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**ADEPT**  
Association of Directors of  
Environment, Economy, Planning & Transport

**ADEPT**

# LIVELABS2

Decarbonising Local Roads

**Giles Perkins FCILT, Programme Director**  
**June 2026**





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£30m innovation fund



Carbon baseline and measurement



7 Live Labs



Methodologies, products and services



4 themes



Longitudinal monitoring & evaluation



4 nations



Year 4, amplify and accelerate



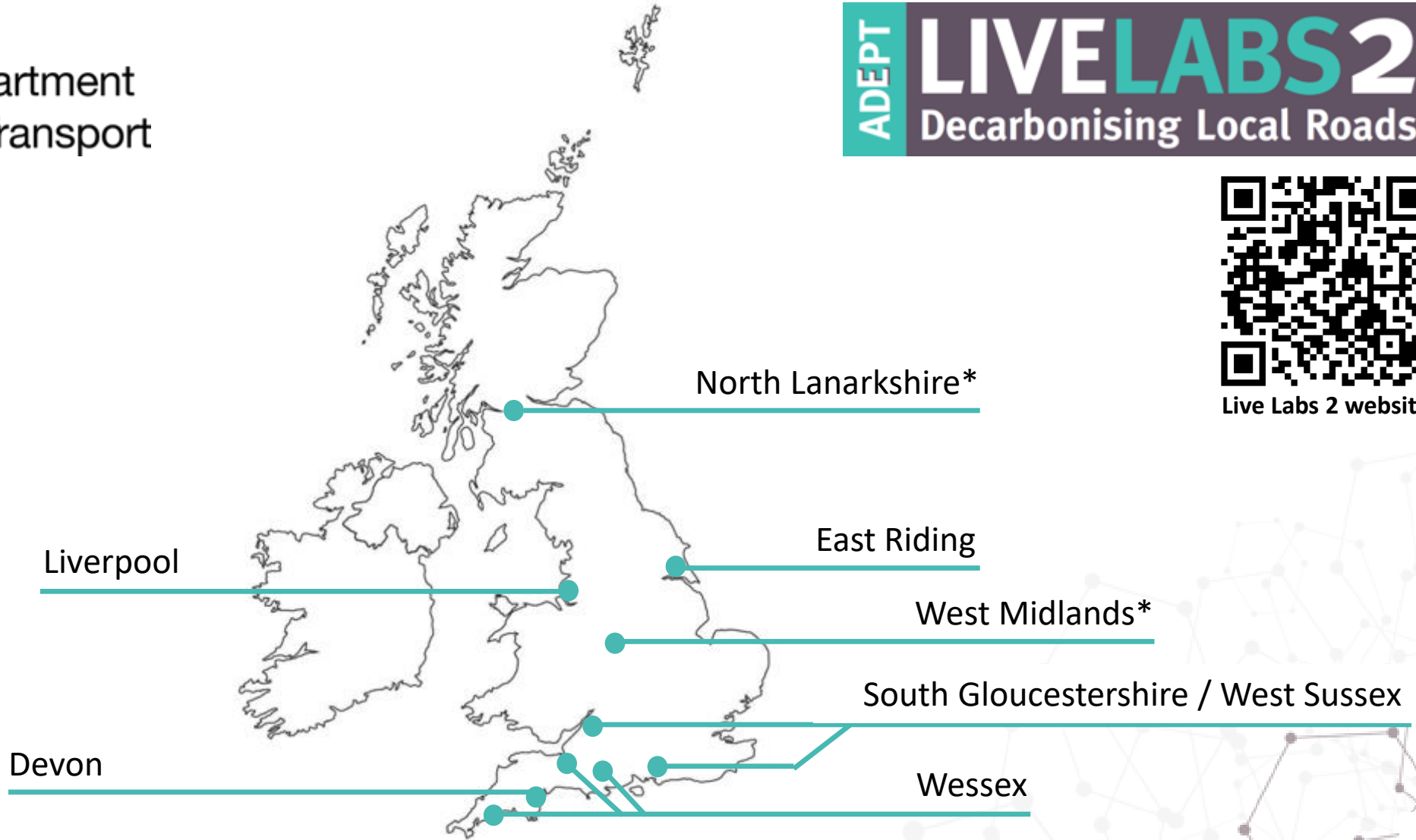


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ADEPT **LIVELABS2**  
Decarbonising Local Roads



