



www.adeptnet.org.uk/livelabs2

www.linkedin.com/company/net-zero-roads-wessex-live-lab



A collaboration between local authorities and partners from across the industry and academia...



Supported by the Wessex Live Lab 'Learning Circle' member



Corridor & Place Based Decarbonisation Theme

A382 MAJOR ROAD NETWORK SCHEME: Devon Live Lab

A carbon negative highways construction project across the whole life-cycle of the scheme.



HIGHWAYS ECOSYSTEM: Liverpool Live Lab

Scalable low carbon optioneering and full lifecycle decision-making.



NET-ZERO ROADS: Wessex Live Lab

Pioneering net zero emission roads in Somerset, Cornwall and Hampshire in nine 'Net Zero Corridors', which will act as a proxy for maintenance on all highways.





Wessex Live Lab – Project Context

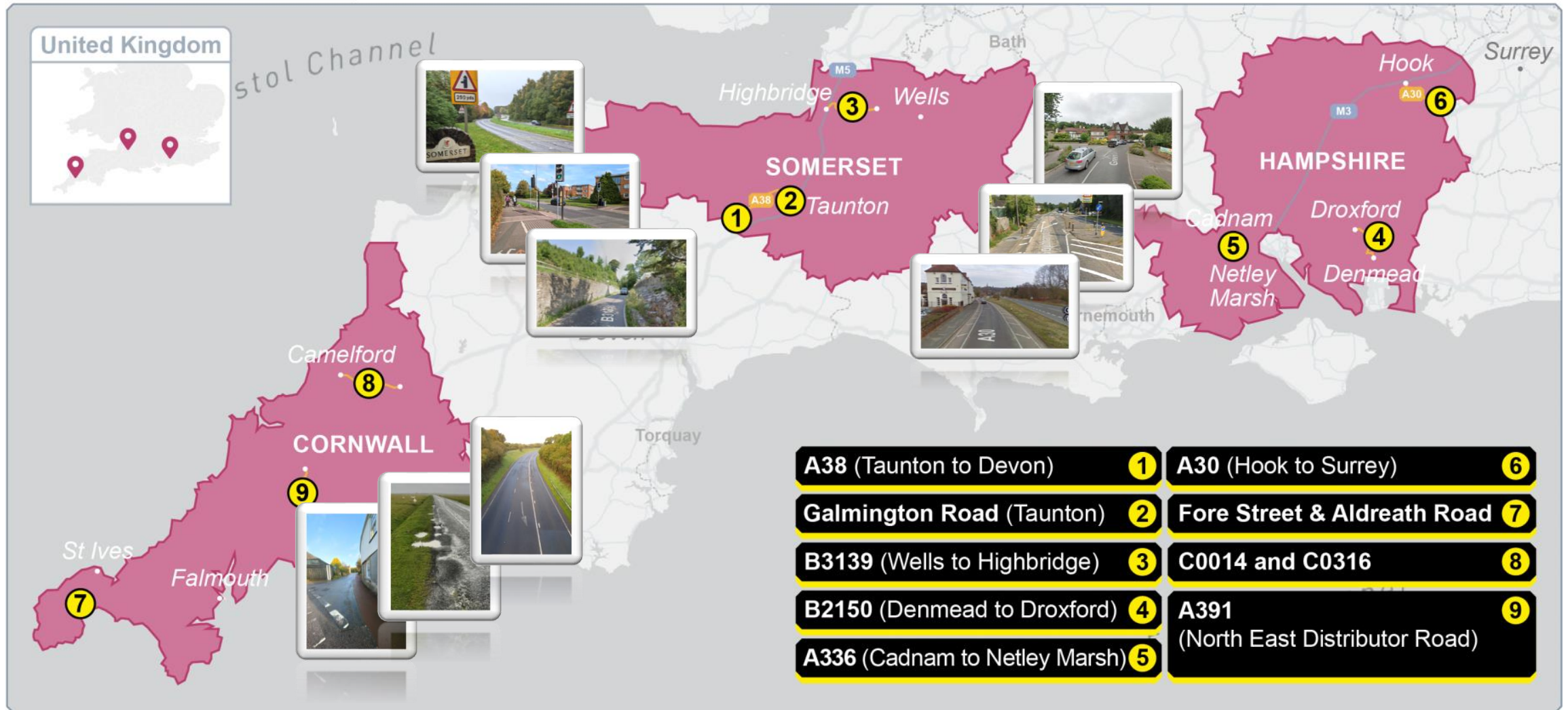
Pioneering innovative solutions for decarbonising highways maintenance in Somerset, Cornwall and Hampshire, supporting the UK's route to net zero roads.

