



# *Decarbonising Highways Maintenance: Developing a Decarbonisation Strategy for Lancashire*

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(Lancashire CC)

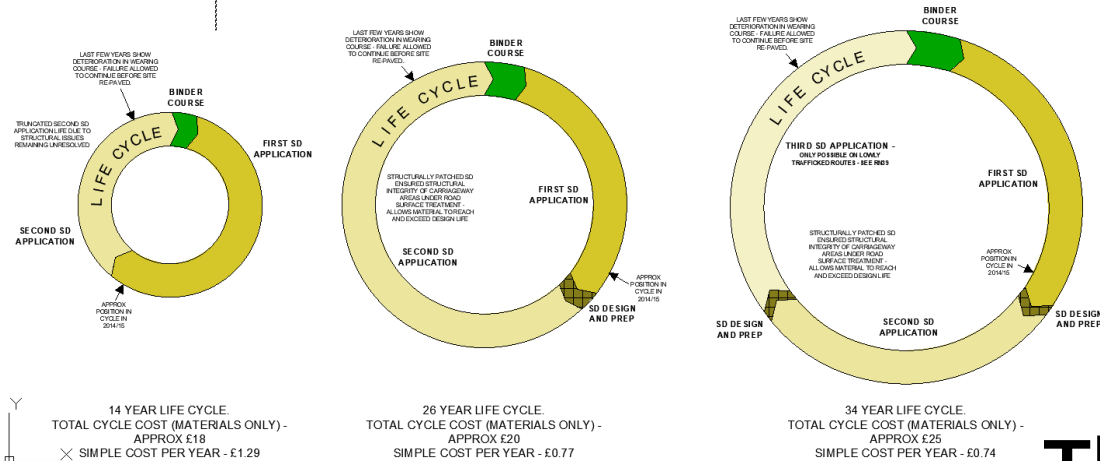
# DfT Self Assessment Q23: Carbon (January 2021)

## 23. Sustainability (additional questions)

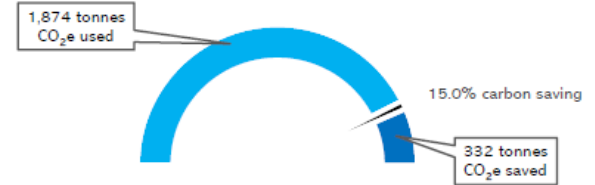
**Q.4** If you were scoring your authority in relation to reducing carbon generation as a result of your maintenance operations, what score would you award on the basis of the below?

- **1** - We have an awareness of the carbon reduction challenge.
- **2** - We are developing plans and processes that will enable us to compare whole life carbon generation when selecting suitable materials/processes.
- **3** – Our plans and processes are fully embedded to ensure least whole life carbon generation when selecting suitable materials/processes.

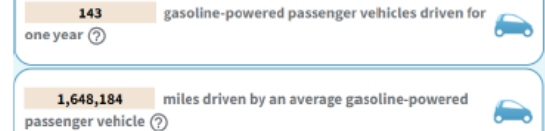
# Carbon in the Lifecycle



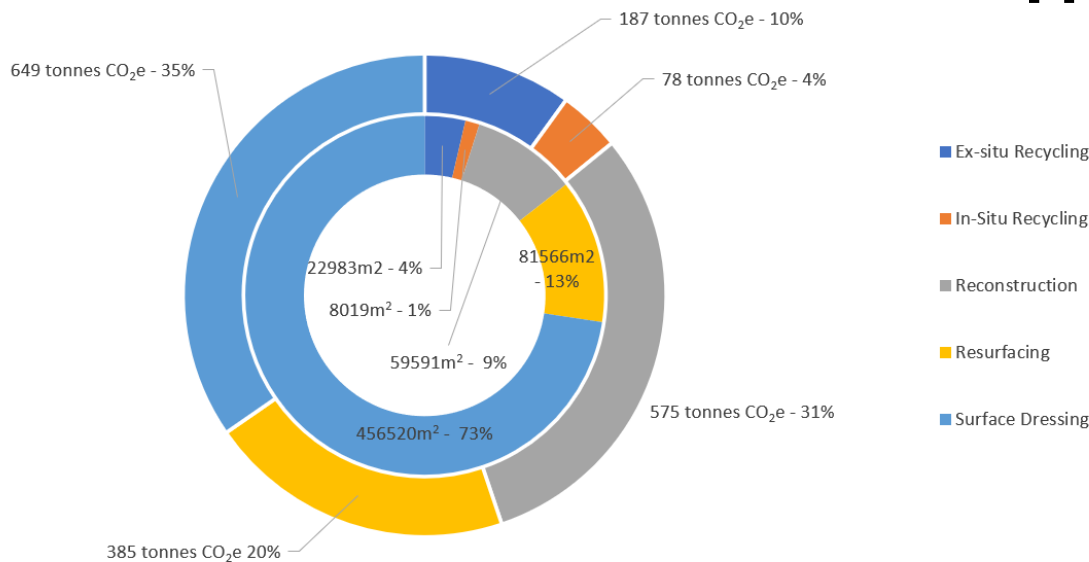
## Total Programme Carbon Consumption and Savings



