

Future Highways Research Group

# FHRG Waypoint Meeting: Q3, 2022

**ADEPT / Proving Research Partnership**



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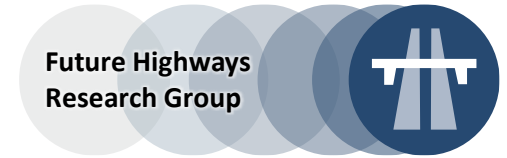
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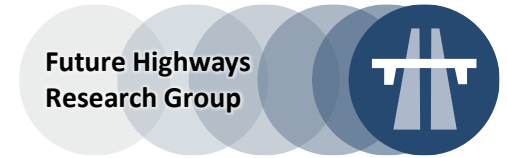
# Agenda



- **Welcome & Introductions (Hannah Bartram)**
- **Sector News (Dominic Browne, Editor, Highways Magazine)**
- **FHRG Members Updates (Open Discussion)**
  - Individual members news & announcements.
  - Current issues & challenges for highways authorities.
  - Benchmarking fees and charges?
- **Human Capital Management Update (Karen Farquharson, Director, Proving)**
  - Key messages and outcomes from workshops.
  - Survey update.
  - Next steps.
- **Fleet Services Review (Karen Farquharson, Director, Proving)**
  - Description of study and opportunities to participate.
- **Circular Economy in Road Construction and Maintenance (CERCOM) project**
  - *Dr Alan O'Connor, Professor, Civil Struct and Env. Eng. Trinity College*
  - Providing best practice by defining a risk-based framework for assessing maintenance options over multiple lifecycles.
  - How to embed this thinking into public sector procurement practices.

# Agenda

Continued...



- **Lane Rentals Scheme (David Latham, Kent County Council)**
  - Implementation and challenges.
  - Benefits and learning.
- **Comfort Break**
- **Developing a VFM assessment for framework contracts (Andy Perrin, Director, Proving)**
  - Purpose, status and next steps.
- **Carbon Profiling & Calculation Toolkit (Simon Wilson, FHRG Research Director)**
  - Development progress review.
  - Introduction to the FHRG Carbon Profile Builder application.
  - Building the Carbon Calculation & Accounting Standard
    - Trials with FHRG members.
  - Supporting Live Labs II initiatives.
  - Future stages and getting involved.
- **AOB & Next Meeting**

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# Sector News

Dominic Browne, Highways Magazine



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# Member Updates: Open Discussion

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# Discussion Points



- **News from the FHRG members?**



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# Human Capital Management: Survey Update

Karen Farquharson, Research Leader



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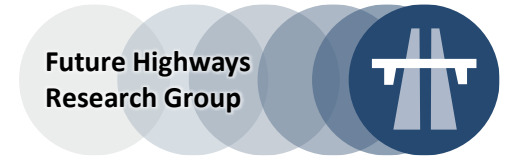
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# Updated Survey Findings

## Human Capital Management Survey

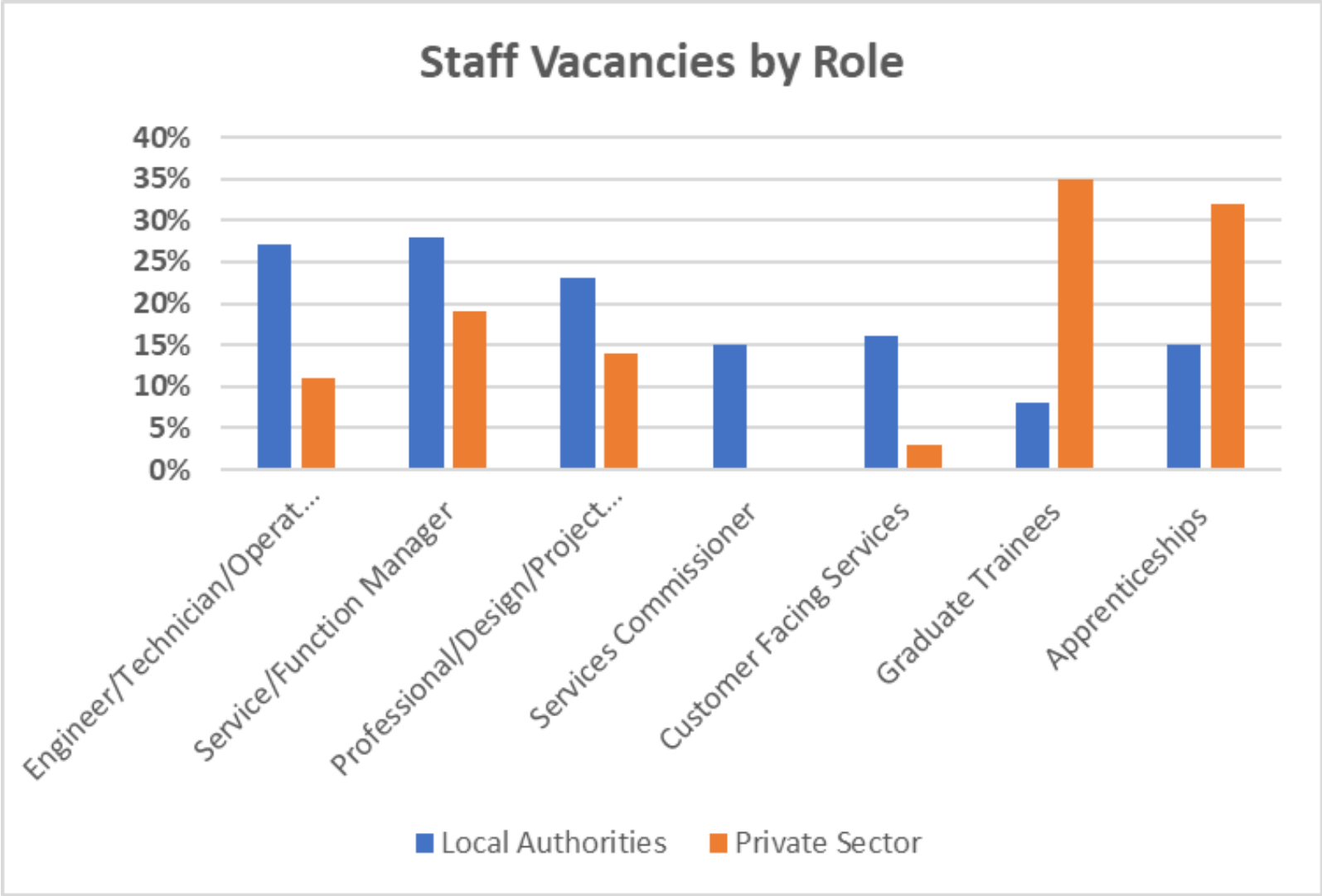


# HCM Research Project Current Status



- **31 LHA responses.**
- **2 well-attended FHRG workshops to identify solutions.**
- **Under-40 HCM workshop scheduled for 21 September.**
  - 26 acceptances to-date.
- **3 private sector provider responses (further 2 are imminent).**
  - Interviews to follow.

# Staff Vacancies by Role



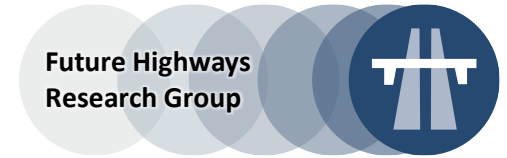
# HCM Survey Results

30 LHAs (Majority DLO or Mixed Economy) + 3 Private Sector Providers



Role	Vacancies		Agency	
	Local Authority	Private Sector	Local Authority	Private Sector
Engineer/Technician/Specialist/Operative	<b>27%</b> 16-47%	<b>11%</b> 7-17%	<b>18%</b> 2-24%	<b>3%</b>
Service/Function Manager	<b>28%</b> 12-37%	<b>19%</b> 11-28%	<b>13%</b> 12-14%	<b>4%</b>
Professional/Design/Contract Support/Project Managers	<b>23%</b> 8-32%	<b>14%</b> 8-22%	<b>24%</b> 5-50%	<b>10%</b> 7-12%
Services Commissioner/Asset Manager/Planner	<b>15%</b> 5-38%	-	<b>5%</b> 2-6%	-
Customer Services/Community Engagement/Communications	<b>16%</b> 14-17%	<b>3%</b> 2-5%	<b>1%</b>	<b>1%</b>
Graduate Trainees	<b>8%</b> (single digits)	<b>35%</b> (17-56%)	-	-
Apprenticeships	<b>15%</b> 0-23%	<b>32%</b> 15-61%	-	-

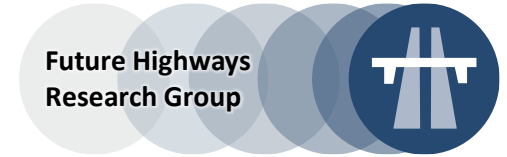
# HCM Survey Findings



	Local Authorities	Private Sector
<b>Gender Profile - % Men</b>	76%	83%
<b>Ethnicity Profile, White, European, Other</b>	84%	82%
<b>Age Profile</b>		
30 and under	11%	19%
Between 31 and 45	22%	26%
Between 45 and 55	34%	26%
56 and Over	33%	19%

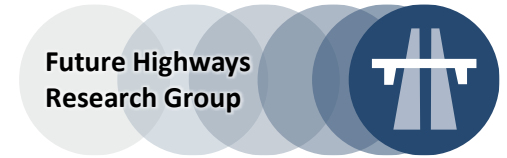
# HCM Survey: Interim Findings

Continued...