- ◎ **Nine ‘Net Zero Corridors’** which will act as a proxy for maintenance on all highways.
- ◎ **Diverse network across Wessex authorities** (including geographies, contracting models and material access) will ensure findings are representative of highway maintenance across road network
- ◎ **Decarbonising maintenance across the whole service and asset lifecycle.**
- ◎ **Corridors will be a test bed** for innovation, circular solutions and new ways of thinking.
- ◎ Our approach will be underpinned by the **Doughnut Economics Model**

WESSEX LIVE LAB – testbeds for innovating, pioneering, transforming

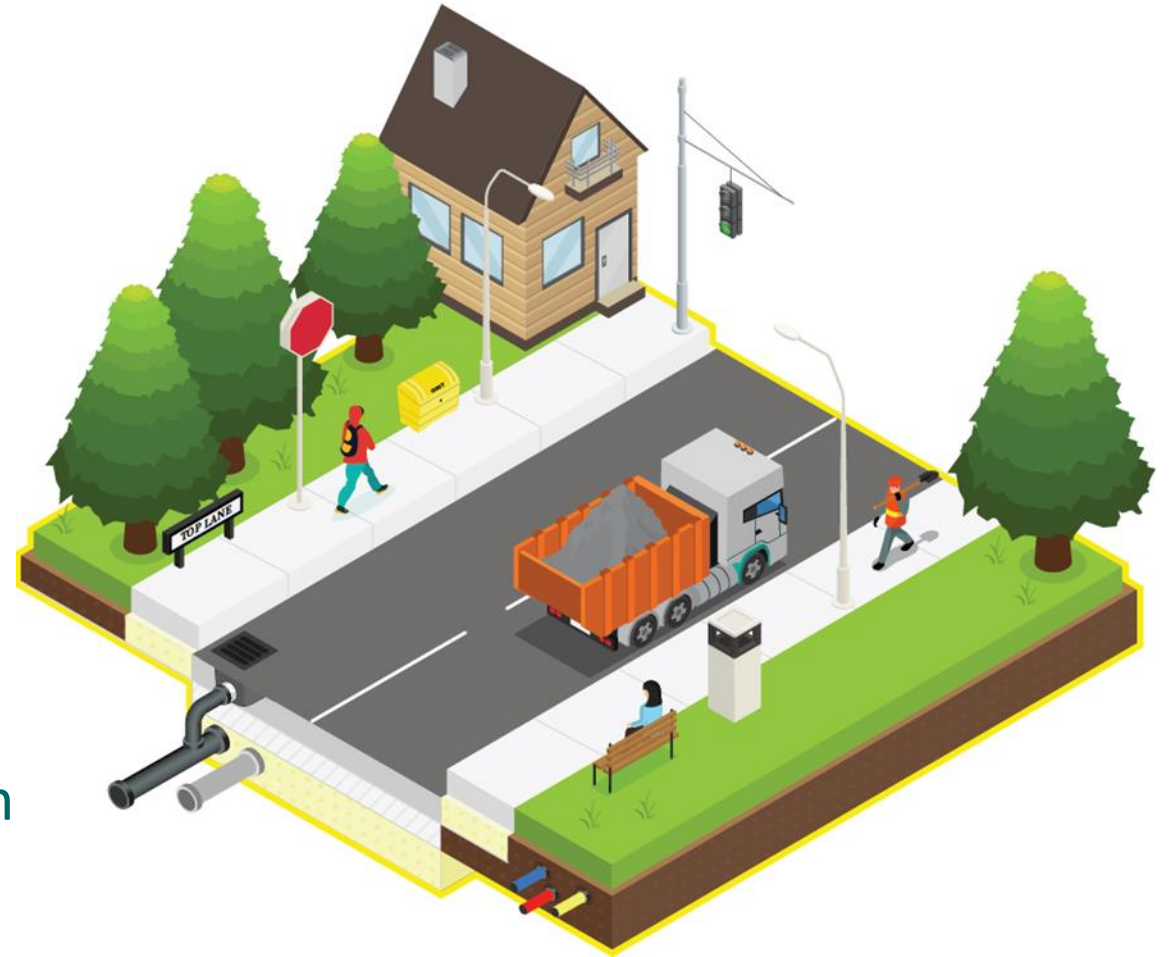
MAP OF THE SOUTH WEST

COL118_005



The whole service & changing business as usual

- 🎯 The materials we use
- 🎯 The products we use
- 🎯 The plant we use
- 🎯 How we deliver services
- 🎯 When and where we deliver them



