



ADEPT **LIVELABS2**
Decarbonising Local Roads

Centre of Excellence for Decarbonising Roads



South Campus



Our partners



2 Campuses, 1 Programme

Programme Centre



Deliverables Key

 Dual delivery



North Campus – North Lanarkshire

- Live Lab demonstrators
- Challenge-led innovation programme
- Carbon and Technical Review
- Material Knowledge Bank
- Regulatory Sandbox



South Campus – Transport for West Midlands

- Live Lab demonstrators
- Challenge-led innovation programme
- Carbon and Technical Review
- Skills development via Skills Academy
- Translation of specifications & standards

2023 in Review

MARCH

Dragon's Den



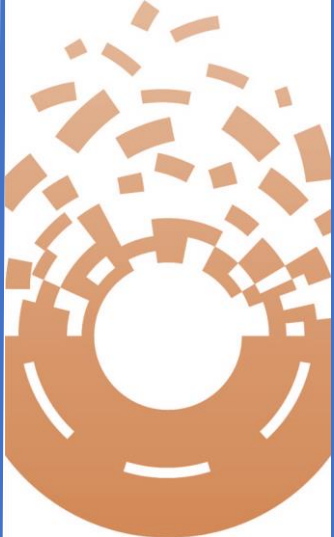
MAY

Funding approved awarded



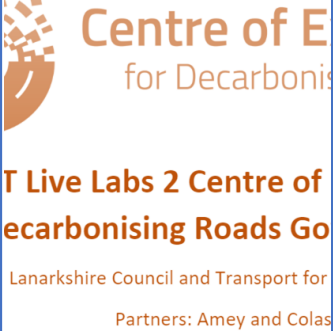
AUGUST

Logo, name and brand



SEPTEMBER

Website produced and launched



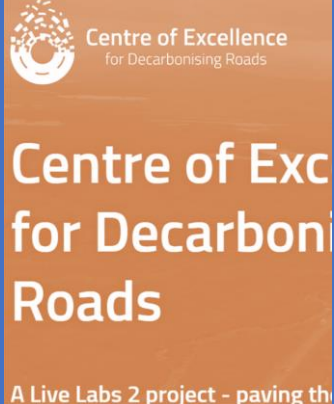
OCTOBER

Conferences and Market scanning began



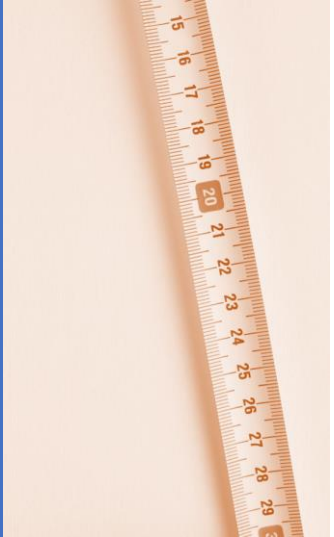
NOVEMBER

Innovation hopper, Scorecards produced, and first pitching session held



DECEMBER

Carbon baselining and procurement established with partners





Milestones in 2024

Delivering Decarbonisation

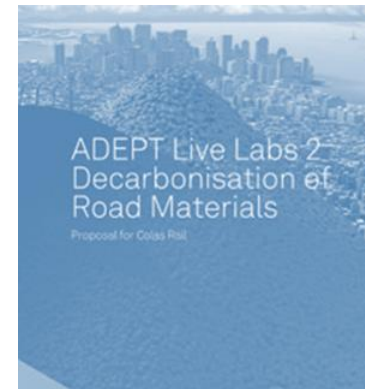


First trials in South Campus

Completion of international scanning by CPC



Completion of initial market scanning sprints for North Campus



First case studies and material evaluations completed for knowledge bank



February

March

April

May

August

October

December

First trials in North Campus

Completion of behavioural change workstream 1



Live Labs 2 Expo

Kick-off of knowledge bank development

NLC Live Labs 2 Innovation Log ★


ID	Title
44	Evotherm
45	Evoflex
46	Eco-Binder
47	Woodcrete





Completion of CPC workstreams




Knowledge bank completed and launch event hosted

- Automation to add all submissions from the CEDR website
- 173 materials or machinery/methods of applying materials
- Service activity, MCHW/DMRB series and material type specified
- Overview information, PDF attachments and current status also include