- **Top 4 reasons provided as difficult to recruit:**
  1. Pay and conditions (97%).
  2. Fewer people choosing a career in the public and highways sector (85%).
  3. Competing opportunities within the sector (90%).
  4. Lack of skills and experience (specifically private sector).
- **The majority advertise vacancies via their organisation's website, plus top-up through recruitment agencies.**
- **92% LHA respondents said the skills shortage impacted on the choice of delivery model.**
- **All private sector providers said it was a consideration when deciding which contracts to bid for.**

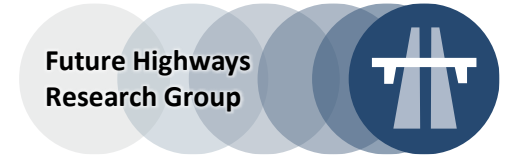
# Status of Local Highways Authority Sector



- **External Sector Challenges**
  - Cost of living crisis.
    - **Scale of pay is becoming even more critical for staff, particularly for the lower-paid.**
  - Increasing difficulty recruiting even agency staff.
  - Inflation and energy crisis – operating costs 20%+.
- **Steady progression to ‘Mixed Economy’ operating and delivery model.**
  - Scale and structure varies from authority to authority.
  - Move is often out of necessity rather than preference.
  - Member pressure to bring re-active maintenance back in-house.
- **Increasing lack of suitable, local training providers.**
  - Closure of groundworkers apprenticeships.
    - **Derby College terminating all apprenticeships mid-course due to a lack of professional trainers.**
- **Many LHA’s are progressively de-skilling.**
  - The roles that are seen as challenging and interesting have largely been outsourced.
- **Evidence that a purely engineering background may lead to reduced career progression at the very senior levels of local government.**
  - Increasing requirement for experience of ‘place’ and/or ‘environment’.

# Status of Local Highways Authority Sector

Continued...



- **Recognition that the service needs an adequately resourced and intelligent client / commissioning team.**
  - Commercial and strategic acumen to maximise the VfM realised from external contracts.
  - Increasing emphasis on effective stakeholder management skills.
    - **Member engagement.**
    - **Local knowledge and understanding (Communities, network, priorities and constraints).**
  - A small client team makes recruitment more challenging.
    - **Visible lack of career progression.**
    - **Absence of a team can make it a 'lonely' place to work.**



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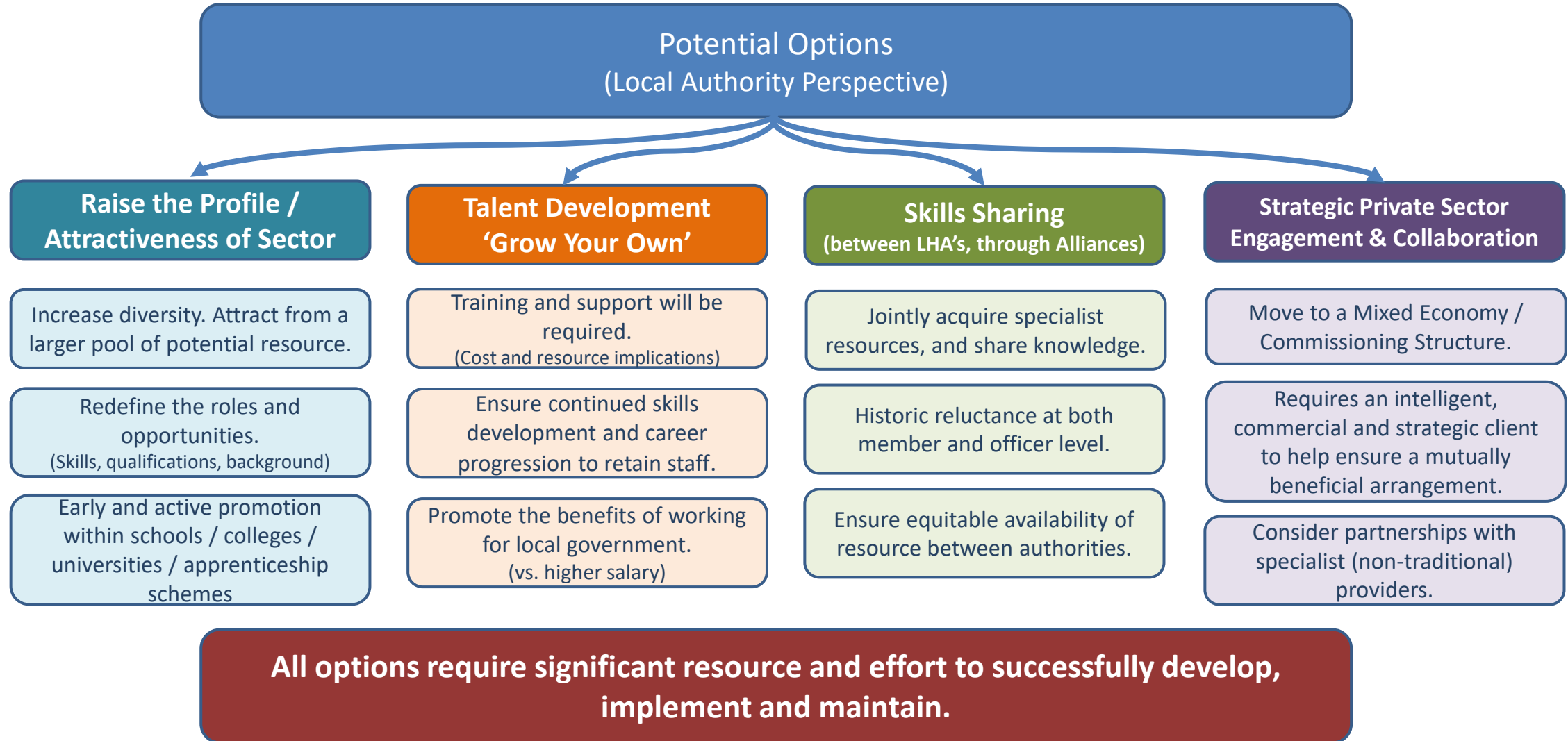
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# HCM Solution Candidates

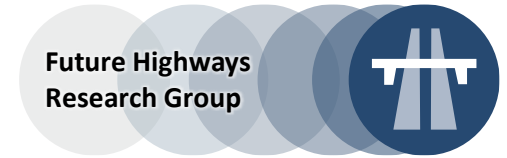
## Human Capital Management



# HCM Challenges – Longer-Term Options

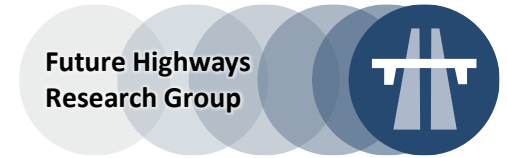


# HCM Workshop: Proposed Solutions



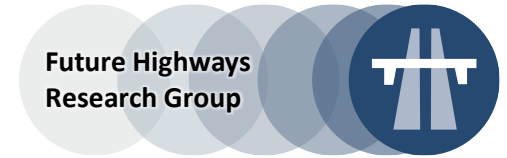
- **Better promote the benefits of working for local government.**
  - Flexible working, job security, pensions.
  - Working for the benefit of the local community and environment.
    - **May help to attract younger people.**
  - Supportive working environment.
    - **Return to work (parents / carers).**
    - **Disadvantaged backgrounds.**
  - Career progression /Grow-Your-Own
    - **Offer a range of experience and skills development.**
    - **Support portfolio careers and mid-point career change.**
    - **Educational support (payment of professional fees).**
    - **Skills development (in future technologies).**
    - **Mentoring and training of critical.**
- **Appeal to a greater and more diverse population.**
  - Dedicated recruitment officer / professional recruitment agency.
  - Re-consider the channel, placing and content of communication.
  - Use of professional videos and advocates that reflect diversity.
  - Re-design job advertisements (language, length, process).
  - Recruitment based on practical skills and aptitude vs. qualifications and interview technique.

