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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



7 Live Labs



4 themes



4 nations



Carbon baseline and measurement



Methodologies, products and services



Longitudinal monitoring & evaluation



Year 4, amplify and accelerate

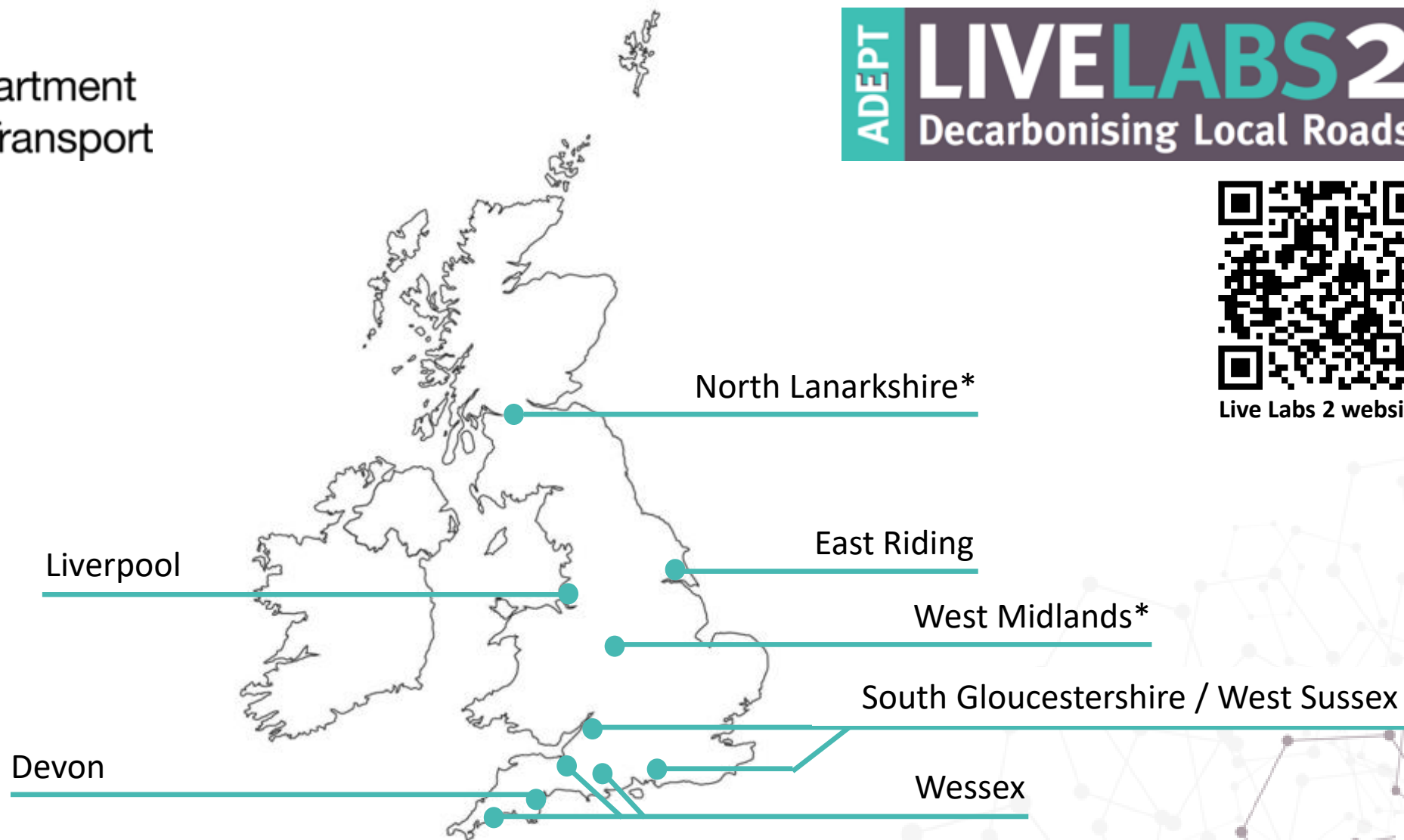


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ADEPT **LIVELABS2**
Decarbonising Local Roads



Live Labs 2 website



*CEDR



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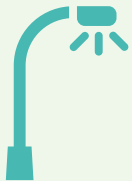
Four thematic areas



Centre of Excellence for
Decarbonised Roads
(CEDR)



Corridors and Places



Street Lighting



Green assets & infrastructure



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Strategic & tactical interventions

ADEPT

LIVELABS2
Decarbonising Local Roads

10 Strategic innovations across the Local Highways Lifecycle

1. Smarter procurement - Liverpool

Liverpool's Sustainable Procurement and Contracting Toolkit is an interactive resource supporting the successful integration of various reduction initiatives into all stages of UK highway contracting. It explains rules and gives practical templates 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 past 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 putting unnecessary construction and selecting green suppliers early, saving both carbon and cost.