332 tonne carbon saving is equivalent to the greenhouse gas emissions from:

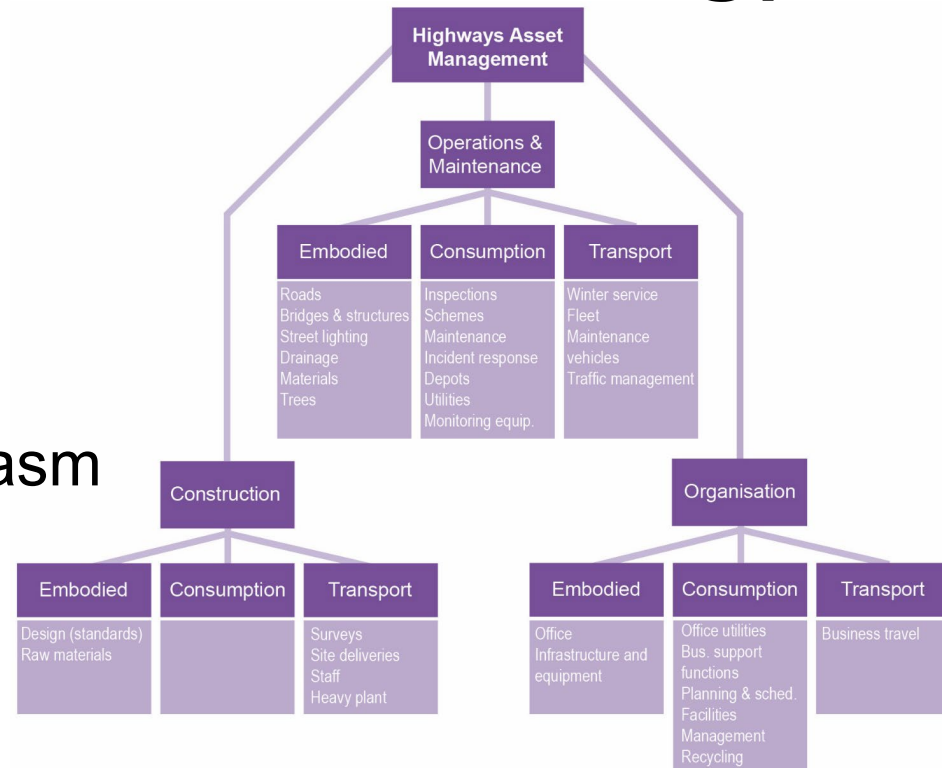


## Thinking and doing!....



# .....Articulating & Extending: Developing a Decarbonisation Strategy

- ‘Neutrally’ facilitated
- Engage with all internal stakeholders
- Buy In to principles - enthusiasm
- Clear Road Map
- Manageable SMART Actions
- Clear Governance – existing
- Political Buy In