Live Labs 2
Innovation Log 

  All Items  Innovation Board 

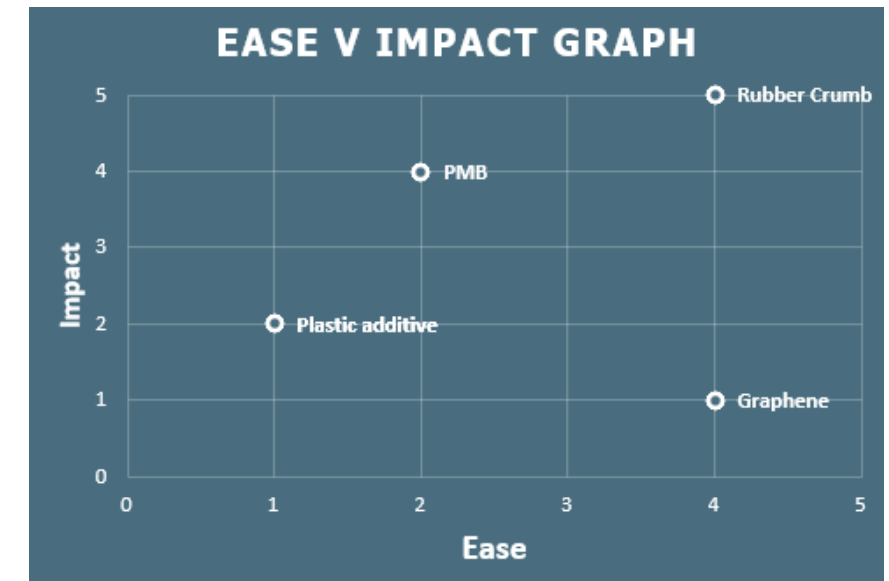
ID	Title	Series	Service A...	Material Type	Status	Supplier(s)	Campus
162	Viaform 	Maintenance	Winter Maintenance	De-icer alternative	Not Progressed	Peacock	North Lanar
163	Sensicrete	1000 - Concrete Roads	Concrete	Concrete additive	Not reviewed	JP Concrete	Both Campu
164	Mimicrete	1000 - Concrete Roads	Concrete	Concrete additive	Not reviewed	Mimicrete	Both Campu
165	Basilisk Concrete	1000 - Concrete Roads	Concrete	Concrete additive	Not reviewed	Basilisk	Both Campu
166	Delta-Envriolite	1200 - Traffic Signs & Road Markings	Signage	Signage LED Luminaire	Not Progressed	Mallatite Ltd	Both Campu
167	DIBOND	1200 - Traffic Signs & Road Markings	Signage	Sign Face	In review	3A Composites	Both Campu
168	UV Digital Printi...	1200 - Traffic Signs & Road Markings	Signage	Sign Face Printing Method	Parked for Future	Xing Wei Reflective Shee...	Both Campu

Innovation Scorecard

- Pre-evaluation scorecard being developed
- A Scorecard for each innovation
- Scores are then collected
- Materials placed on an ease/impact matrix
- Simply an empirical measure – not definitive

Area	Weighting
Strategic Alignment - Impact	
How well does it fit the Centre's objectives?	50
Does the innovation support a reduction in whole life carbon?	100
Rolling Resistance - scope 3 etc road users	20
Is it future-proofed for climate change resiliency?	25
Technical - Ease	
How is the technical performance of the innovation?	100
Do we have the capabilities to deliver this innovation or solution?	50
Standards and Specifications - Ease	
Does it match the standards and specifications?	50
Scalability and Adoptability - Ease	
How scalable is this innovation?	50
How applicable is this innovation to different road classes?	25
How easy is the innovation to transfer and adopt?	50
Value for Money - Impact	
Could this represent good Value for Money compared to the existing standard?	25
Will the trial of this innovation represent good Value for Money for the programme?	25
Is the future cost model sustainable?	25

Innovation Name	The Centre's Scorecard										
	Ease	Impact	Strategic Alignment	Scalability & Adoptability	Standards & Specs	Value for Money	Social Impact	Technical	Uniqueness	Risk & Safety	Total Score
Plastic additive	1	2	2	5	1	3	15	7	9	5	4
PMB	2	4	3	5	8	9	6	1	2	7	2
Graphene	4	1	3	4	9	5	7	4	6	3	2
Rubber Crumb	4	5	2	4	5	6	10	15	1	3	3