# HCM Workshop: Proposed Solutions



- **Improve the quality, content and accessibility of training programmes.**
  - Focus on needs of LHA's.
    - **Emphasis on political and community obligations.**
  - Source and structure of funding and investment for improved training.
  - Role for Highways Alliances / Industry Bodies (CIHT & ADEPT).
  - Role of the FHRG?
  - Future partnership with Private Sector?
- **Regional and sector promotion in conjunction with local authorities.**
  - Encourage movement within sector.
- **Additional suggestions from Private Sector**
  - Access to unspent apprenticeship levy.
  - More schemes like Kickstart.
  - Remove GCSE qualification for apprenticeships where not essential.

# Next Steps



- **To fully understand the drivers for under-40's in choosing to work (and stay) for a LHA.**
  - Workshop scheduled 21<sup>st</sup> September.
- **Further explore and define the structure, content, provider and funding of a comprehensive training programme, focused initially on operatives.**
  - Identify and document good and successful practice.
- **To identify and document successful 'Grow-Your-Own' initiatives.**
  - What has worked and why.
- **Interviews with private sector providers.**
  - Identify other initiatives that would be benefit local authorities and the wider-sector.

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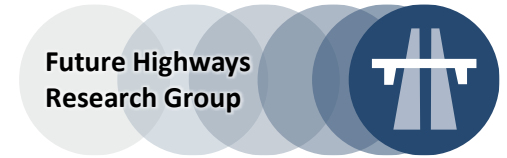
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# Fleet Services Review

Karen Farquharson & Paul Rusted, Research Leaders

# Fleet Services Review



- **Proving is undertaking an in depth review of Fleet Services for Nottingham City Council.**
  - Fleet Procurement
  - Fleet Maintenance
  - Fleet Compliance
- **Issuing a comprehensive survey across the sector, including:**
  - Fleet Profile, Fleet Performance, Inflation, In-House Operation v Outsourcing, Fleet Structure and Resources, Vehicle Replacement Programme (VRP) Rent versus Buy, Ultra Low Emission Vehicles (ULEV) versus Internal Combustion Engine (ICE), Telematics & Taxis
- **Request to FHRG members to provide contact details of colleagues responsible for Fleet Services and encourage them to contribute.**
- **All survey results, including Notts City Council will be shared with participants.**
- **Survey to be issued in October 2022, review to be completed December 2022.**



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# Circular Economy: Road Construction & Maintenance

Professor Alan O'Connor, Trinity Research, Civil Struct & Env. Eng.  
Director, CERCOM



# R D S

**RESEARCH DRIVEN SOLUTIONS**

**CERCOM – Circular Economy in Road  
Construction and Maintenance**

**Prof. Alan O'Connor, Director  
Research Driven Solutions Ltd.**

**FHRG 15/09/2022**



# Research Driven Solutions

- Research Driven Solutions Ltd. is an SME using research results to solve practical problems in the areas of transport and critical infrastructure.



PROBABILISTIC SAFETY  
ASSESSMENT OF  
STRUCTURES



RISK AND RESILIENCE  
ASSESSMENT OF  
INFRASTRUCTURE



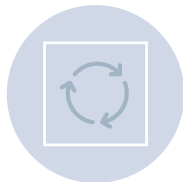
DYNAMIC ANALYSIS OF  
STRUCTURES



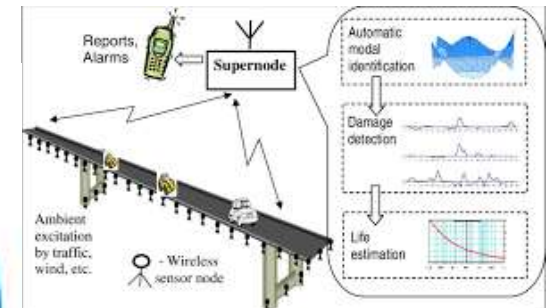
STRUCTURAL HEALTH  
MONITORING



SUSTAINABILITY AND  
CIRCULAR ECONOMY



LIFE CYCLE ANALYSIS





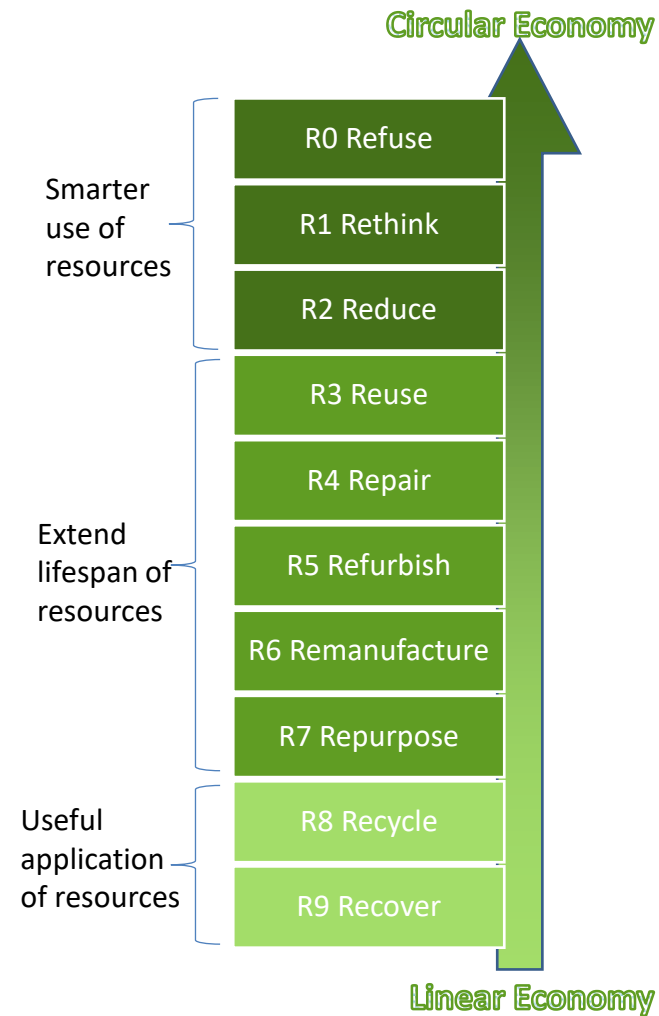
<https://cercom.project.cedr.eu>

**LinkedIn**

<https://www.linkedin.com/company/cercom-circular-economy-in-road-construction-and-maintenance/>

**Twitter:**

<https://twitter.com/CERCOM>



## Circular Economy in Road Construction and Maintenance



### Best practice

An inventory of the systems / approaches appropriate at different stages of the journey towards circularity



### Risk based analysis framework

A framework and suitable KPIs supporting the lifecycle assessment of resource use and impacts



### Resource and training

Guidance, training seminars and on-line materials for managers and practitioners





WP2 – Development of best practice procurement approaches

- Where are we, where do we want to go and what's stopping this now?

WP3 – Risk based analysis framework

- Developing processes to help us get there

WP4 – Validation and demonstration of developed process

- Case studies
- Testing the process

WP5 – Support for implementation

- Developing training materials
- Helping NRAs put the process into practice



## WP2 – Development of best practice procurement approaches



### Definition

RE & CE in the context of road construction & maintenance.



### Practice

How NRAs implement RE & CE - understand enablers and barriers.



### Future Trends

General & relevant transferrable knowledge from other sectors.



### Inventory

Approaches to meet NRA needs at different stages of circularity journey.



### Data

Data availability management systems to quantify and assess performance.