Live Labs 2 website



\*CEDR



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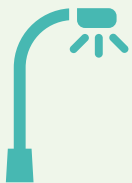
## Four thematic areas



Centre of Excellence for  
Decarbonised Roads  
(CEDR)



Corridors and Places



Street Lighting



Green assets & infrastructure



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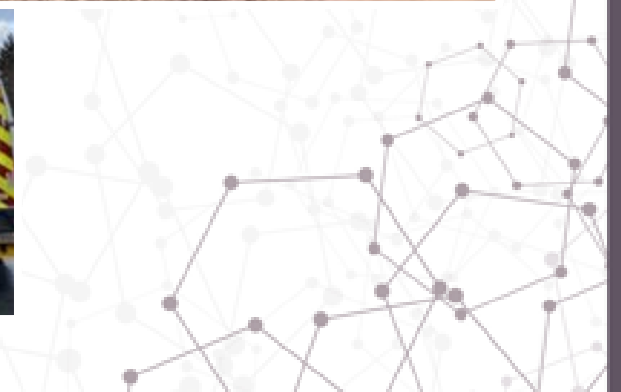
# Strategic & tactical interventions

**10 Strategic Innovations across the Local Highways Lifecycle**

- 1. Smarter procurement - Liverpool**  
Liverpool's Sustainable Procurement and Contracting Toolkit is an innovative resource supporting the successful integration of value reduction initiatives into all stages of UK highway contracting. It explains rules and gives practical examples to help build low carbon and innovative solutions into contracts from the outset.
- 2. Knowledge bank - CDE**  
An open online library of low-carbon materials, solutions and supporting data. It helps councils compare potential options, learn from real projects, and make quicker, better-informed decisions.
- 3. Carbon decision tools - Liverpool**  
Simple tools that help engineers choose low-carbon options in their everyday design work. They encourage avoiding unnecessary construction and selecting greener suppliers early, saving both carbon and cost.
- 4. Throughput decision framework - Wexham**  
The Highway Throughput Toolkit brings the principles of throughput economics into the road sector, helping authorities and contractors make decisions that meet people's needs while staying within planetary boundaries. The toolkit provides a structured way to evaluate both strategic and tactical impacts of highway maintenance activities at strategic and project levels.
- 5. Early contractor collaboration - Devon**  
Getting contractors involved early in the process design to challenge standard approaches with a focus on innovation and reducing carbon. This leads to better designs, lower costs, and reduced carbon through smarter materials and methods.
- 6. Rethinking roadworks - Devon**  
Instead of using temporary traffic lights, full road closures implemented on the Devon project is making work safer for the public and the workers, cut carbon emissions significantly and reduce the construction period by 50%.
- 7. Smarter street lighting - East Riding**  
A new approach to street lighting that focuses on safety rather than default illumination. Using data, AI and technology, the approach uses targeted lighting solutions to reduce energy use, costs and carbon while maintaining safety.
- 8. Reduced grass cutting - Greenpoint**  
Cutting roadside grass less often to save money, reduce emissions and improve biodiversity. The approach helped environmental and cost benefits and involved the local community in understanding benefits and impacts.
- 9. Turning grass into energy - Greenpoint**  
Instead of leaving cut grass to decompose, it is processed into renewable energy as biogas, or biochar, which saves carbon and improves soil quality. This turns roadside waste into a valuable resource.
- 10. Carbon budgeting - Wexham**  
The Carbon Budgeting Toolkit helps local authorities understand how highway maintenance emissions make sense over time and how operational activities align with long-term decarbonisation pathways. By taking emissions data with national and local decarbonisation pathways, the toolkit provides a practical way for councils to prioritise actions that reduce emissions and make consistent, data-driven decisions.