Links with other Live Labs – sharing & learning

Shared learning, resources & tools for carbon accounting (Colas & FHRG)



Liverpool City Council



Central source of innovative products and potential link through shadow testbeds



EAST RIDING OF YORKSHIRE COUNCIL

Shared learning on innovations through innovation match-making on lighting solutions

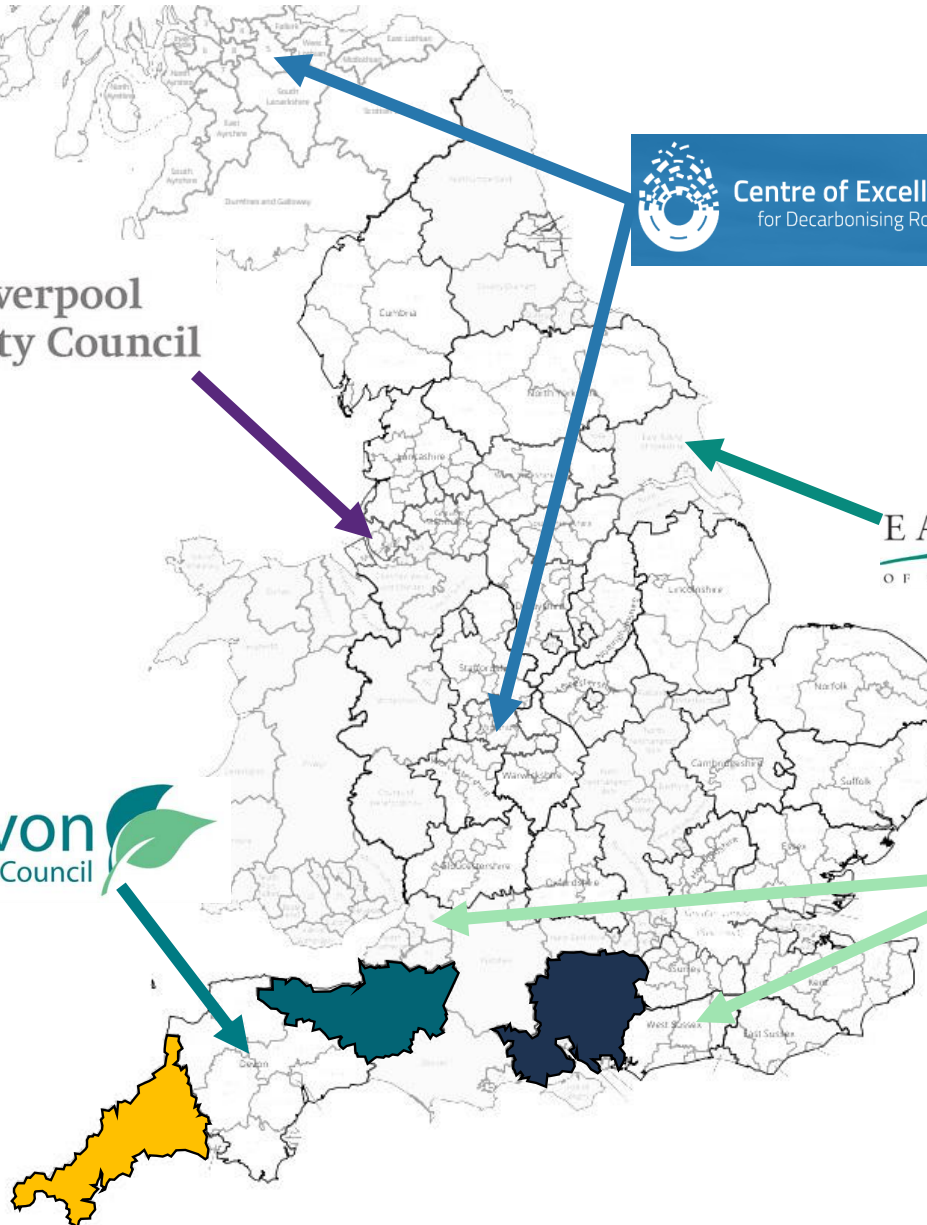
Shared learning & innovations through the thematic group & innovation match-making

Devon County Council



Greenprint.