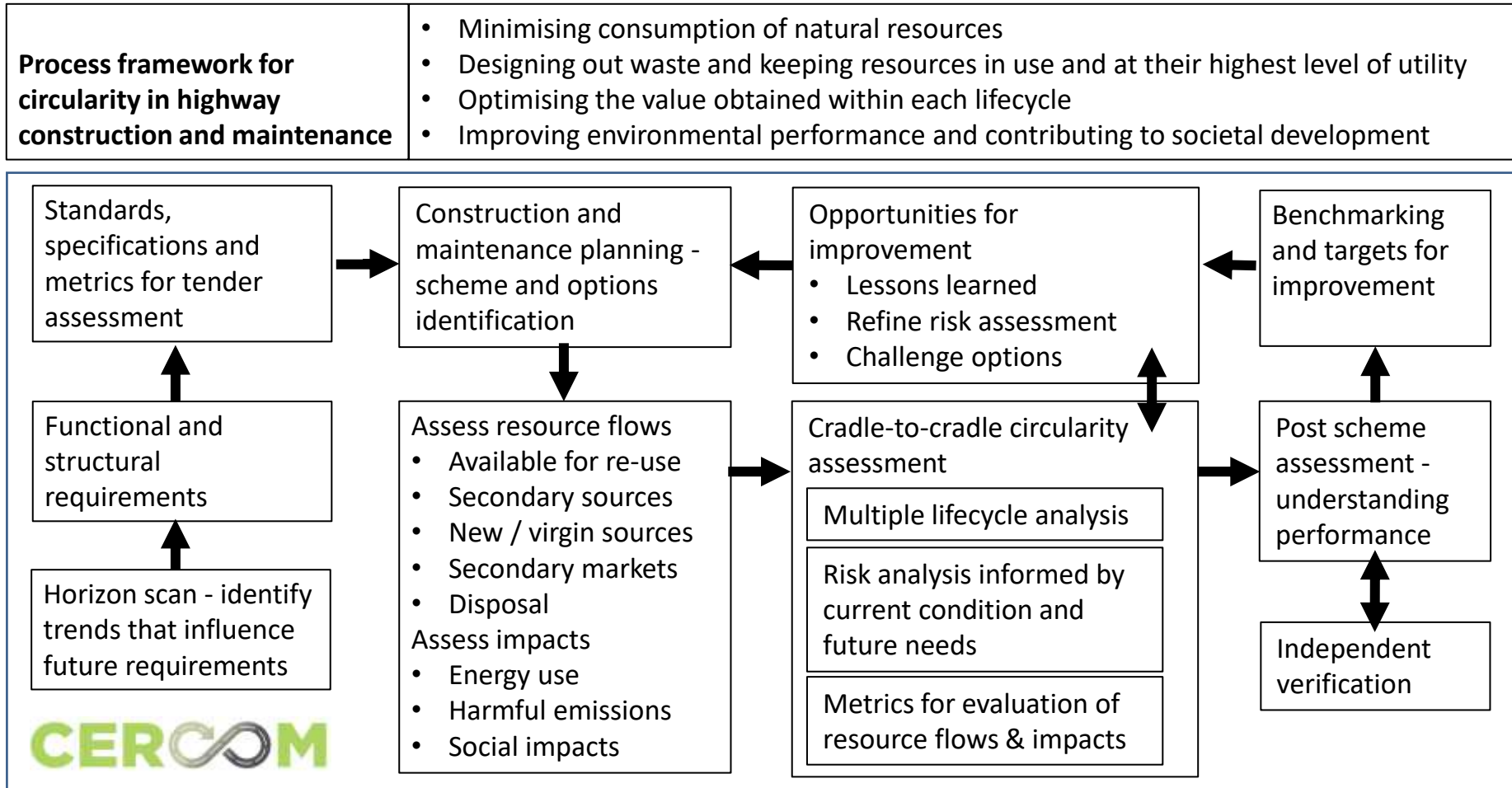


### Refine Scope

Refine scope of future work packages.

## *Circular Economy and Resource Efficiency means, by design:*

- *Minimising consumption of natural resources*
- *Designing out waste and keeping resources in use and at their highest level of utility*
- *Optimising the value obtained within each lifecycle*
- *Improving environmental performance and contributing to societal development*