*It's through a one-to-one meeting with a Live Lab project lead (please contact [www.ces@cs.cim.com](mailto:www.ces@cs.cim.com))*

For further information visit [www.adaptiv.org.uk/live-labs2](http://www.adaptiv.org.uk/live-labs2)





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## Key benefits



Cost – capital & revenue



Time – to deploy and maintain



Planet – carbon and other impacts

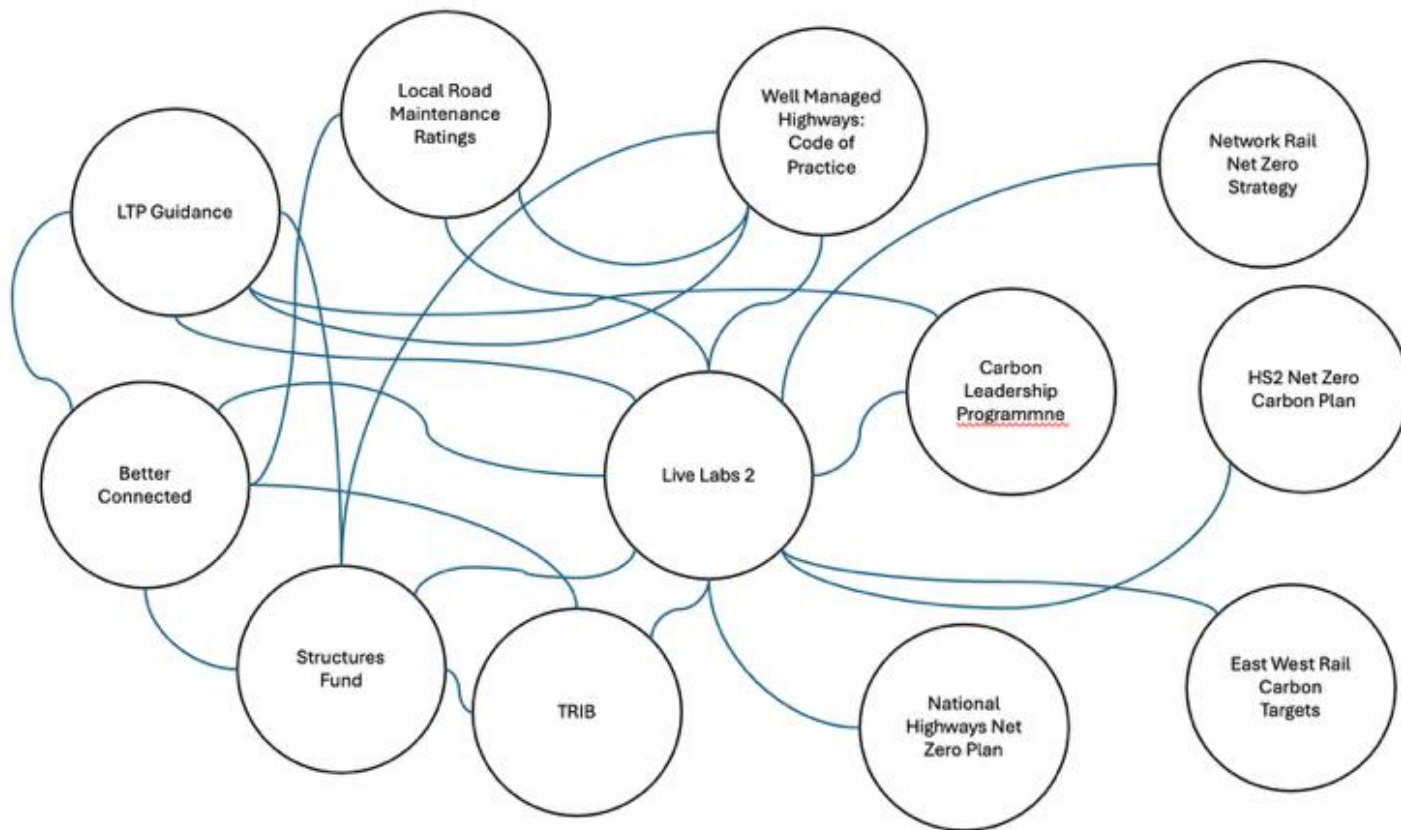




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## Systematic contributions





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*“I want to set you a challenge as local leaders: Get involved with Live Labs 2. Not just as an observer, but by getting stuck in... By learning... And by sharing successes, so that local triumphs can benefit the whole nation”.*

**Simon Lightwood, MP, Parliamentary  
Under-Secretary of State for Local  
Transport**



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## Local highways maintenance transparency report

### B9 – Adapting roads to withstand climate pressures

Climate and environmental factors, such as heavy rainfall, prolonged heat, and freeze-thaw cycles, are integral to effective highways asset management, as they influence asset performance, deterioration rates and long-term resilience. Understanding both the impacts of a changing climate and the carbon implications of maintenance activities supports better decision-making, helping authorities to optimise durability, manage risk and deliver best whole life value from their assets.