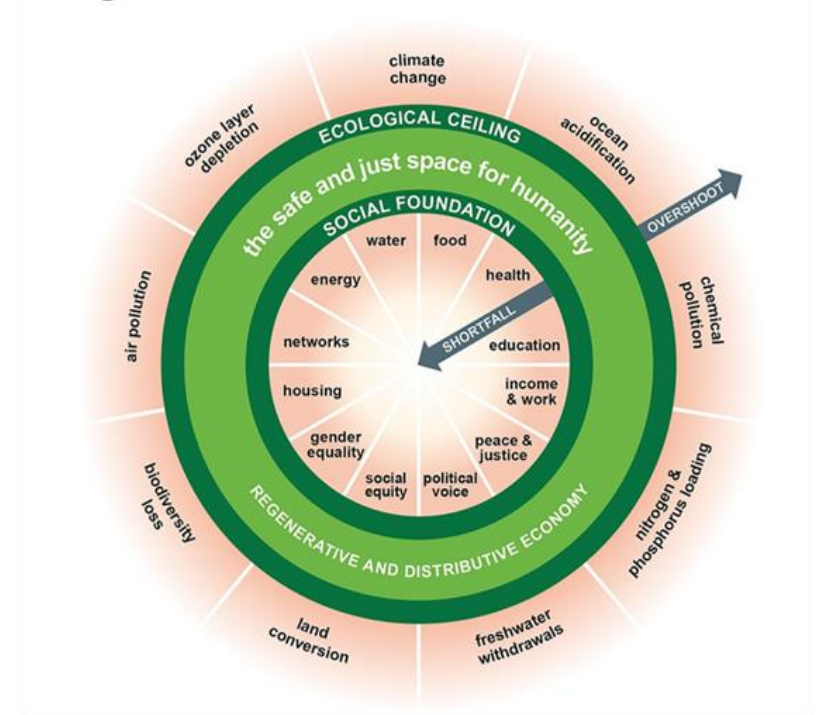
Shared learning on innovations through innovation match-making eg biochar



WESSEX LIVE LAB - using a new lens to look at everything we do

- Data-led decision-making using Carbon Analyser
- Research & development of carbon budgeting & future scenario planning
- Underpinned by Doughnut Economics (impact on wider environmental and social sustainability)

Doughnut Economics





How carbon data & analysis is helping shape the way forward

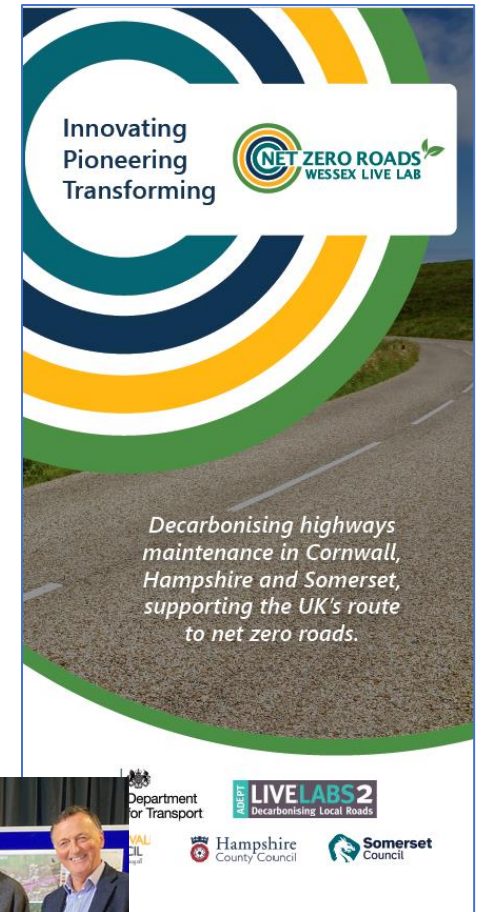
- ① **Building understanding and awareness** of the current carbon-picture and the challenges ahead
- ② **Enabling us to take a ‘whole corridor’ approach** by identifying a mix of physical works and simulated scenarios to demonstrate maximum carbon savings
- ③ **Prioritisation and selection** of innovations through **data-led decision-making** ensuring VfM & optimal delivery of low-carbon solutions
- ④ **Developing toolkits & scaling up**
- ⑤ **Identifying overarching areas for immediate action** - such as the Carbon Hotspot Studies’ the LEAN travel review

