup>
- Slurry Microsurfacing = 2.00kg/m<sup>2</sup>
- 40mm Asphalt Surface Course = 8.43kg/m<sup>2</sup>

# Carriageway Lifecycle Carbon Generation



<u>Treatment Type</u>	<u>Heavily Trafficked</u>		<u>Lightly Trafficked</u>		<u>Carbon</u> (kg/CO2/m2)
	('A' & 'B' Class)		('C' & 'U' Class)		
New Road/Renewal	10 Yrs		15 Yrs		
Surface Course	10 Yrs		15 Yrs		8.50
Surface Course	10 Yrs		15 Yrs		8.50
Binder/Surface Course	10 Yrs		15 Yrs		20.0
Surface Course	10 Yrs		15 Yrs		8.50
Surface Course	<u>10 Yrs</u>		<u>15 Yrs</u>		<u>8.50</u>
	60 Yrs		90 Yrs		<b>54.0</b>

# Carriageway Whole Lifecycle Carbon



<u>Treatment Type</u>		<u>Heavily Trafficked</u>	<u>Lightly Trafficked</u>	<u>Carbon</u>
		( <u>'A' &amp; 'B' Class</u> )	( <u>'C' &amp; 'U' Class</u> )	(kg CO2/m2)
<b>New Road/Renewal</b>		10 Yrs	15 Yrs	
Surface Dressing		10 Yrs	15 Yrs	1
Surface Dressing		10 Yrs	15 Yrs	1
Surface Course		10 Yrs	15 Yrs	8.5
Surface Dressing		10 Yrs	15 Yrs	1
Surface Dressing		<u>10 Yrs</u>	<u>15 Yrs</u>	<u>1</u>
		60 Yrs	90 Yrs	12.5