Carbon Evaluation Timeline

Programme
planning

Identifying Carbon
Hotspots

Activity based Carbon
evaluation and
comparative study

Knowledge bank

Case studies

MAR 2024-MAR 2026

Start: SEP 2023

Start: JAN 2024

Start: MAR 2024

1 month

1 month

3 Years

6 Months

3 Years

5 Years

Carbon baselining

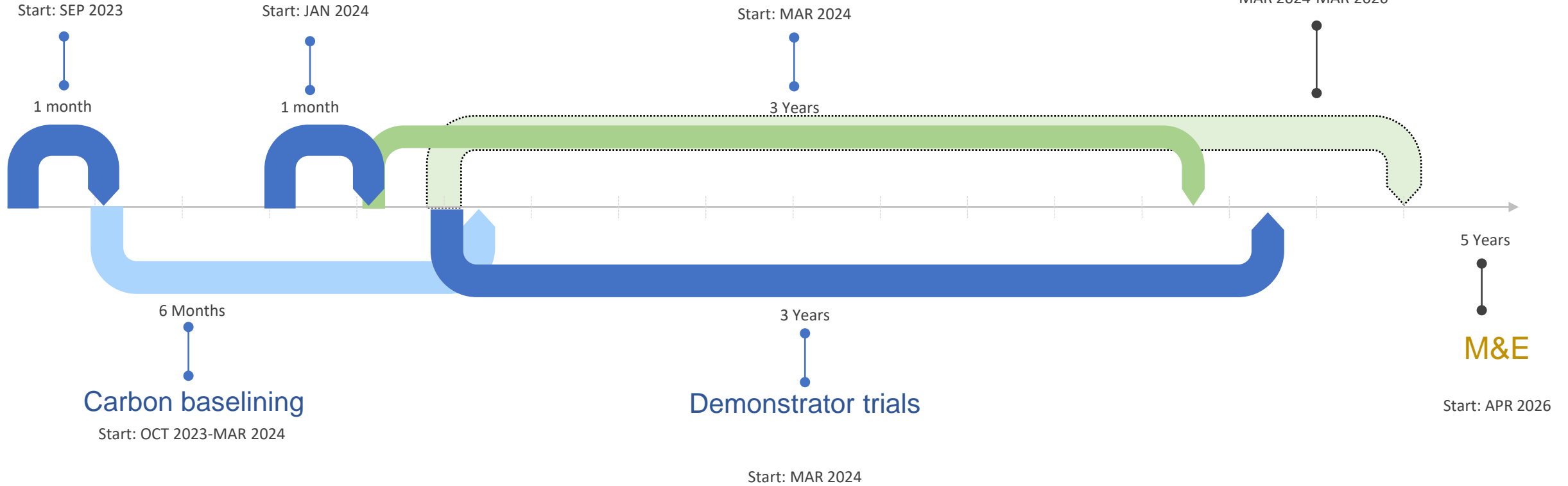
Demonstrator trials

M&E

Start: OCT 2023-MAR 2024

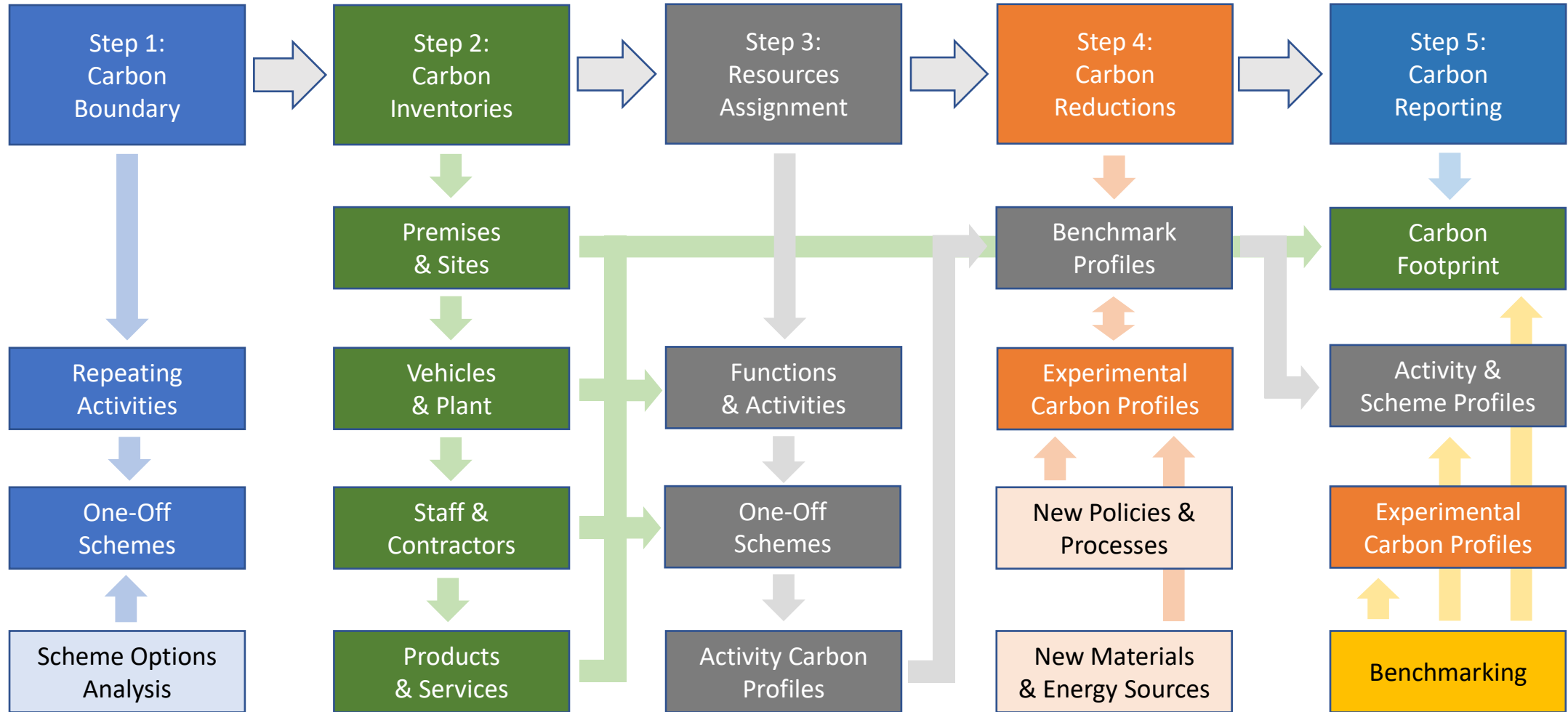
Start: MAR 2024

Start: APR 2026



Future Highways Research Group (FHRG)