	None of the above	Yes / No
9.1.6	Have you measured and benchmarked the greenhouse gas emissions from your highways maintenance service using a recognised industry standard? Or do you have arrangements in place to do this, such as by signing up to the DfT funded ADEPT Carbon Leadership Programme.	Yes / No
9.1.7	Have you formally engaged with the DfT funded ADEPT live labs 2 Programme, to understand what lessons your authority can utilise to increase the efficiency of your operations and support decarbonisation efforts?	Yes / No

# CEDR (North Lanarkshire & West Midlands)



Centre of Excellence  
for Decarbonising Roads

1



Demonstrator Trials

2



Knowledge Bank  
Development

3



Industry Engagement



KNOWLEDGE BANK

A central resource for data, tools and insights



Home

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## Case Studies



Grid



Map

Search by

Name

Search

Search

Showing  
19 results

Page Size

12

Sort by

Date



North Lanarkshire Council

### Line Marking - Transverse

Eco Hibrite | Eco Hibrite AR | Pumabrite |  
Spectrum ECO Versaline | UltraLine |  
Weatherhine

As part of Live Labs 2, North Lanarkshire Council trialled 5 different low-carbon alternative against traditional thermoplastic as transverse, equidistant lines. This was replicated across 3 sites – one A road.

North Lanarkshire



North Lanarkshire Council

### ACLA - King St. Carpark

ACLA®

As part of Live Labs 2, North Lanarkshire Council has trialled ACLA, a low-carbon aggregate in the binder course of the King Street Car Park resurfacing works. These works were undertaken in September 2025, through a full carpark closure for 5 days.

North Lanarkshire



Transport for West Midlands

### West Midlands Pothole Phase 2

Degafill | Elastomac | EZ Street Asphalt® | HRA |  
Thermal Road Repairs | Ulipatch Bio | Valfix

The trials were conducted on the West Midlands Live Network in Sandwell on the 16th July 2025. We trialled a total of 7 materials (Degafill, Ulipatch Bio, EZ street asphalt, Valfix, HRA45/10, Thermal Road Repairs, Elastomac).

Sandwell



### Real-world testing

Practical trials on live roads to generate valuable evidence.



### Centralised knowledge

A growing bank of data, tools and case studies for the sector.



### Stronger together

Engaging the industry to share, learn and drive change.

# East Riding – Decarbonising Streetlighting

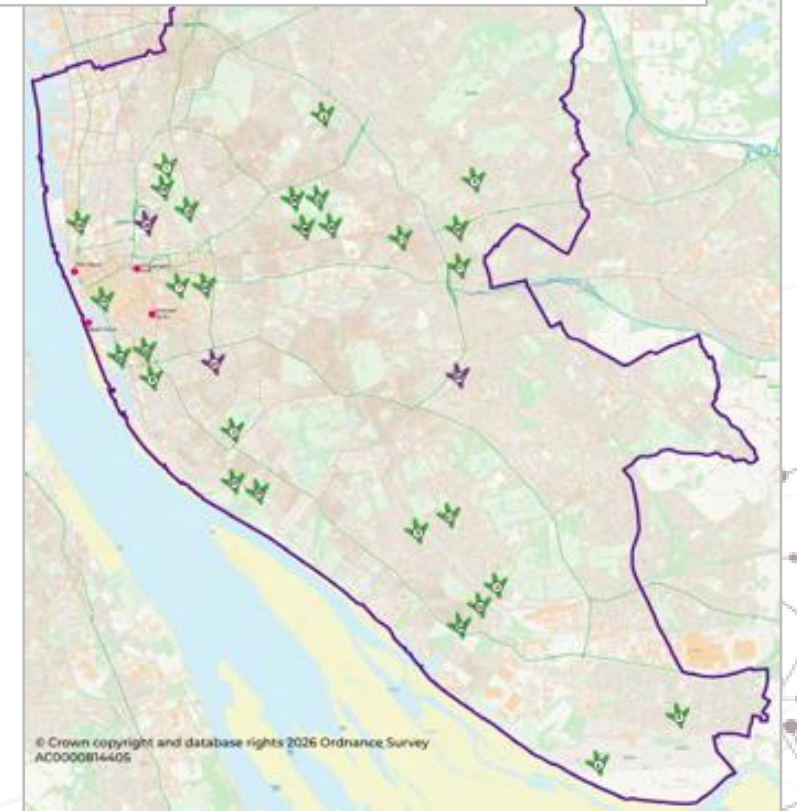
- Saving of **£1.2m** on test sites
- **Carbon saving of 120t** over the next ten years
- **Reduction** in driver speeds up to **10%**
- Near misses reduced by **12%**
- Collision rates down by **one third**
- **More expansive business case** being submitted