# Cost v Carbon

Carriageway Lifecycle Cost = £90 / M<sup>2</sup>

Carriageway Lifecycle Carbon = 54kg Co<sub>2</sub> / m<sup>2</sup>

Carriageway Whole Lifecycle Cost = £27 / m<sup>2</sup>

Carriageway Whole Lifecycle Carbon = 12.5kg Co<sub>2</sub> / m<sup>2</sup>





# RSTA Carbon Emissions Report and Guidance

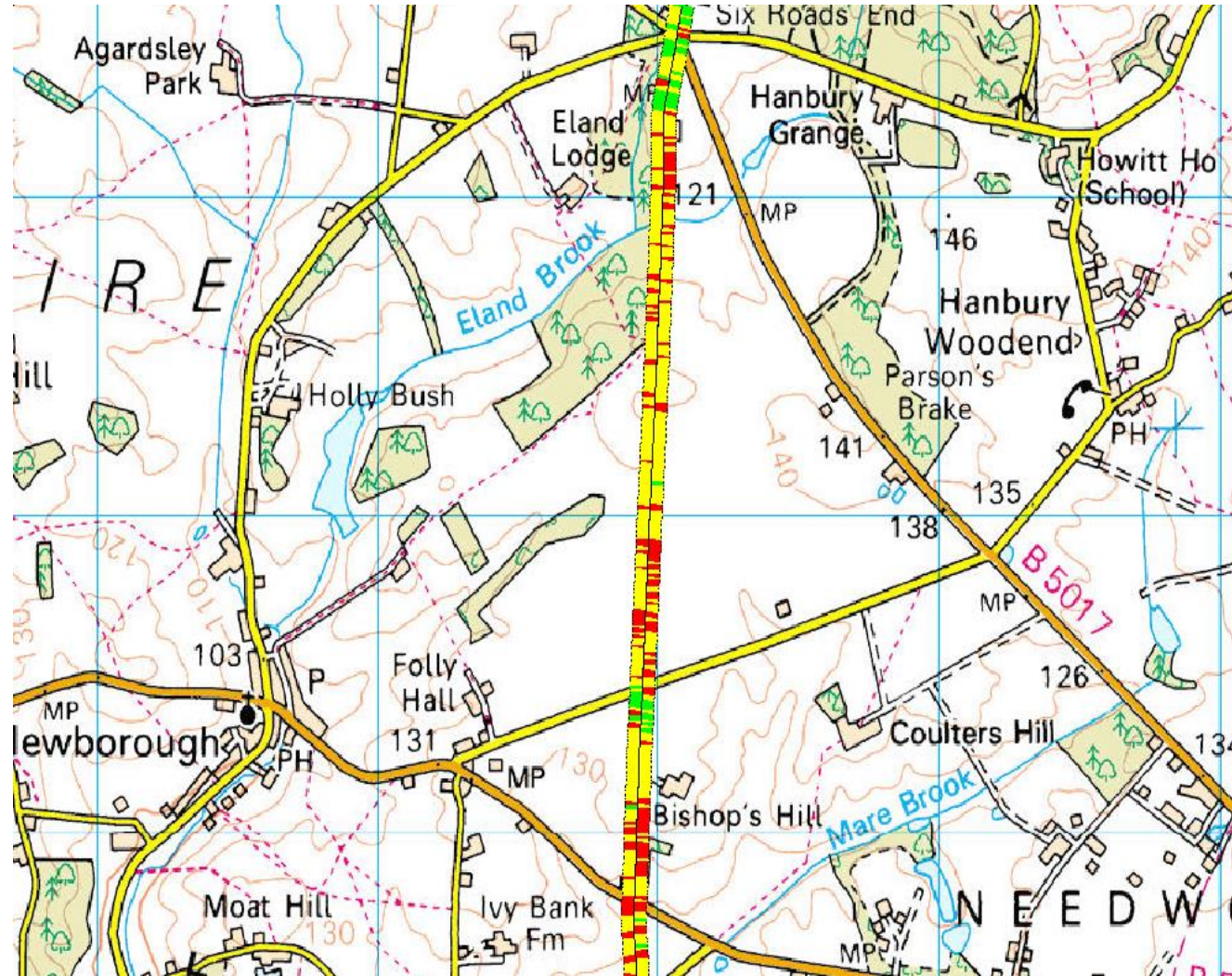


- Figures are Co2e from Cradle to Practical Completion
- Pye Management
- Comprehensive guidance for Local highway authorities
- Calculations and Evaluations in accordance with the International Standards (EN 17392-1:2020) (EN 15804 A1-A5) (NH 1-7)
- Covers all Surface treatments and conventional asphalts in tabular form
- Endorsed by ADEPT
- Launch at the RSTA Annual Conference on 13<sup>th</sup> April 2023 at Celtic Manor
- Available for free download from the RSTA website [rsta-uk.org](http://rsta-uk.org)
- Reviewed at least every 3 years