Carbon Calculation & Accounting Standard | Carbon Analyser

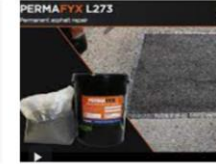


South Campus Pothole Programme

Permanent Repairs

Temporary Repairs

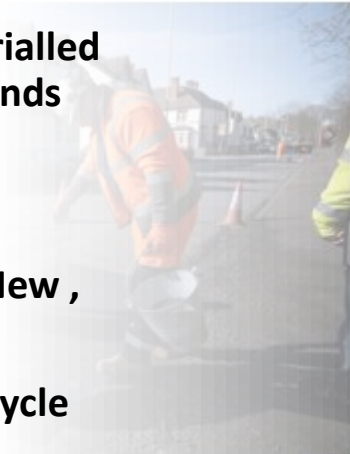
Emergency Repairs



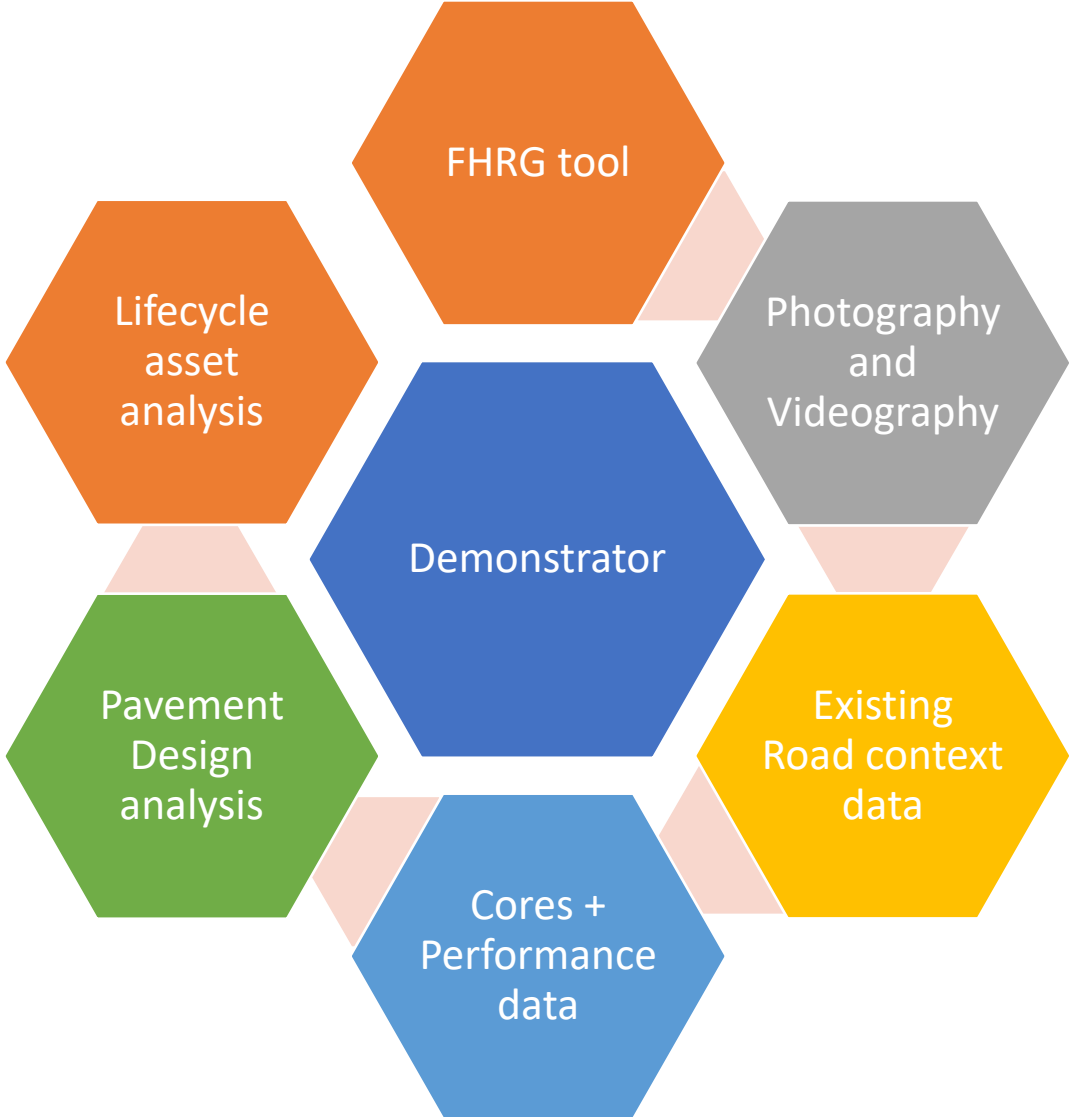
Materials		Methods	Technical and Carbon Metrics
<p>Traditional method</p> <p>Viafix</p> <p>Degafloor</p> <p>FM Conway Ltd</p> <p>Meon</p> <p>Instarmac</p> <p>Archway</p> <p>JCB</p> <p>Multevo Ltd</p> <p>Thermal Road Repair</p> <p>Velocity</p> <p>Low Carbon Materials</p> <p>Rejuvetech</p> <p>Colas</p> <p>Roadtech</p> <p>Roadmender</p> <p>Tarmac</p>	<p>Saw Cut and inlay</p> <p>Viafix</p> <p>Degafill</p> <p>GreenPatch</p> <p>Permafyx</p> <p>Toughpatch</p> <p>Roadmaster</p> <p>Pothole Pro</p> <p>Hydrohog</p> <p>Thermal Road Repairs</p> <p>Velocity Patching</p> <p>Net zero asphalt</p> <p>Nitrogen asphalt</p> <p>Colpatch</p> <p>Roadpatch</p> <p>Elastomac</p> <p>Ultipatch</p>	<p>Six Local Authorities</p> <p>Four Road scenarios</p> <ul style="list-style-type: none"> - Older thin Residential roads - Newer deep Residential roads - C Class Roads (rural/link roads) - A/B High speed (speed/HGV) <p>Controlling the Variables</p> <ul style="list-style-type: none"> ➤ Pothole characteristics ➤ Road types, speeds, traffic ➤ Weather ➤ Defect clustering ➤ Slab production + labs 	<ul style="list-style-type: none"> • Trial location (road type, structure, condition) • Conditions at the time the material was laid (weather) • Road surface temperature • Quantity of material utilised • Cost (per kg) • Pothole characteristics (size/volume) • Operational experience – ease of installation (subjective view of operatives) • Health and safety • Operational data (time to complete) • Fuel usage • Embodied carbon data (EPD / supplier info)