4. Throughput decision framework - Wrexham

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 planning 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 project design to challenge standard approaches with a focus on innovation and reducing carbon. This leads to better designs, lower costs, and reduced carbon through improved materials and methods.

6. Reducing 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 workforce, cut carbon emissions significantly and reduce the construction period by a year.

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 stores carbon and improves soil quality. This turns methane waste into a valuable resource.

10. Carbon budgeting - Wrexham

The Carbon Budgeting Toolkit helps local authorities understand how highway maintenance emissions evolve over time and how operational activities align with long-term decarbonisation pathways. By linking emissions data with national and local decarbonisation pathways, the toolkit provides a structured way for councils to prioritise actions that reduce emissions and make consistent, data-driven decisions.

For further information visit www.adaptiveweb.org.uk/livlabs2/

To arrange a one-to-one meeting
with a Live Labs project lead please contact
emma.murray@transport.gov.uk





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Key benefits



Cost – capital & revenue



Time – to deploy and maintain



Planet – carbon and other impacts

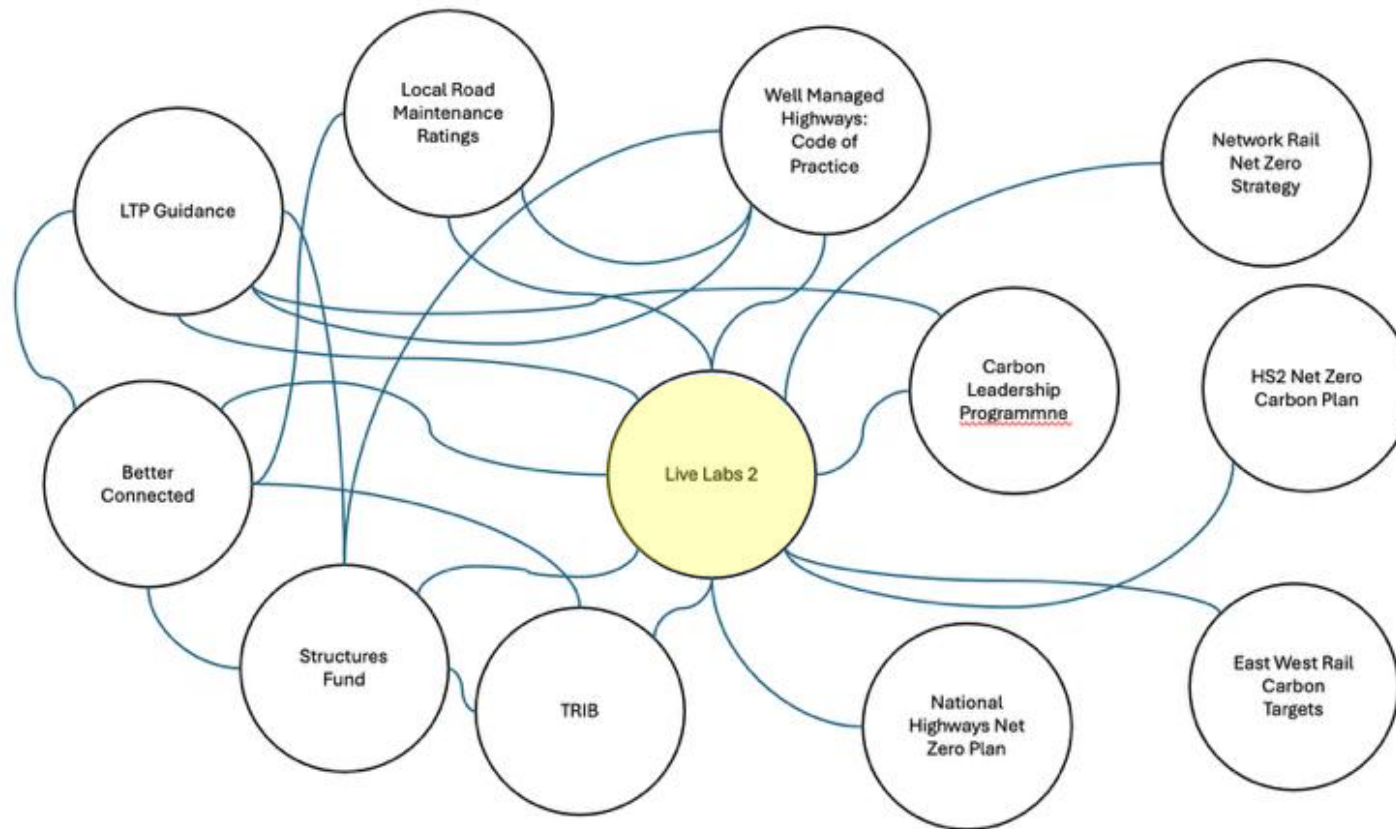




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Systematic contributions





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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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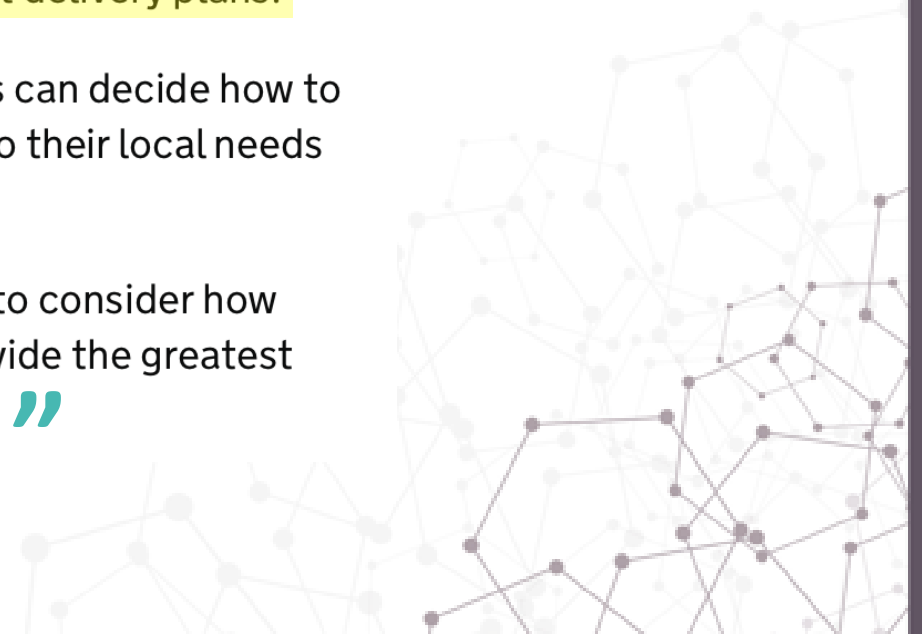


Statutory guidance, Local transport plans

“ As part of local transport outcome frameworks, LTAs must report on the carbon emissions of their local transport projects. LTAs will need to report on both the user and infrastructure emissions of schemes included in their local transport delivery plans.

LTAs must also use QCG when developing their LTPs. However, LTAs can decide how to apply the different approaches set out in QCG flexibly and subject to their local needs and circumstances.

QCG should be used by LTAs early in the development of their LTPs to consider how transport emission can be reduced as part of their LTP. This will provide the greatest opportunities to reduce the amount and costs of carbon emissions. ”





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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

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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](#)



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](#)