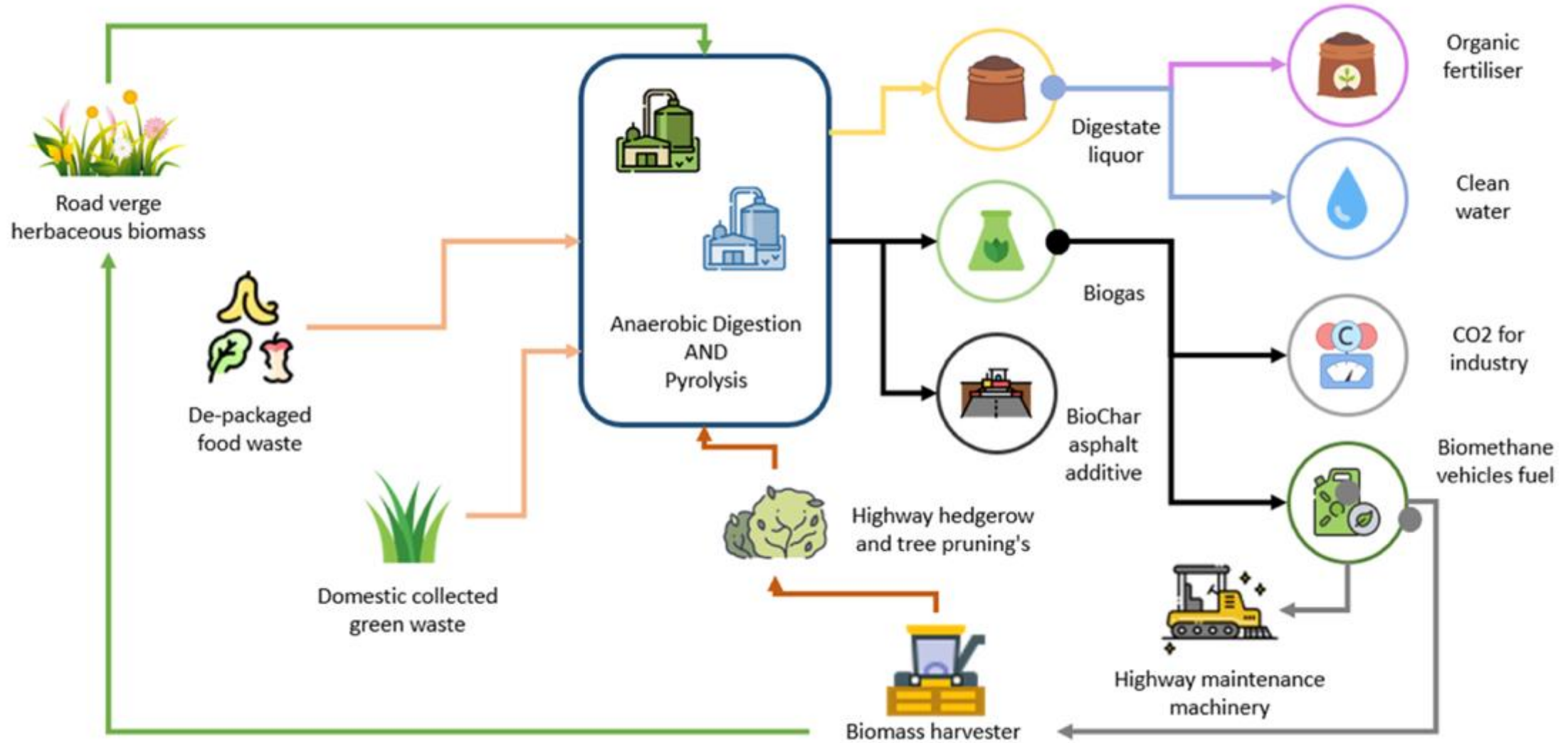
Camera	Monitoring Period	Articulated HGV		Bus		Car		Motorcycle		Total	
		Whole Day	Dark Periods	Whole Day	Dark Periods	Whole Day	Dark Periods	Whole Day	Dark Periods	Whole Day	Dark Periods
MP#1	Sep-24 (Before)	30.4	33.28	32.86	34.07	32.72	34.15	34.24	34.15	32.65	34.14
	Sep-25 (After)	27.76	31.4	31.95	32.49	32.21	32.49	31.65	30.59	32.12	32.47
	Change from Before	-8.86%	-5.65%	-2.77%	-7.75%	-1.56%	-4.86%	-7.56%	-10.42%	-1.62%	-4.89%