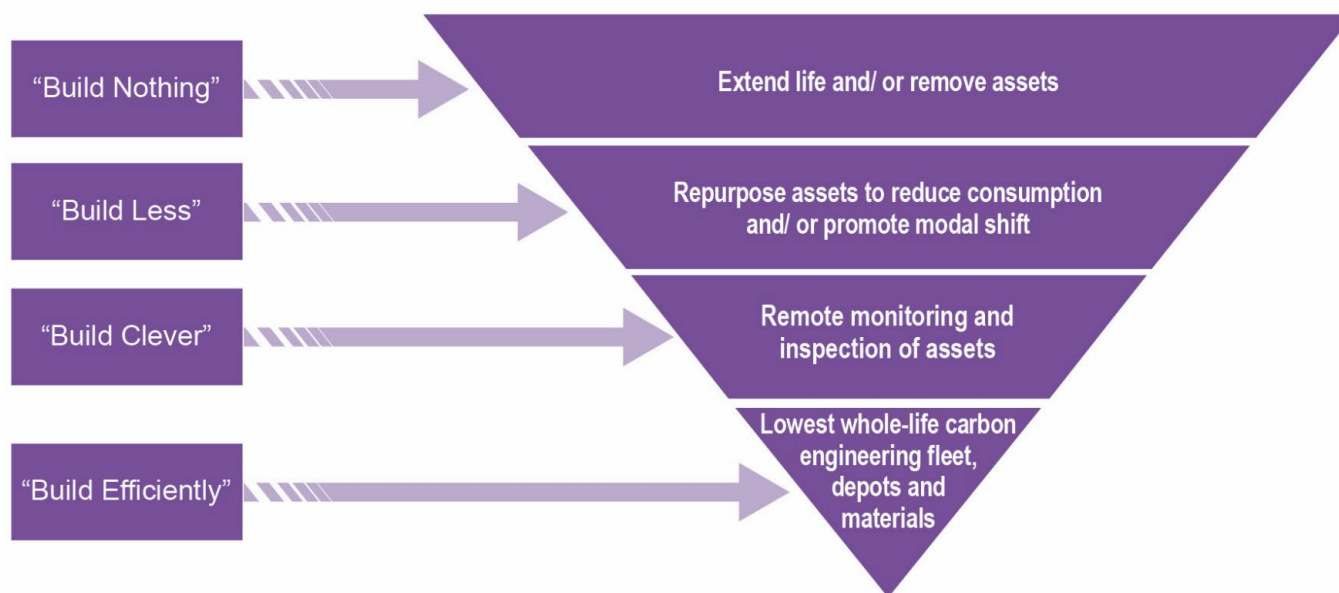


- [Highways decarbonisation strategy - Lancashire County Council](#)