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

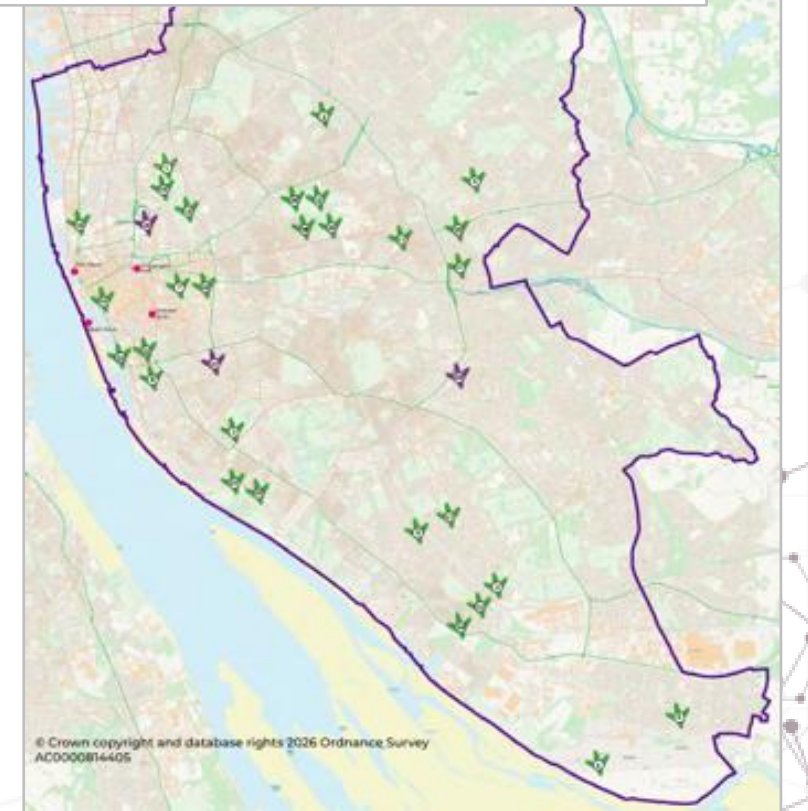
- Saving of **£1.2m** on test sites
- **Carbon saving of 120t** over the next ten years
- **Reduction** in driver speeds up to **10%**
- Near misses reduced by **12%**
- Collision rates down by **one third**
- **More expansive business case** being submitted



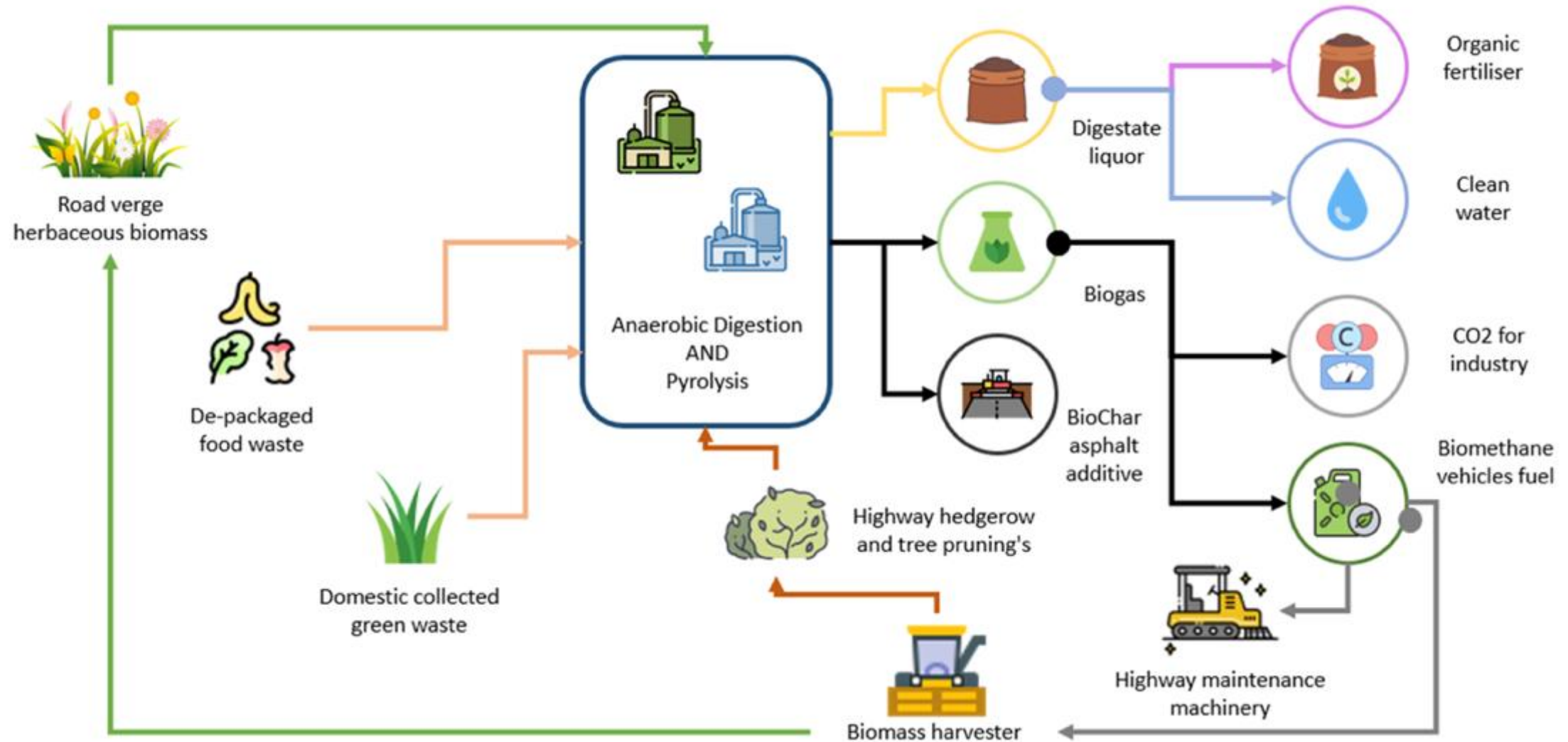
Camera	Monitoring Period	Articulated HGV		Bus		Car		Motorcycle		Total	
		Whole Day	Dark Periods	Whole Day	Dark Periods	Whole Day	Dark Periods	Whole Day	Dark Periods	Whole Day	Dark Periods
MP#1	Sep-24 (Before)	30.4	33.28	32.86	34.07	32.72	34.15	34.24	34.15	32.65	34.14
	Sep-25 (After)	27.76	31.4	31.95	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