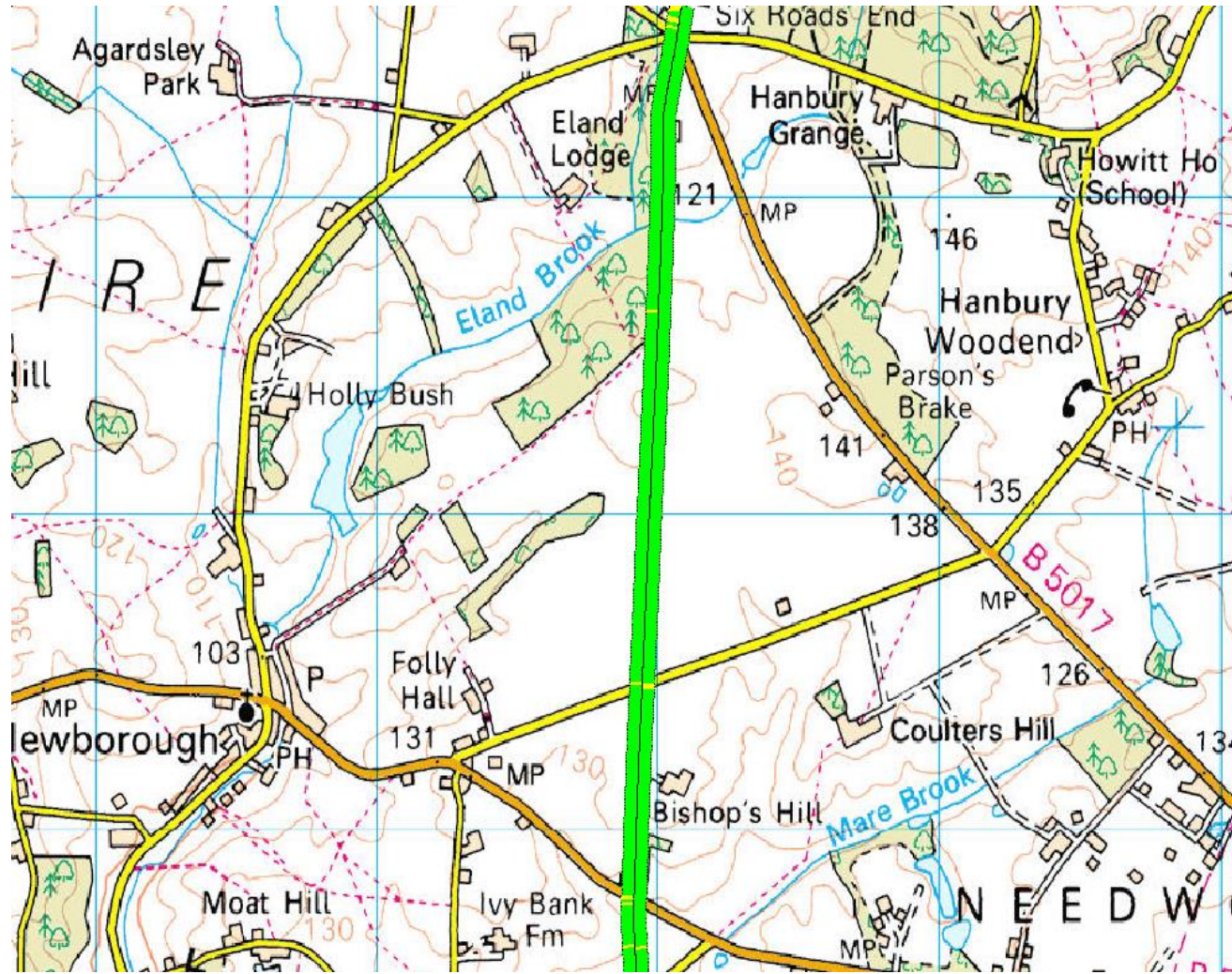
# Sustainability Options Appraisal



Treatment Type				C'way	Hierarchy				
Carriageway		1	2	3	4	5	6	7	8
Asphalt Preservation		1	1	1	1	1	1	1	1
Surface Dressing		1	1	1	1	1	1	1	1
Surface Dressing plus Lockdown		1	1	1	1	1	1	1	1
Microsurfacing		N/A	N/A	N/A	N/A	2	2	2	2
Semi-Structural Microsurfacing		2	2	2	2	3	3	N/A	N/A
Shallow Recycling 75 - 100mm		N/A	N/A	N/A	N/A	4	4	3	3
Medium Recycling - 150mm		N/A	N/A	N/A	N/A	5	5	4	4
Deep Recycling		3	3	3	3	6	6	5	5
Asphalt Inlay Surface Course		4	4	4	4	7	7	6	6
Asphalt Binder Course Overlay		N/A	N/A	N/A	N/A	N/A	N/A	7	7
Asphalt Inlay Surface & Binder C'se		5	5	5	4	8	8	8	8
Asphalt Surface, Binder & Base C'se		6	6	6	4	9	9	9	N/A
Reconstruction		7	7	7	7	N/A	N/A	N/A	N/A











THANK YOU

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