# Applying the Carbon Hierarchy to Highways Asset Management

PAS 2080:2016  
Carbon emissions reduction hierarchy

Application to of Carbon Hierarchy  
to Highways Asset Management



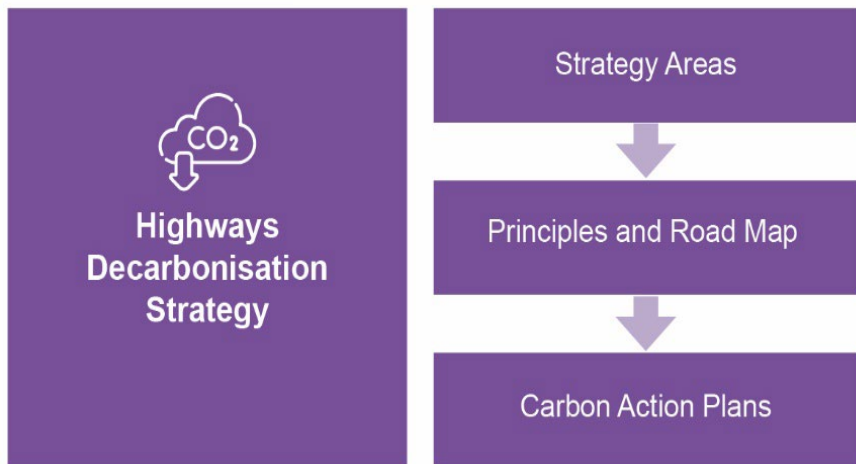
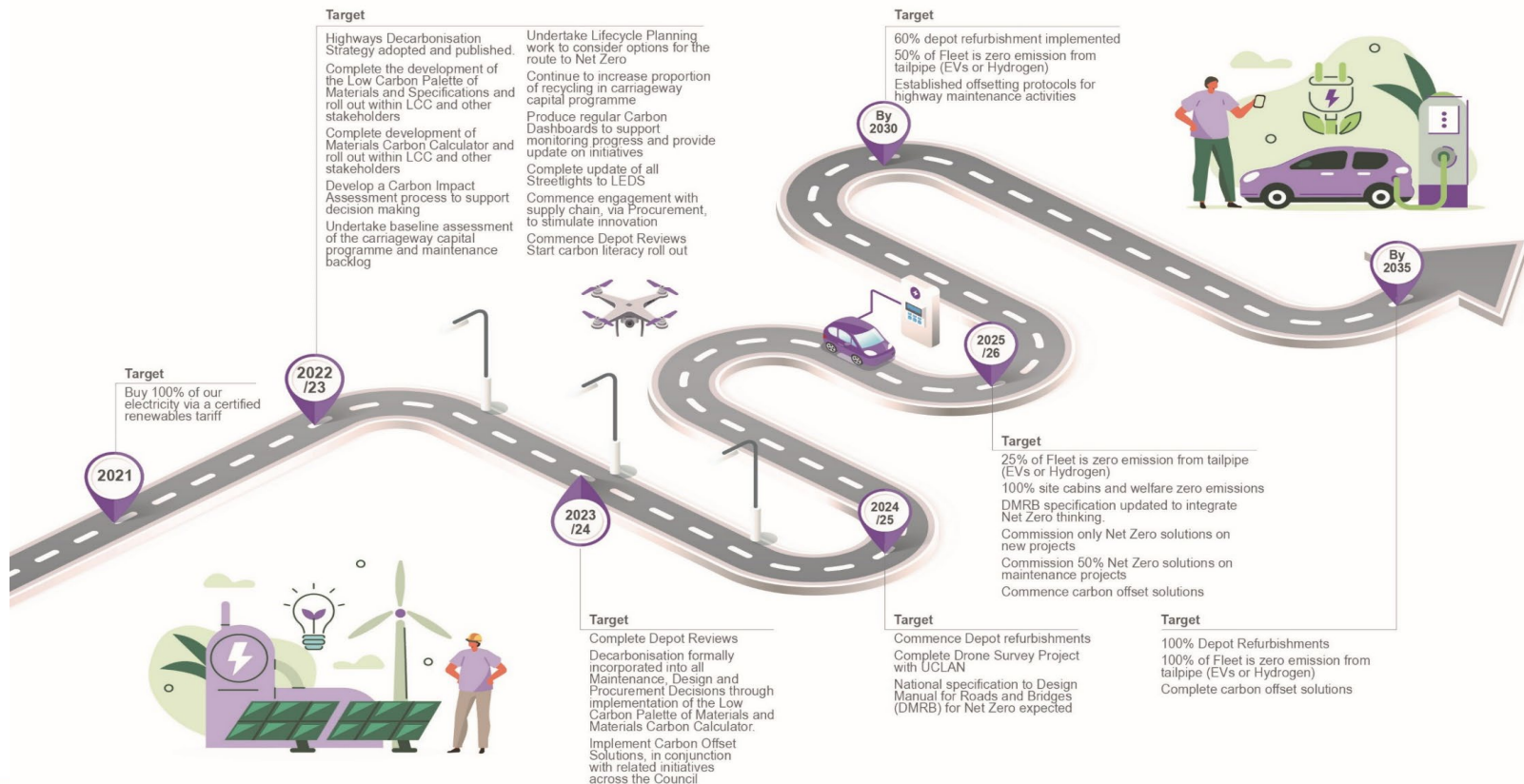
**Sustainability  
Through  
Durability**

**Don't just  
replace,  
review what  
is needed**

**Normalise :**

- Innovation
- Recycling
- Measure
- Report







**Promoting low carbon approach in procurement of goods and services;** Stimulate innovation from our supply chain, by communicating our ambition and leveraging commercial incentives to take action.



**Measure the carbon impact of all highway maintenance activities and publish carbon baseline and impact assessments;** so we can prioritise initiatives and continuously improve.



**Aim for lowest carbon impact across the lifecycle of the asset;** by considering the impact of carbon in lifecycle modelling as part of the decision-making process.



**Ensure the carbon impact of ongoing revenue maintenance activities are considered as well as replacement carbon costs;** achieving sustainability through durability.



**Purchase of green energy [OM1];** buy 100% of our electricity via a certified renewables tariff.



**Replace energy intensive services with low energy products and processes;** futureproof for evolving highways infrastructure and technology associated with a low carbon society.



**Consider carbon off-setting as option of last resort;** Minimise dependency on offsetting and remain transparent on scope 3 emissions throughout the value chain.



**Work towards Net Zero across all depots and fleet operations;** working collaboratively with other service lines.



**Work with other stakeholders to consider innovation and develop low carbon initiatives across highway maintenance activities;** embed a decarbonisation culture with the necessary behaviours, roles and skill sets.



**Consider the planting of trees within the highway boundary and measures to increase net biodiversity;** wherever appropriate.