# Liverpool – Eco-system of things

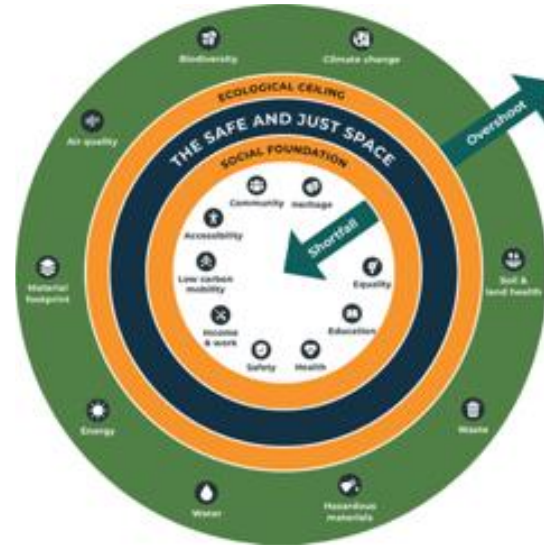
- Highways are the city's **largest physical asset** (£4.9bn replacement value)
- **Historic under-investment with variable conditions/aging infrastructure**
- Commitment to an ambitious **Net Zero 2030 target**, but:
  - No baseline for lifecycle carbon existed
  - Supply chains and procurement processes were fragmented
  - Limited collaboration meant low adoption of decarbonised materials/plant.
- Complex urban neighbourhoods require scheme-by-scheme decision
- No tools/methods for consistent carbon-led optioneering.
- Business-as-usual highways maintenance alone **cannot meet net-zero trajectories**.



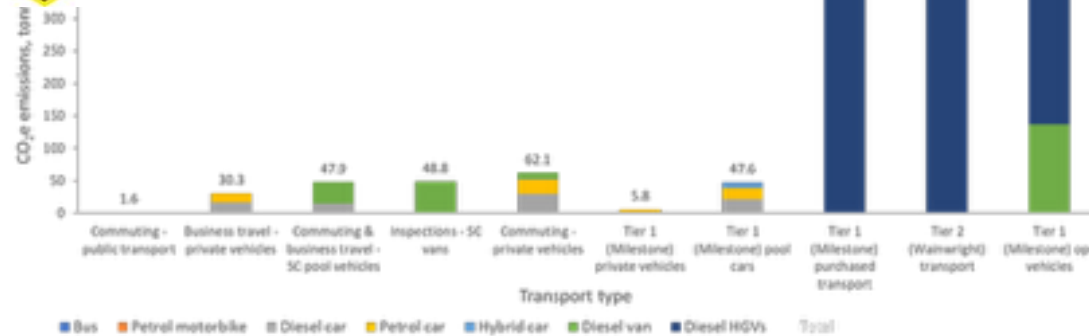
# South Gloucestershire / West Sussex



# Wessex – Whole service approach



- 19% Carbon Saving across the project
- 26% Carbon Saving across the project for full-service life