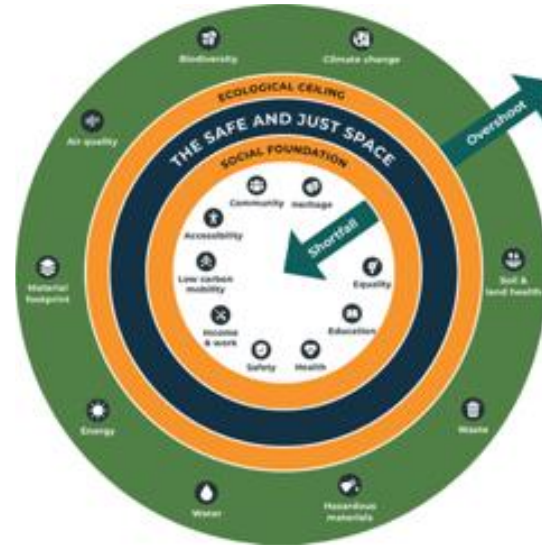
- Highways are the city's **largest physical asset** (£4.9bn replacement value)
- **Historic under-investment with variable conditions/aging infrastructure**
- Commitment to an ambitious **Net Zero 2030 target**, but:
 - No baseline for lifecycle carbon existed
 - Supply chains and procurement processes 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**.