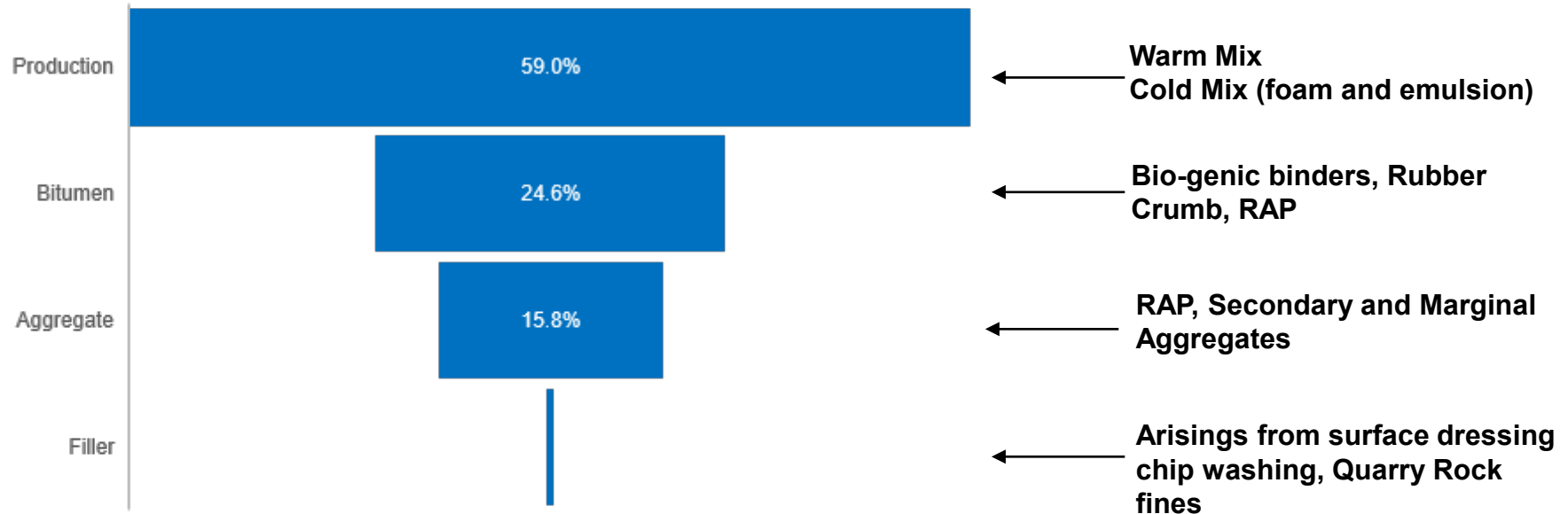
## Decarbonisation Strategy

### 22/23 priorities:

- Carbon Statement for Carriageway Programme
- Carbon Dashboard
- Study on propensity\opportunity to save Carbon in Carriageway Capital Programme and Lifecycle Planning
- Carbon Calculator for scheme development
- Procurement & Supply Chain engagement
- Carbon Literacy and Engagement