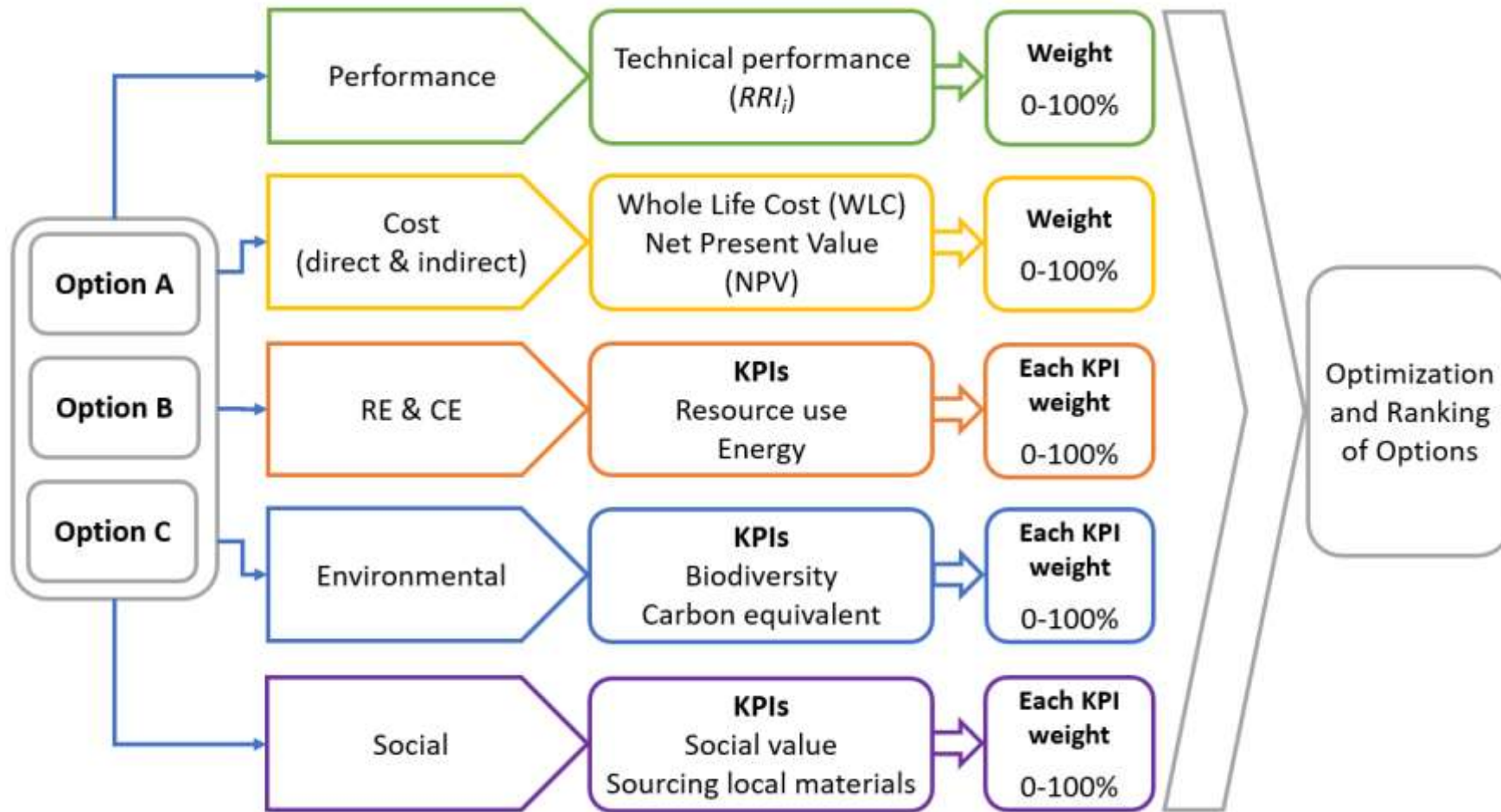
## WP3 – Risk Based Analysis Framework

- A framework
- To facilitate assessing

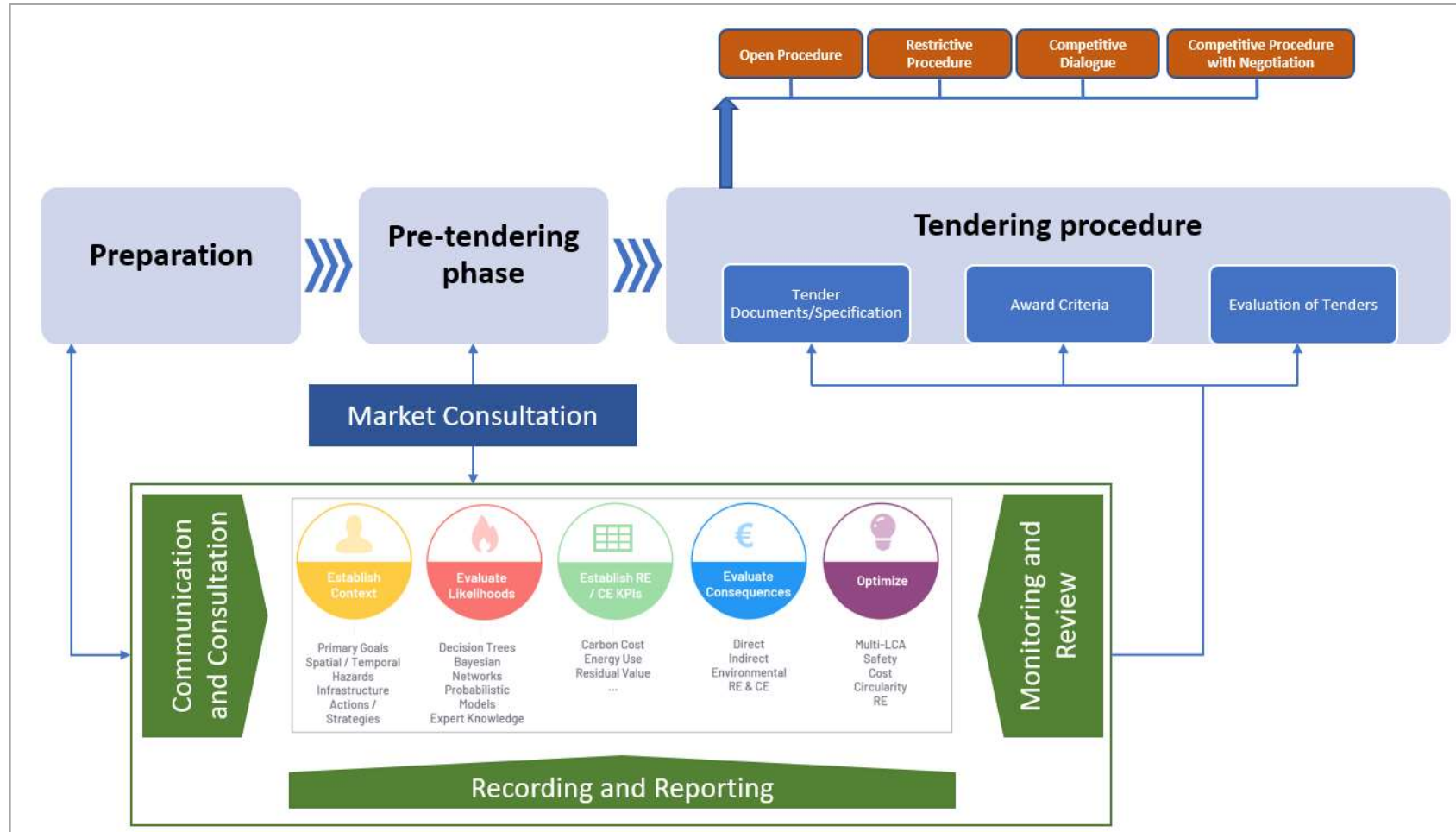


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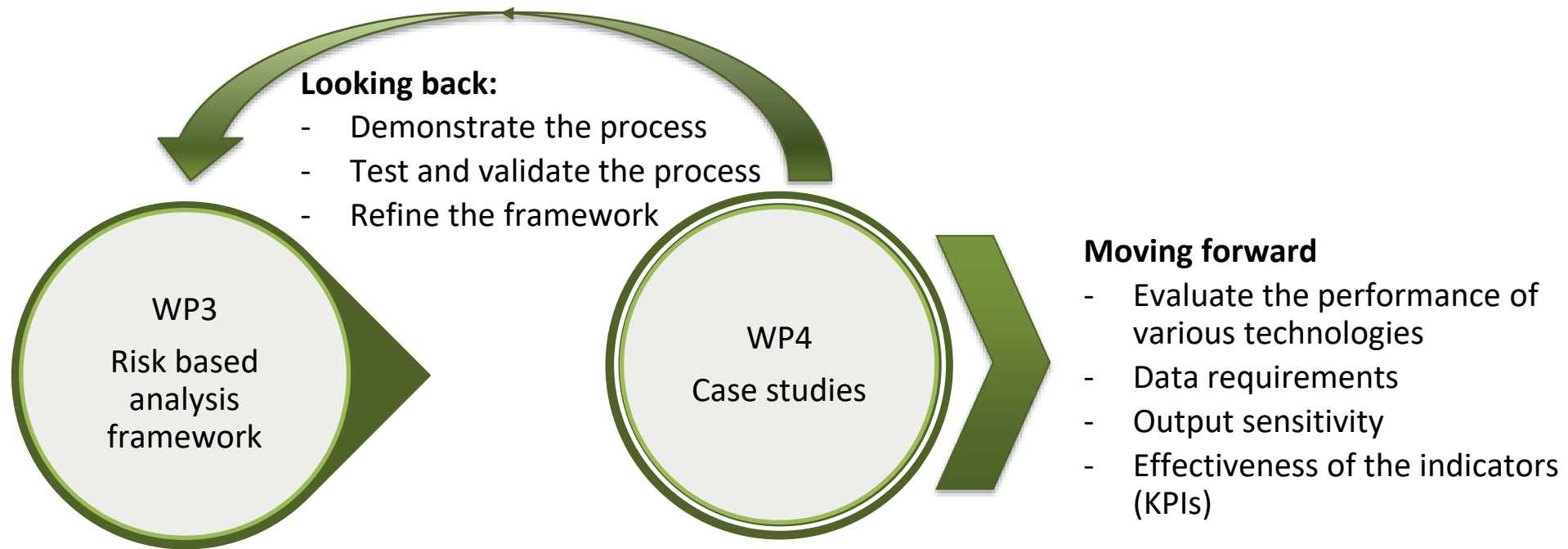




## WP3 - Integration into public sector procurement practices



## WP4 – Case Studies





## Case study I: Maintenance options for asphalt pavements

**Aim:** Assess the **technical, economic and long-term environmental** viability of several technologies that align with the **principles of RE & CE** (such as preservation techniques to service lifetime extension, use of asphalt containing high-recycled content, secondary resources and/or alternative materials) and are used in pavement rehabilitation and maintenance operations.





## Case study II: Recycling concrete technologies

**Aim:** Assess the technological developments for recovery of pure concrete fractions and their ultimate use as raw material in the maintenance of road infrastructure (for example in the application of concrete overlays).





## Case study III: A strategic approach to CE and RE

**Aim:** To demonstrate the strategies that can be adopted by NRAs to embed principles of RE and CE in their organisation and supply chain. The main part of the case study will focus on methods such as pathfinder projects, supply chain workshops, including CE concepts in Standards, integrating design and procurement, cataloguing opportunities and the possible role of a Resource Exchange Mechanism. It will identify the initiatives that have been successful in catalysing change and lessons learned. The second part of the case study will be to explore how the risk-based approach developed in CERCOM can be integrated to add value to this approach.





ANALYSIS / RESEARCH

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## Virtuous circles

The Circular Economy in Road Construction and Maintenance [CERCOM] consortium brings together leading European researchers, academics, engineers, and consultants, who are well placed to deliver on the resource efficiency (RE) and circular economy (CE) objectives of the Transnational Road Research Programme Call 2020. Here they discuss the launch of their research project

**T**he concept of circular economy is not new and appeared as a potential policy goal in the late 1970s. While the need to adopt the concept has gained importance, practical implementation has been limited generally, including in the highways sector.

Achieving the transformation has been difficult without a specific and detailed plan, supported by legislation. A prerequisite for progress is a clear definition of CE and what it means for highway authorities. This is no easy task, as currently there are over 300 definitions of CE. Also, while recycling, resource efficiency and utilisation of waste materials in pavement layers, consistent with the principles of CE, are not new to highway authorities, they provide only part of the solution. Recycled pavements still require large resource inputs, including energy, and low recycling options exist for many of the other asset classes.

To transform from the current linear

to a truly circular economy, there is need to establish a common and workable interpretation of CE as applied to highways and its role within infrastructure delivery. This must be reflected in changes to procurement practices and improved communication with the supply chain to achieve a reduction in the consumption of resources, greater reuse and designing of waste out of the system.

To address some of the challenges associated with improving resource efficiency and transitioning to a circular economy, the Conference of European Road Directors (CEDRD) launched the Transnational Road Research Programme Call 2020, managed by the Danish Road Directorate.

They have recently awarded research projects covering the following topics:  
A. Measuring and managing performance  
B. Public procurement to foster circular innovation  
C. Material research for roadside infrastructure

The aim of this programme is to accelerate the transition of the highway sector in Europe from linear economy into resource efficient circular economy. CEDRD countries are facing common issues with large amounts of waste, use of virgin materials, nature loss and climate change.

Road infrastructure maintenance accounts for significant resource consumption and generates large quantities of waste. As such, road owners need to play their part in ensuring sustainable resource use, becoming more material efficient, reusing, and repairing before recycling, and employing more renewable and biodegradable materials.