Developing toolkits & scaling up

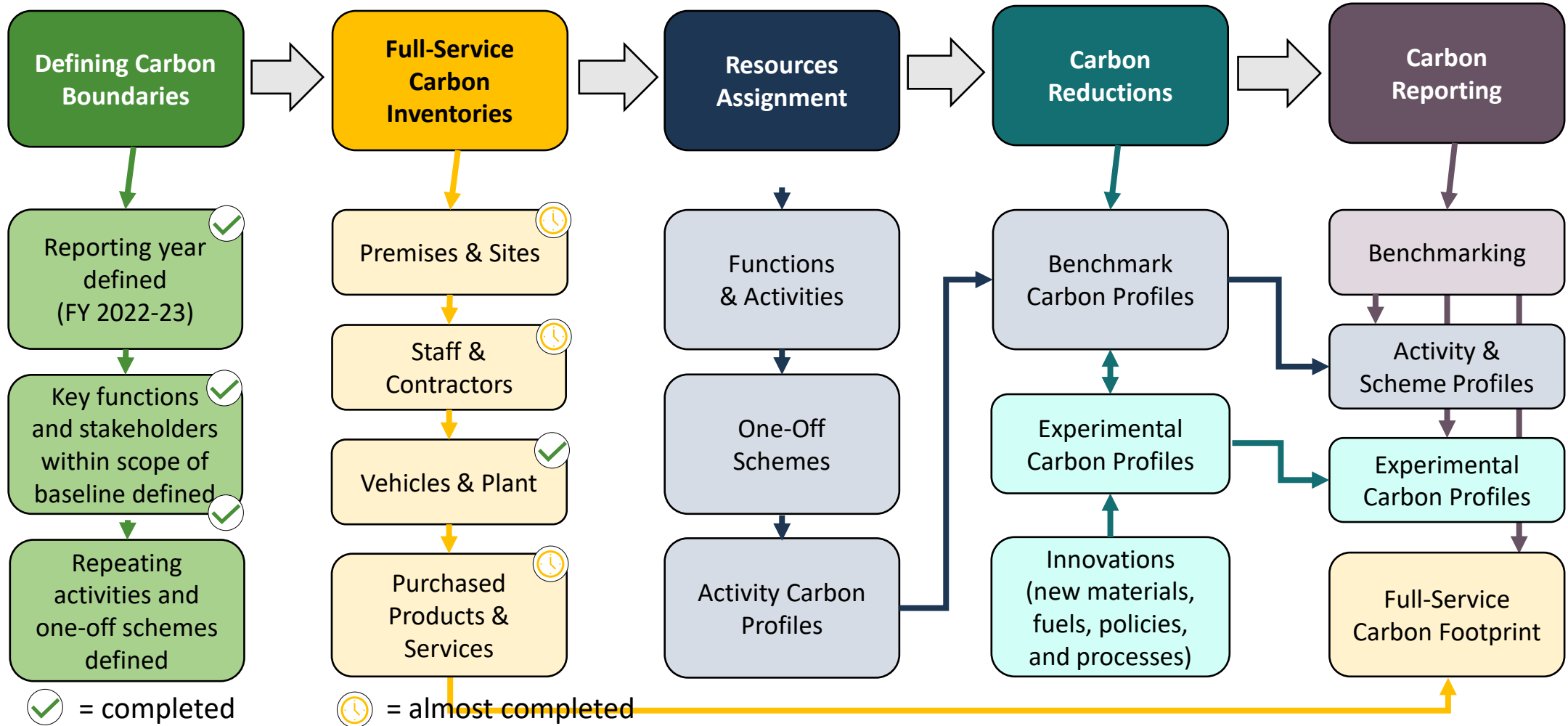


Year 1 - summary

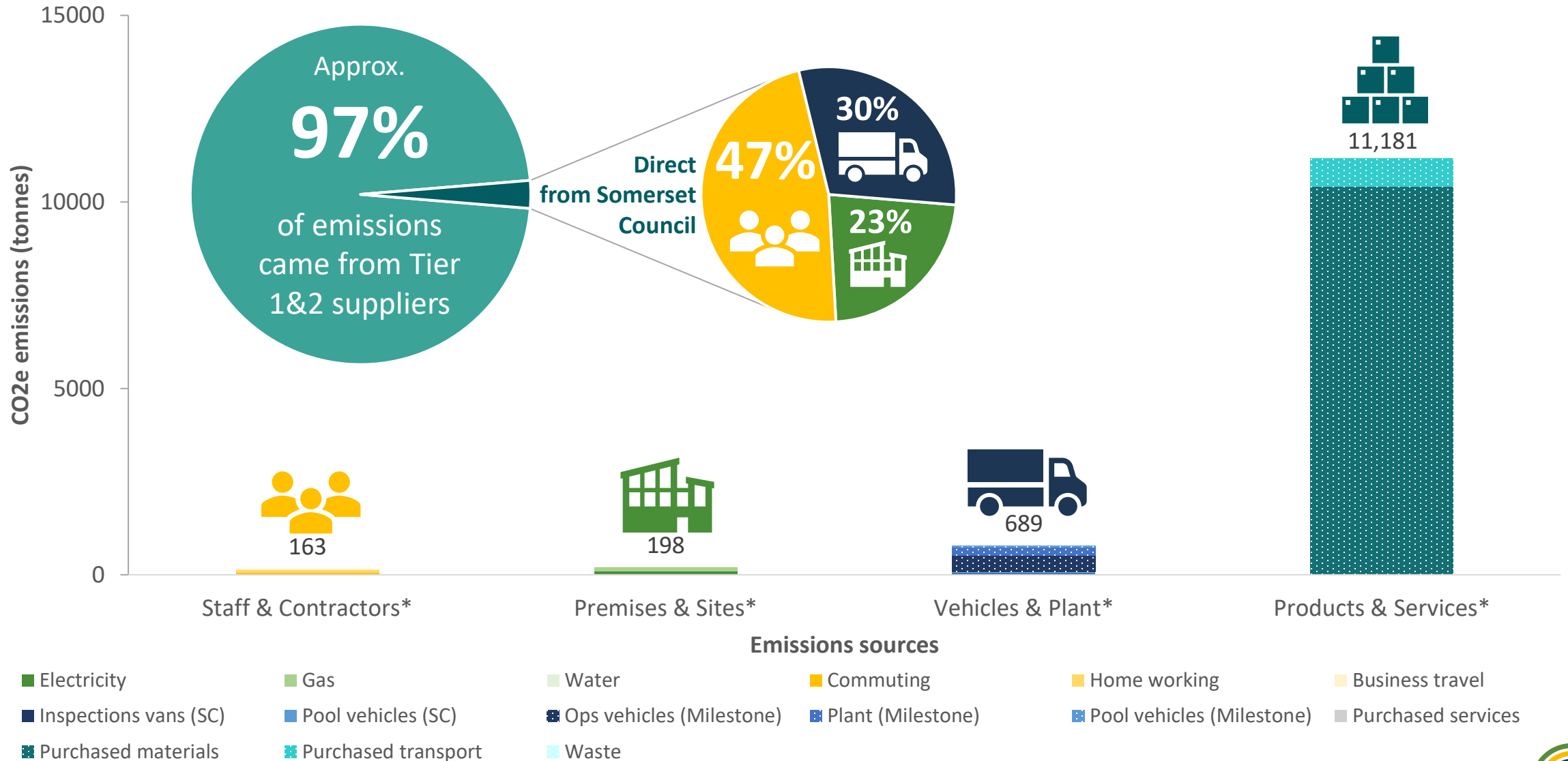
- Focusing on mobilising and building a solid foundation of understanding, collaboration, and research.
- Establishing the governance, procurement and carbon baselining.
- Development of the Doughnut Economics Model and data-led identification and selection of innovation.
- Work developing the initial Corridors will provide a launchpad for Year 2.
- Launch of inaugural corridor scheme at Madron in Cornwall.
- Scoping for lean travel review seeking to reduce emissions from operational travel - initial focus on the inspection regime.