# Propensity to further reduce CO<sub>2</sub>e in asphalt

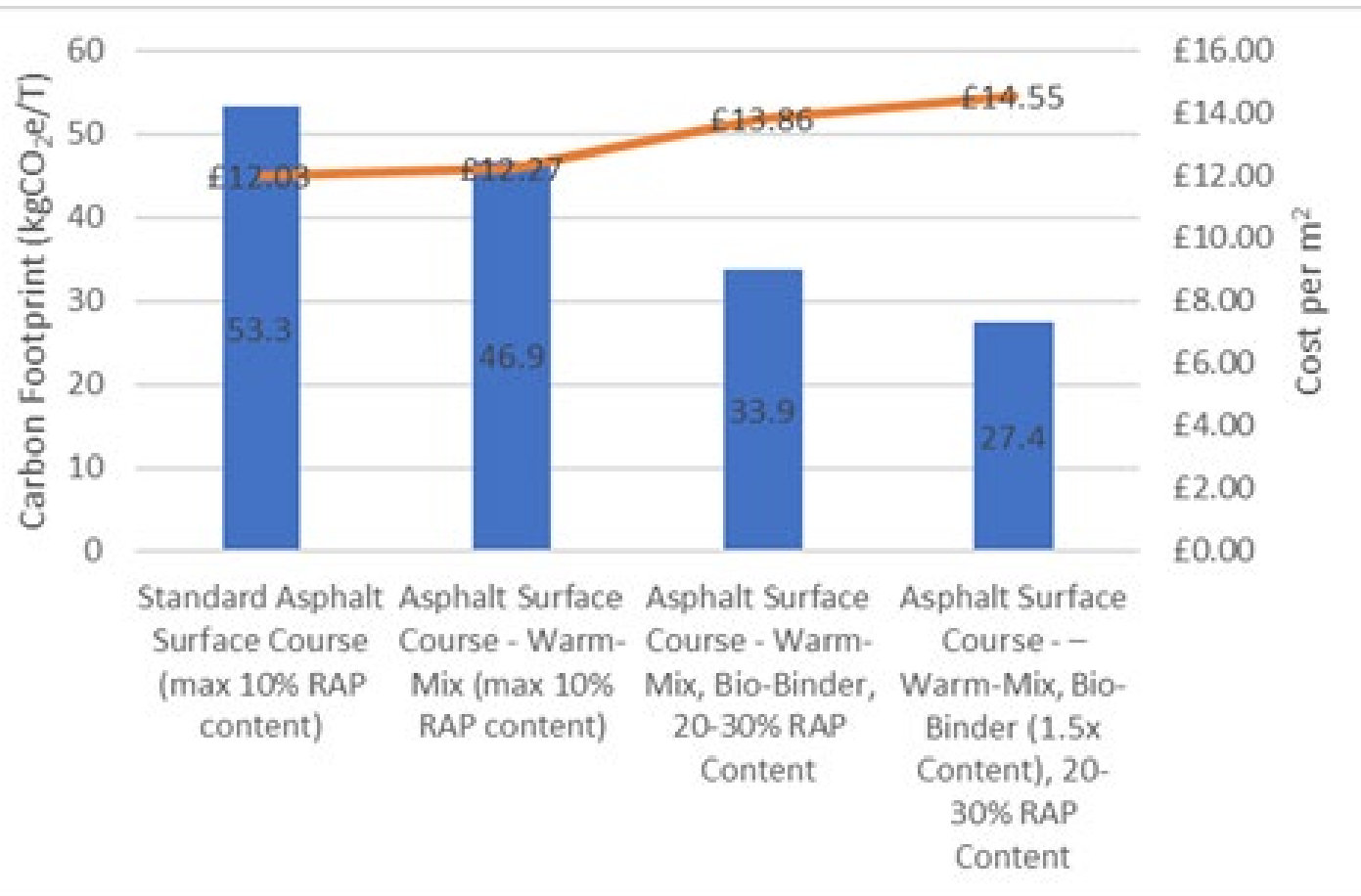
Typical contributions to the carbon footprint of asphalt





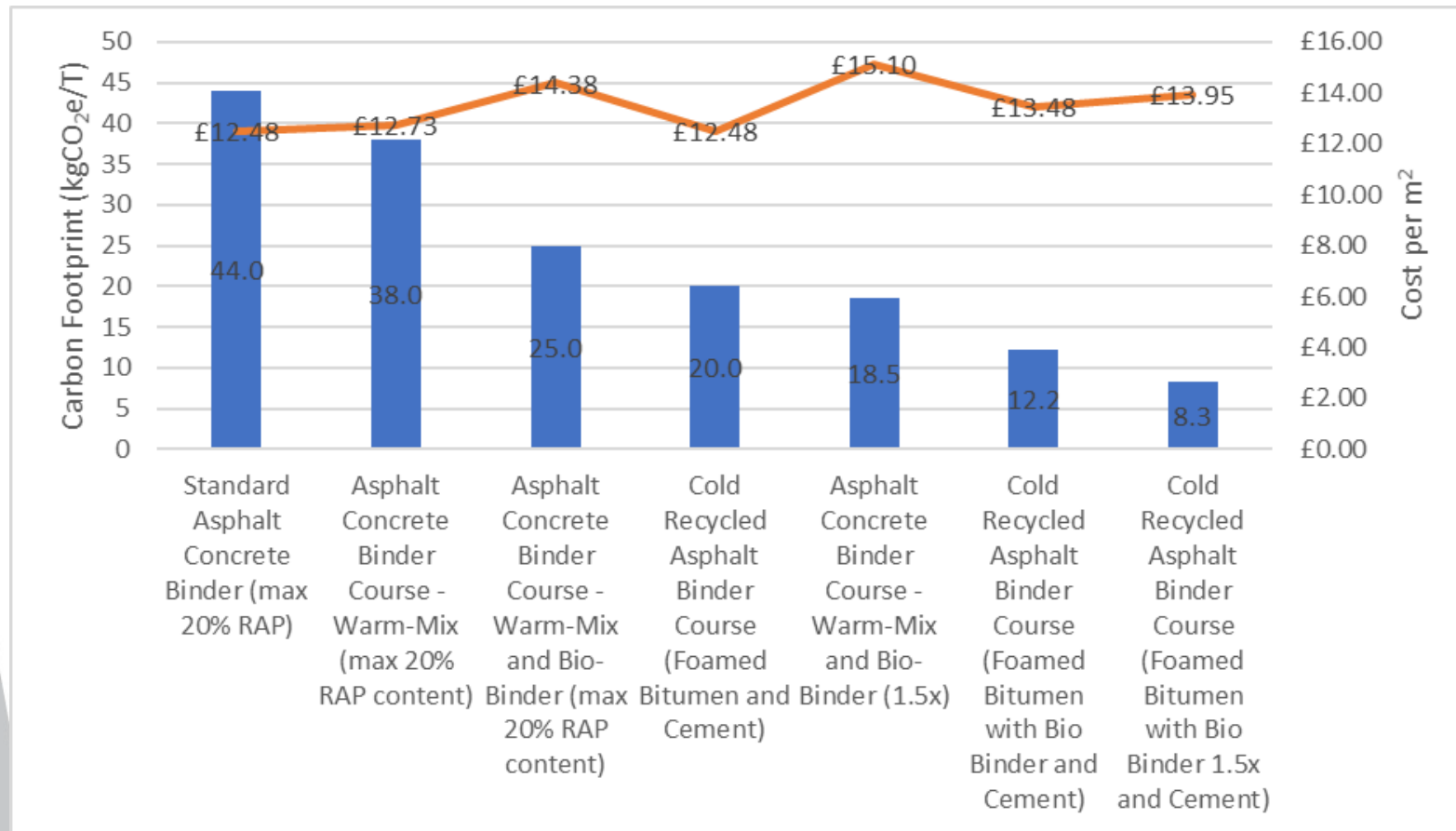
# Quantification of potential carbon savings