The move to CE will therefore imply profound changes in matters such as organisational and business models, the basis for decision-making, manufacturing and construction processes. However, if authorities combine efforts and harmonise

Continued on page 32

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standards, it will enable the construction sector to take the necessary steps. CERCOM is one of the projects awarded by CEDRD, covering topics A and B above. The CERCOM project will be delivered by a consortium of experts and will determine where road authorities are on the transition to circular economy, seeking to understand the barriers and enablers to go further.

An innovative aspect of the project will be the development of a risk-based framework and management tool to facilitate a step change in the adoption of RE and CE principles in procurement and multi-lifecycle management across Europe. The team will engage widely to understand stakeholder needs, develop technical solutions, and provide resources to support road authorities in this transformation.

*The move to CE will imply profound changes in matters such as organisational and business models, the basis for decision-making, manufacturing, and construction processes*

The challenges of achieving this are recognised. For example, economic analyses will need to take a broader definition of 'value' - externalities will have to be appropriately addressed and multiple lifecycles must be considered.

It will require innovative approaches to construction and maintenance to be adopted that may, as yet, have little by way of track record. It is proposed that risk analysis is a useful and appropriate tool in this regard. Already accepted to optimise infrastructure lifecycle performances, it offers in a statistically appropriate manner the framework to model the uncertainties associated with developing and adopting the principles of RE and CE.

As the project develops, case studies will test the validity of the risk-based approach over a range of technical areas (new material applications, recycling, and innovative technological at different levels of development and maturity). A suitability analysis will be undertaken to evaluate the robustness of the model results, identify the model boundaries (sensitivity to uncertain parameters), and assess

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## CERCOM

**The CERCOM consortium comprises:**  
Prof. Marc O'Connor and Prof. Eugene O'Brien of Research Group, Dublin Institute of Technology; Dr. Akshat Verma and Dr. Francesco Di Masi of both University of Technology Northumbria; Prof. Luca Di Maio, Prof. Tommaso Di Maria, Prof. and Dr. Udo Böhm of the International Transport Experts Network (ITEN), supported through Road Consulting Ltd, and Asger Waack Kær, Heidi Fred Larsen, Ole Gunn Anderson, Claus Vedergaard Nielsen and Mads Søgaard Jensen of the Danish Road Directorate (DRTM).

Highways will feature regular updates on the project and the progress CERCOM is making in this area. Further project information can be found at <http://www.cercom.eu> (tel: +45 2659 9999) resource efficiency and circular economy

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# R D S

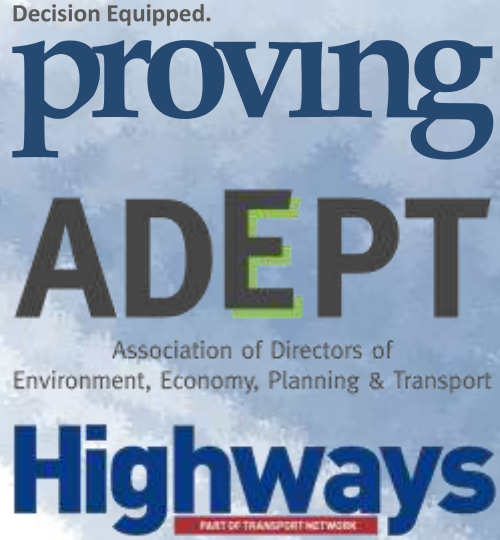
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**Thank you**

**[alan.oconnor@researchdrivensolutions.ie](mailto:alan.oconnor@researchdrivensolutions.ie)**

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# Kent County Council: Lane Rental Scheme

David Latham



# Lane Rental an introduction

Sledge hammer



Tack hammer

Change in emphasis



Drive innovation in the most difficult locations



**Kent Permit Scheme  
Implemented  
25 January  
2010**

**Kent Permit Scheme**

Traffic Management Act 2004



**Kent Lane  
Rental Scheme  
Implemented 28  
May 2013**

1.0

# Kent Lane Rental Scheme



## Legislation introduced in Kent



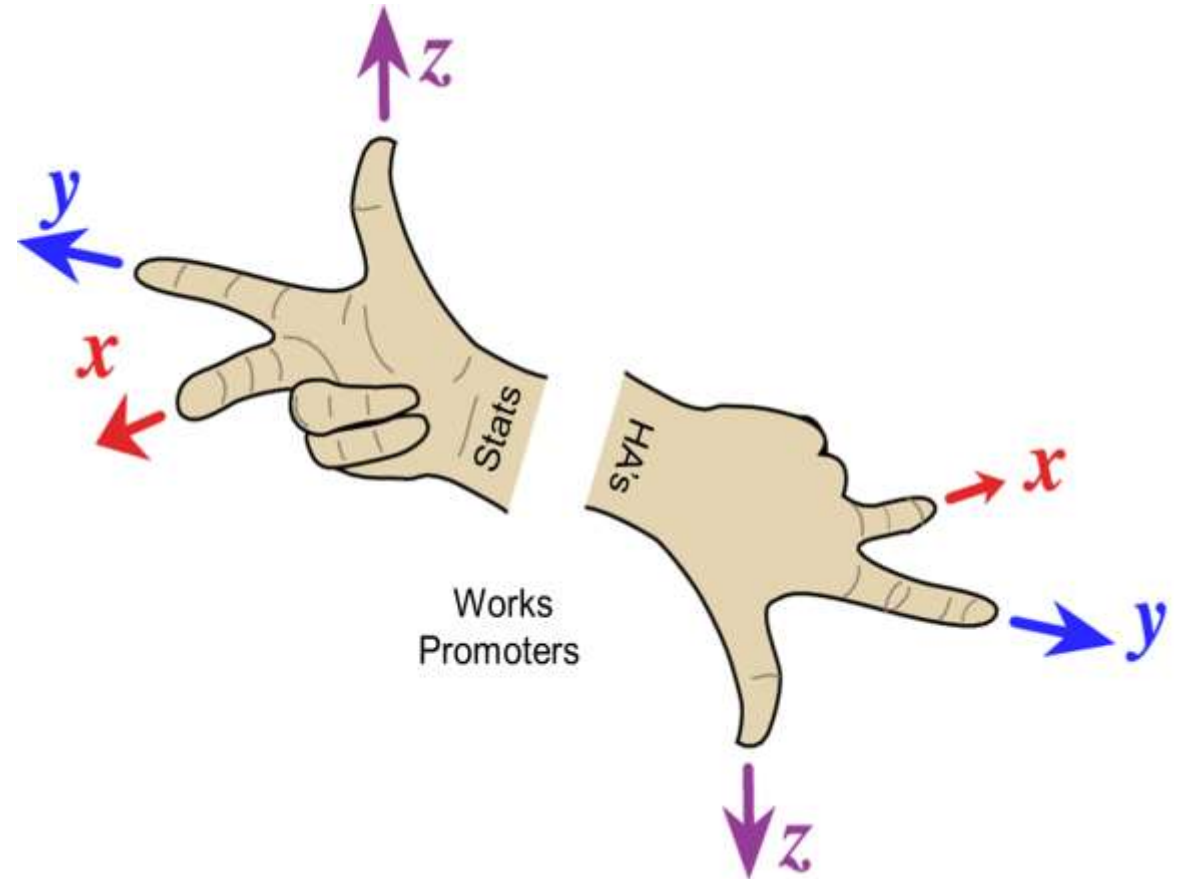
KLRS Charge Band	Full road closure	Lane closure
1	£2000	£800
2	£2000	£400
3	£1600	£600
4	£1600	£300

Routes are a mix of core, Seasonal, and term time.

## Kent Lane Rental Scheme extent and Charge bands

## Lane Rental Schemes :-

- Must be end result focused.
- Must be proportionate.
- Must be evidence based.
- Must be jointly developed.
- Must be developed to be workable, practical, fair and effective.



Core guiding principles

To encourage;

- reducing the length of time that sites are unoccupied, and hence total works durations;
- Improvement of planning, coordination and working methods to maximise efficiency;
- carrying out more works outside of peak periods, reopening the highway to traffic at the busiest times and/or making greater use of evening or weekend working where the local environmental impact is acceptable;
- optimising the number of operatives on site to enable works to be completed as quickly as possible;
- Completion of works to the required standard first time, reducing the need to return to the site to carry out further works



## Scheme objectives





### (3.3) Specified Works

A Specific Work is a registerable work that would require a permit - street works; works for road purposes; major highways works and also includes those carried out under a Section 50 Licence.

Is the proposed work a Specified Work?

NO

No Further Action

YES

Permit Application

### (3.4) Specified Location

The KLRS charges will apply to Specified Locations only - as identified within the KLRS Schedule.

Is the work site within a Specified Location?