Wessex Live Lab Carbon Savings



# Devon – A382 carbon negative road



ECI relationship with contractor

Carbon reduction during design

Detailed carbon baseline

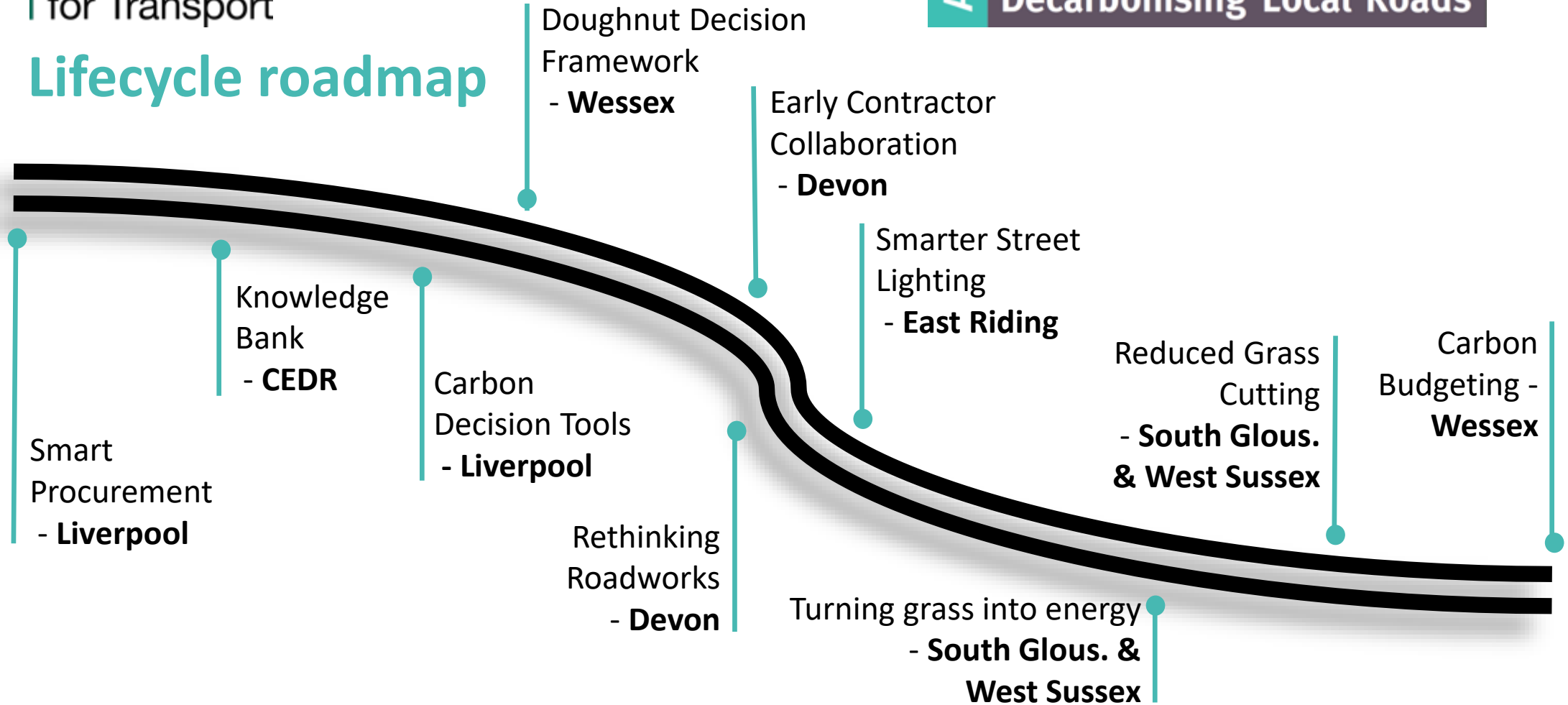
No single solution

Nature-based solutions considered



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## Lifecycle roadmap





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## Can you afford not to do this?

- Strategic 'oven ready' innovations
- Portfolio of 'tactical' innovations
- Proven business cases
- Procurement roadmap
- Knowledge bank
- Vast evidence base
- Synergies and requirements elsewhere

**= efficiencies and savings**





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## What are your challenges and barriers?

- Institutional
- Technical
- Practical
- Resources
- Skills
- Data
- ...others?

**We are here to help you overcome them...**





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## Year 4 – contextualise, amplify, adopt

- Regional workshops
- Tailored workshops
- Monthly triage service
- Bespoke events
- Collaborative working
- Conferences
- LLM query engine

**A new sectoral BAU**





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## Contact us

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***Search: ADEPT Live Labs 2***



**Live Labs 2 website**