## Surface courses:



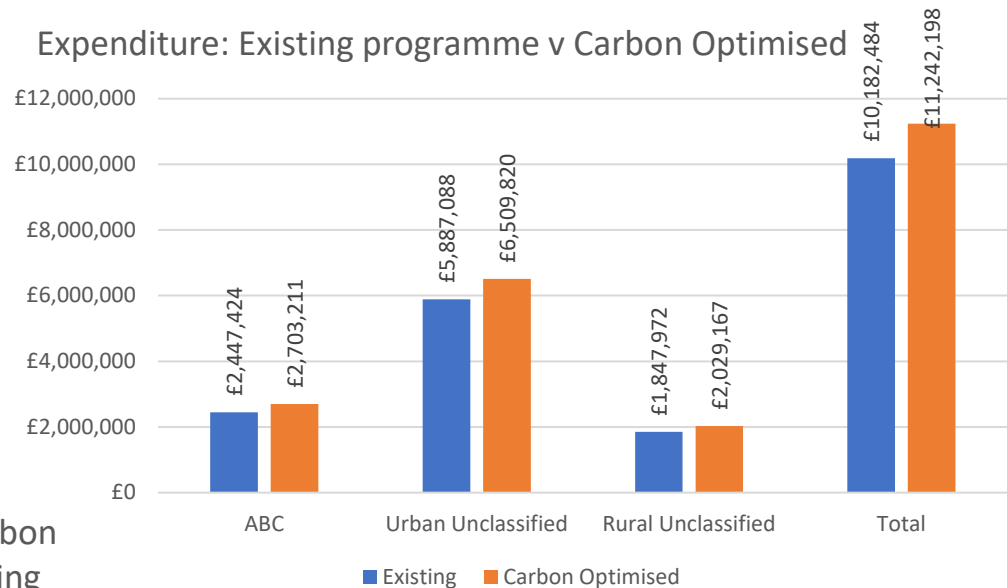
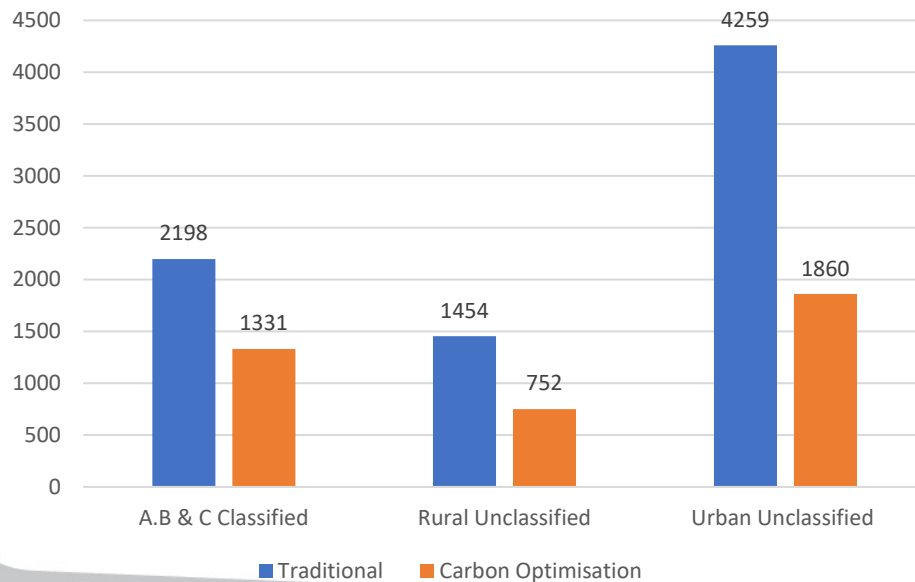
# Quantification of potential carbon savings