March Trials Project Pothole Week 1

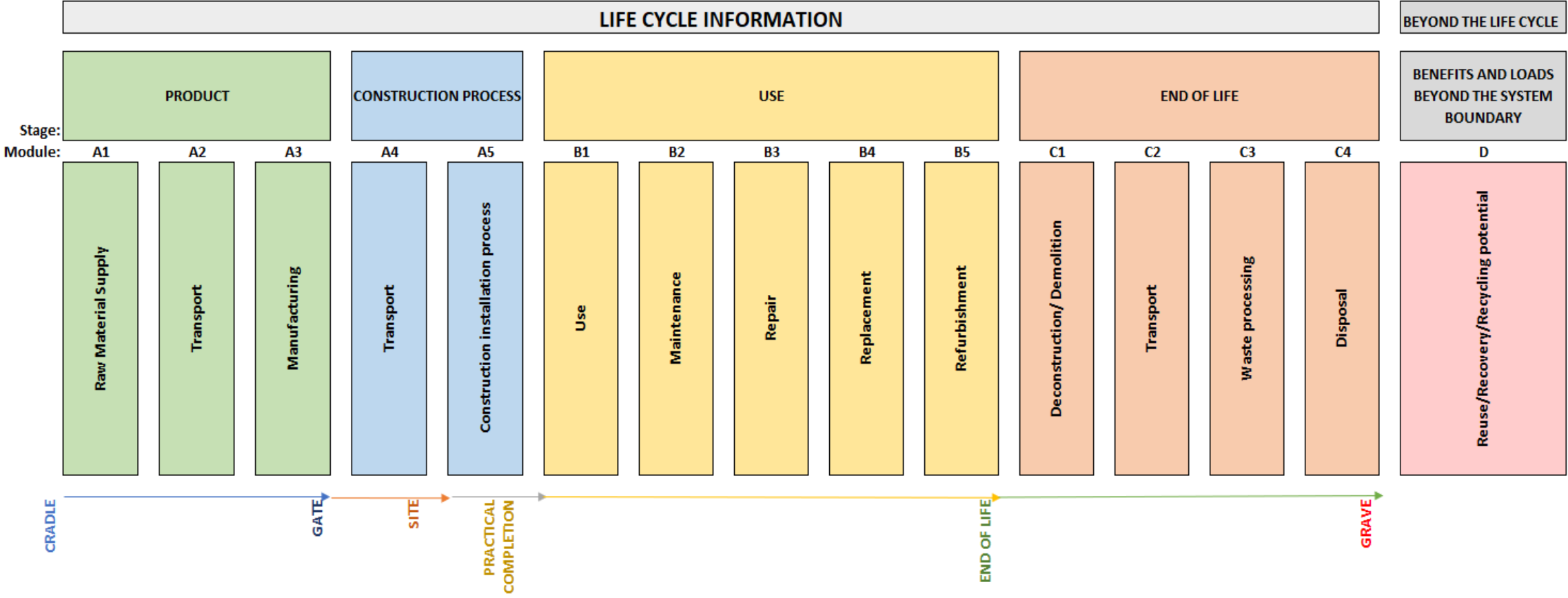
- 9 different innovative products trialled across five regions of West Midlands combined authority
- 12 repairs per solution
- 4 road types(Residential-Old & New , C class roads, A / B class roads)
- Data collection complete for lifecycle stage A5
- Data collection from suppliers in progress for lifecycle stages A1-A4
- Creation of experiment profiles in Carbon Analyser to start soon



Demonstrator Evaluation



Data Collection-Lifecycle carbon for maintenance activities



Next Steps...



Next Service Activity:

Surface treatments:

- Surface Dressing,
- Microasphalt,
- Rejuvenators
- Preservers



**Resurfacing
And
Project Pothole
The sequel!**



**Publishing findings
and developing the
knowledge bank**



Any Questions?