NO

No KLRS Charge Applied

YES

### (3.5) Specified Days and Times

The KLRS charges will only apply when works are carried out during Specified Days and Times - as identified within the KLRS Schedule and associated references.

Will the works be carried out within Specified Days and Times?

NO

No KLRS Charge Applied

YES

### (6.4) Lane Widths

Lane rental charges will not be applied for works which do not reduce the number of lanes, of prescribed width, available to traffic.

Will the works reduce the number of lanes available to traffic?

NO

No KLRS Charge Applied

YES

### (6.2) Charge Categories

The daily charge to be applied will correspond to the traffic management in place for the works (road or lane closure) and the Band of the road (as defined within the KLRS Schedule).

Will the works require a Lane or Road Closure?

### ROAD CLOSURE

Band	Daily Charge
KLRS 1	£2,000
KLRS 2	£2,000
KLRS 3	£1,600
KLRS 4	£1,600

### LANE CLOSURE

Band	Daily Charge
KLRS 1	£800
KLRS 2	£400
KLRS 3	£600
KLRS 4	£300



First proposal was for 4 way temporary lights. Following a site meeting the agreement was to close the footway and use existing pedestrian crossing points, parking vehicles off highway in garage. Thereby maintaining traffic flows and capacity

**Thinking differently**



The finished job

5 days saved

**Tonbridge Road, Maidstone**  
Two Gas leaks repaired on 2 separate nights using SGN's Core & Vac (keyhole surgery).

What would have been a full week of temporary traffic lights and delays to Maidstone took place over 2 nights with no day time obstruction



Removing the Road Construction

**Innovative new technology**

## Bearsted Road, Maidstone

A developer constructed a temporary footway along a verge in order to maintain both pedestrian and Vehicular traffic capacity during their recent sewer laying works.

This avoided a temporary walkway in the carriageway and temporary traffic signals.



14 days  
saved

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## Outside the box solutions

6 days  
saved



**Upper Stone Street, Maidstone**  
Emergency cable repair work started at 18.00 hrs. under a lane closure (initial duration 8 days).

A dialogue with the UKPN supervisor and site visit to explain Lane Rental and that charges would apply from day 3 (£800 a day).

Result - fully completed reinstatement and lane reopened by 16.30 on Day 2. This reduced rush hour traffic delays to in effect only 1 day.

**Repairs are being completed quicker and hence causing less congestion**

The average occupation time for urgent and emergency works that cause congestion on the KLRS road network at traffic sensitive times has dropped.

From 5 days to 3 days.

**Swift Reinstatement following repairs**

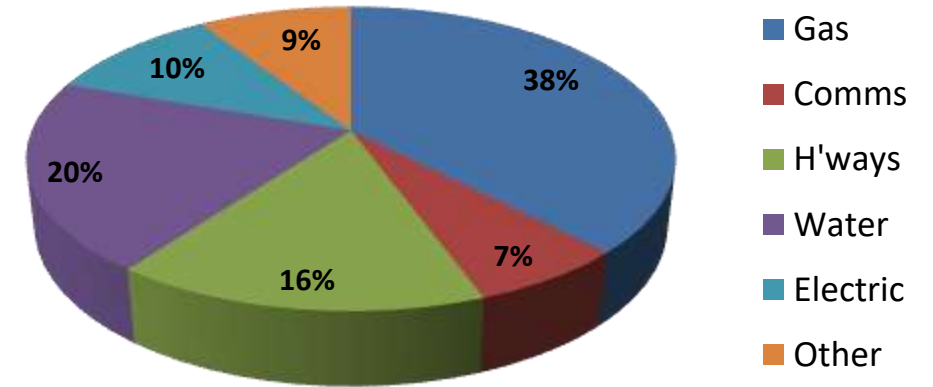


- **Pre Lane Rental industry revenue liability circa £9 million**
- **Predicted 1<sup>st</sup> year revenue liability circa £5 million**
- **Actual 1<sup>st</sup> year revenue £900,000**

**Therefore  
less is  
more**



**% age split on revenues paid by promoter type**



**The Money**

**Surplus revenues** are applied towards initiatives that are associated to the objectives of the KLRs, within;

Transportation

Enabling infrastructure;

Industry practices and research & development.

**The Governance Board** evaluate opportunities or requests for the application of surplus revenue and is comprised of ;  
representatives from the Joint Utilities Group (comprising one each from water, gas, electricity and communications);  
representative from KCC Highways and Transportation (Promoter);  
representatives from KCC as Permit Authority (Chair);  
a KCC Treasurer.



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## Surplus revenue & Governance Board

## The Kent Lane Rental Scheme – Innovation Fund

### Report on Surplus revenue, Bids received, and Bids Granted June 2013 to October 2020

#### Surplus Revenue Received

Surplus revenue June 2013 to 31 March 2015	£641,334
Surplus revenue April 2015 to March 2016	£1,462,421
Surplus revenue April 2016 to March 2017	£2,054,073
Surplus revenue April 2017 to March 2018	£1,694,607
Surplus revenue April 2018 to March 2019	£2,678,980
Surplus Revenue April 18 to Oct 2020	£1,179, 984

**Up to October 20  
34 approved bids  
amounting to  
£3,500,000**

[https://www.kent.gov.uk/data/assets/pdf\\_file/0018/51831/Kent-Lane-Rental-Scheme-surplus-revenue-spend-report.pdf](https://www.kent.gov.uk/data/assets/pdf_file/0018/51831/Kent-Lane-Rental-Scheme-surplus-revenue-spend-report.pdf)



**Thankyou  
and Any  
questions**

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# Coffee Break

10 Minutes

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# VfM Assessments for Framework Contracts

Andy Perrin, Research Leader

# Programme Overview



- **Rationale & Purpose**
- **Programme Structure**
- **Partners**
- **Timescales**
- **Deliverables**



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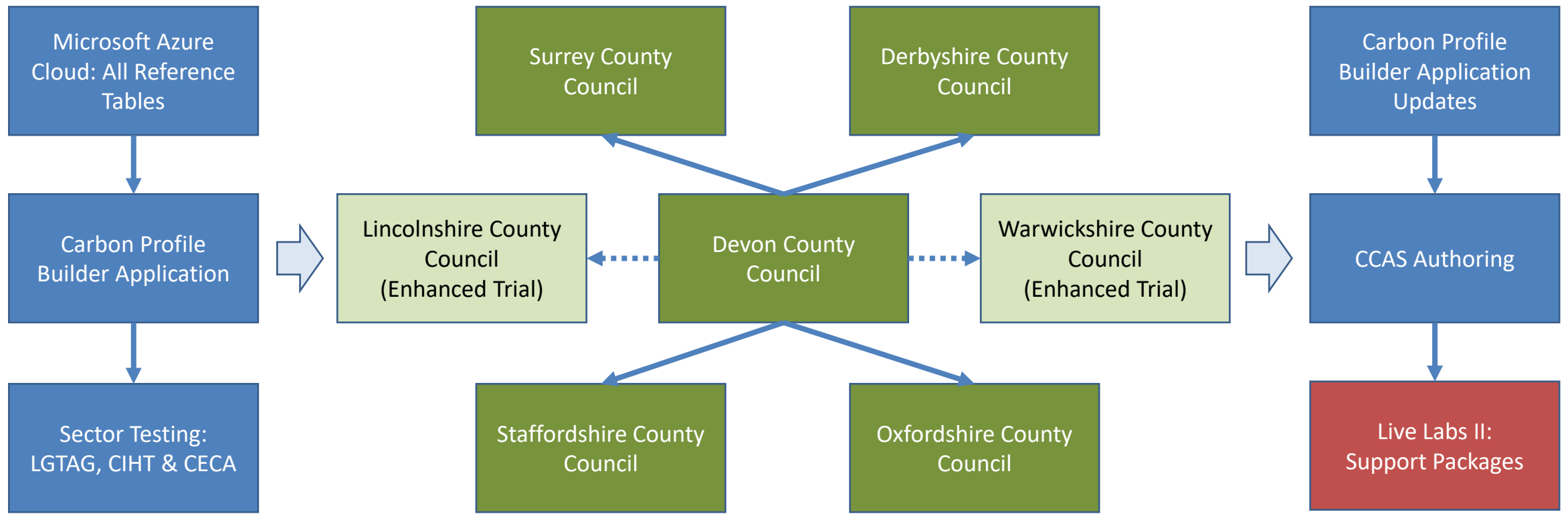
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# Carbon Calculation & Accounting Standard (CCAS) & Carbon Profile Builder