## Binder and Base Courses



# What does this mean for the Capital Programme Delivery?

TAMP Ph2 Funding: Existing Programme v Carbon Optimised: Tonnes CO<sub>2</sub>e: possible 50.2% Saving



50% saving in CO<sub>2</sub>e:  
To deliver same number of  
schemes requires additional  
£1.1m :  
£10.2m Traditional  
V  
£11.3m Carbon Optimised

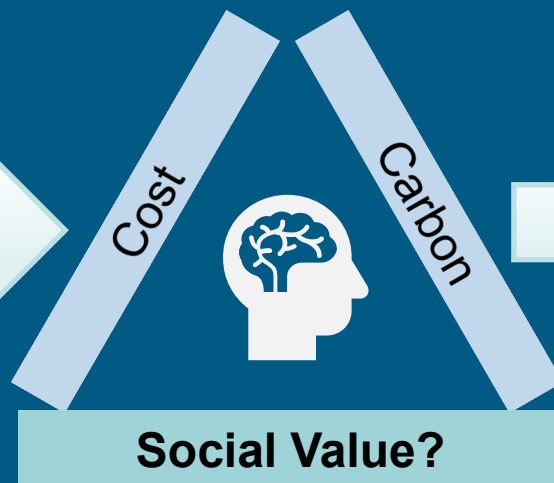


## Challenges:

- Maintenance backlog
- Constrained budget
- Hyper-inflation
- GHG emissions
- Public expectations
- Member Expectations



## Decisions



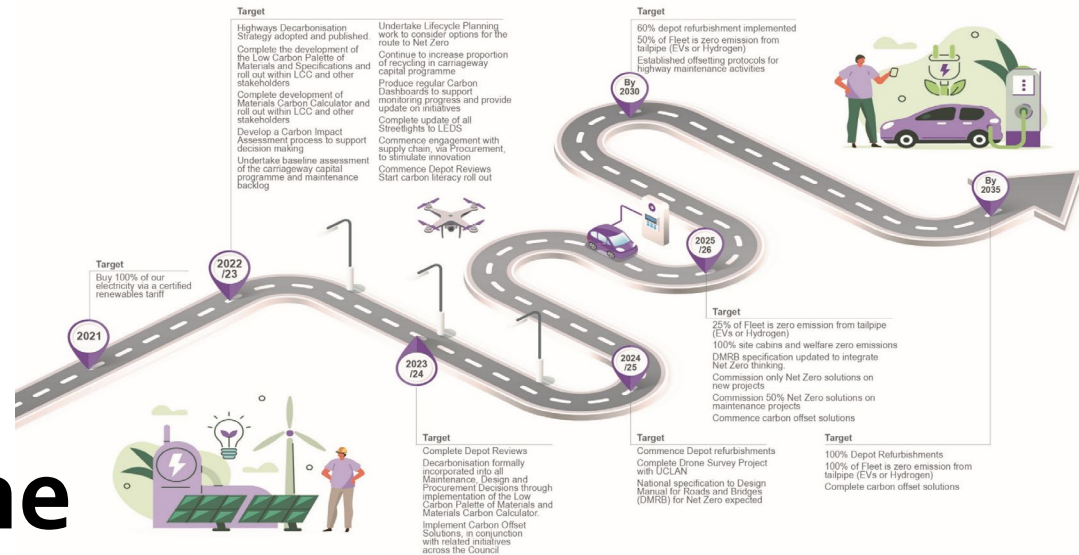
## Opportunities:

- Innovation
- Propensity to change
- Challenge Assumptions
- More informed decisions



# The Challenge:

Individual: Take the first step



Collectively:  
Normalising the  
new and making it  
affordable