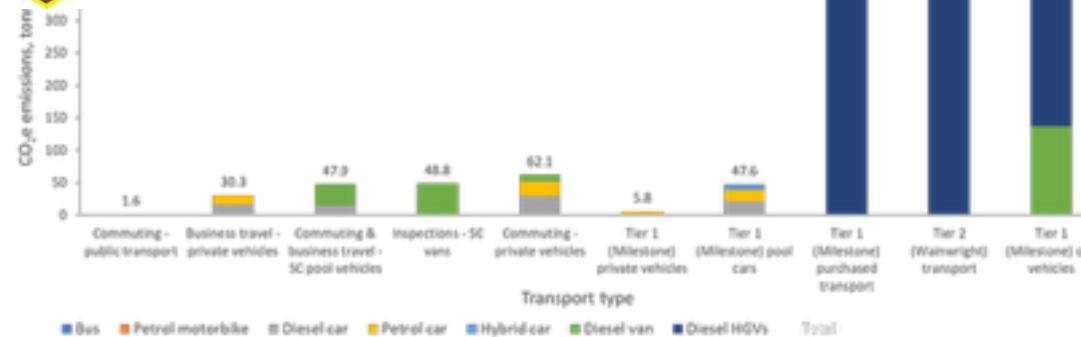
South Gloucestershire / West Sussex



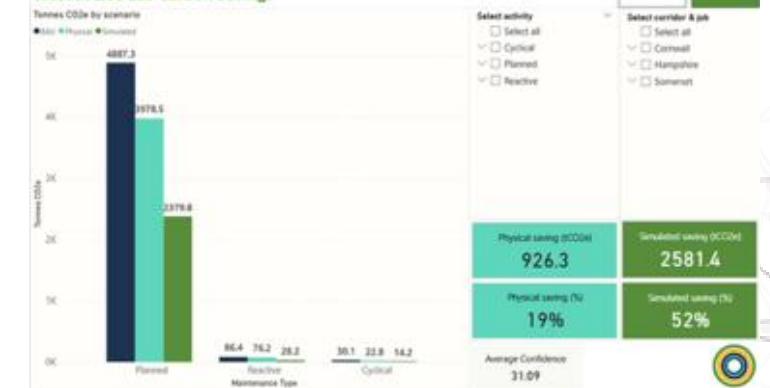
Wessex – Whole service approach



- 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

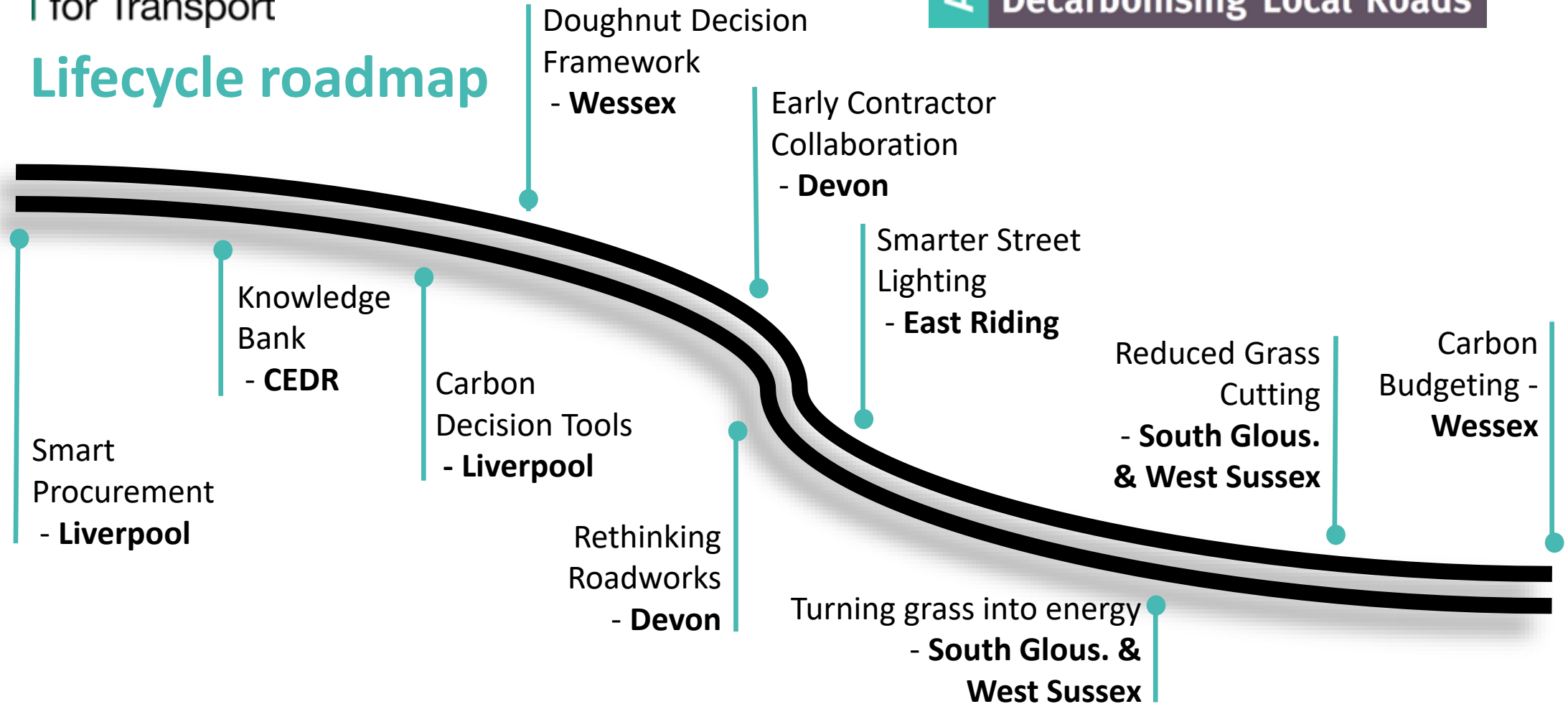
No single solution

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