Simon Wilson, Research Leader

# Progress Update



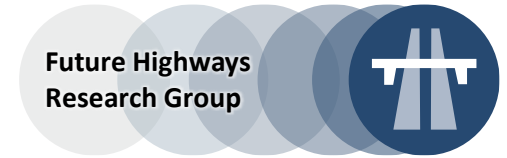
# Method Demonstration



- [Carbon Profile Builder...](#)

# Key Questions

## Rationale for the Carbon Calculation & Accounting Standard



- **Do you think the goals of the FHRG programme are valid?**
- **Does a centralised and standardised foundation data set work?**
  - Or would you prefer to build an organisation specific toolset?
- **Have you selected a carbon calculation toolkit?**
- **What is your internal state of readiness for carbon accounting?**
- **What is your current supply chains' state of readiness?**



# Key Sector Questions

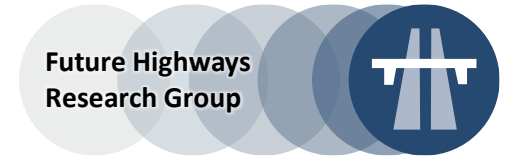
## Granularity & Reporting Accuracy



- **Cost-Based Carbon Accounting: £ 3M spend multiplied by carbon factor.**
  - Between 20% and 30% accuracy – **unacceptable.**
- **Three acceptable methods:**
  - Report annually by scope.
    - E.g. a vehicle travels 12,000 miles a year multiplied by the emissions factor.
    - Or, total asphalt purchased multiplied by emission factor.
    - **Poor use analysis.**
  - Activity based: using template profiles.
    - E.g. A reactive maintenance team fills **18 potholes per shift,**
    - ...we have **8 reactive maintenance teams** completing **305 shifts per year,**
    - ...multiplied by the reactive maintenance carbon profiles emissions factor.
    - Repeated for all standard work profiles (cyclical, reactive and winter maintenance).
    - Single **instance profiles are completed for schemes and capital programmes.**
    - **Good accuracy (>80%), low resources demand.**
  - Activity based: creating individual profiles for each instance.
    - **Excellent reporting granularity and accuracy, hugely time consuming and resource hungry.**
- **Which method works best for you?**

# Key Sector Questions

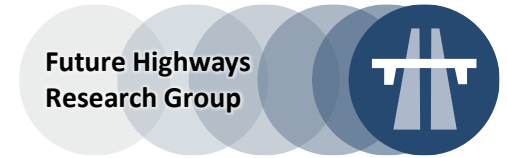
## Capability & Capacity



- **Who is tasked with creating and sustaining service-level carbon footprint reporting?**
  - Within your organisation?
  - Are there other resources assigned within your authority?
    - If so what are the reporting responsibilities / boundaries?
- **Do you, as highways SMEs, believe you have sufficient understanding of this subject?**
  - What do you think needs to be done to improve internal capability.

# Key Sector Questions

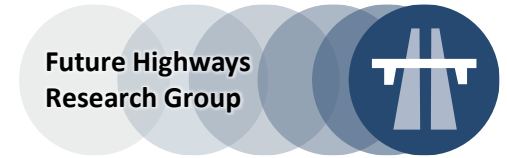
## Activity Based Carbon Accounting



- **Is the activity based carbon accounting method suitable for your organisation?**
- **Does an activity profiling tool help in identifying:**
  - Scope of highways activities?
  - Reporting roles and responsibilities?
  - Areas requiring carbon profiles?

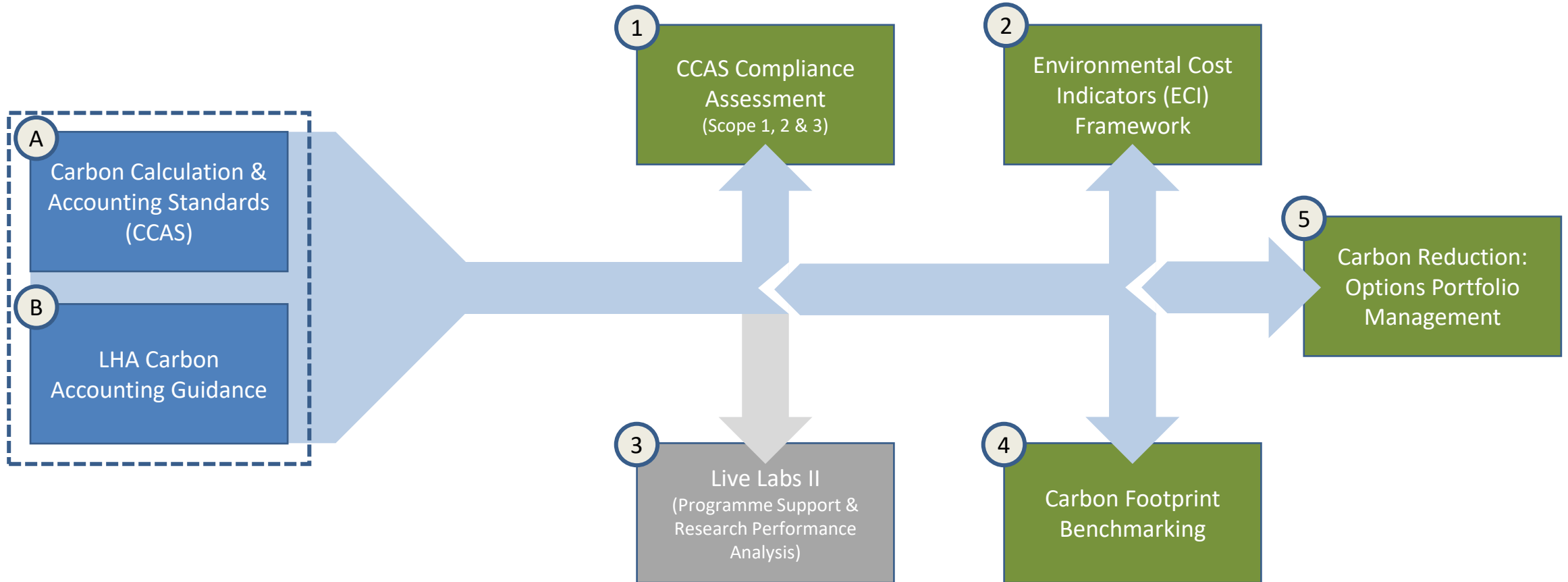
# Key Sector Questions

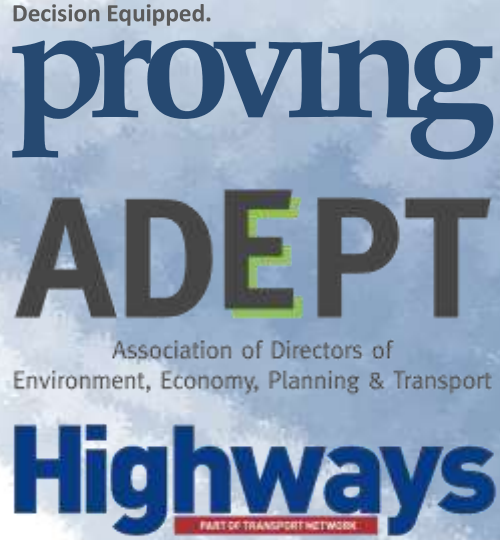
## Standard Activity Profiles



- **Are standard, tailorable profiles useful to you as a launchpad?**
- **Do you have sufficient data to tailor / create profiles for each GHG category?**
  - Purchased Services
  - Materials
  - Vehicles, Plant & Equipment (VPE, Using Combusted Fuels)
  - Transport (VPE, Materials & Waste)
  - Waste
  - Travel (Business & Operative Commuting)
- **Will your provider assist in creating the carbon profiles?**
- **How sensitive is your provider regarding:**
  - Carbon data sharing?
  - Costs sharing?

# Future Phases

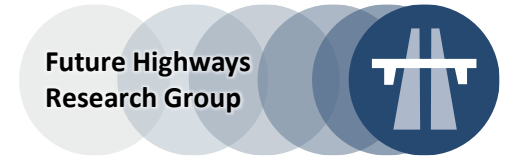




# FHRG Live Labs II: Support Packages

Future Highways Research Group

# Live Labs II: Support Package



- **Currently in design...**
- **This will include:**
  - Implementation of an enhanced version of the *Carbon Calculator & Carbon Profile Builder*.
  - Baseline carbon position assessment.
  - Live Labs II: Experimental Profile construction and verification.
  - Independent waypoint assessments.
    - Currently planned as one per year + end of programme carbon saving statement.
  - Dissemination and peer review within the FHRG community.
    - Including an assessment of future sector / market potential.

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# Next Meeting: Agree Date & Location

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# End of Document

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