Carbon Calculation & Accounting Process



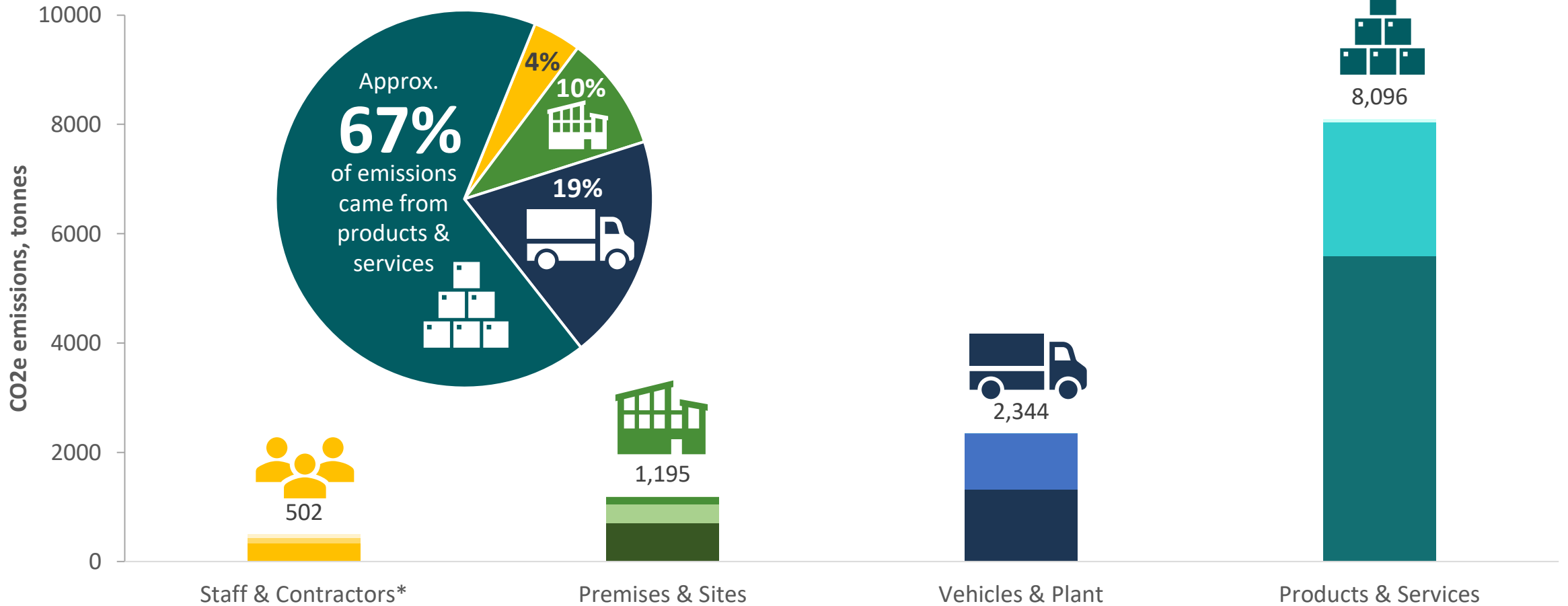
Headline Data (Somerset)



*Note: All figures are preliminary values subject to final data collation & carbon calculation



Headline Data (Cornwall)



- Emissions Sources**
- Oil
 - Commuting
 - Cormac plant
 - Waste
 - Gas
 - Home working
 - Pool vehicles
 - Electricity (extra over REGO threshold)
 - Business travel
 - Purchased Materials
 - Water
 - Vehicle fleet
 - Purchased Services

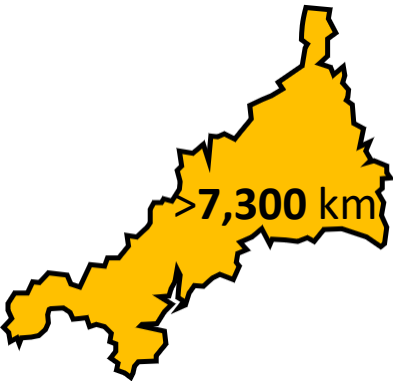
*Note: Figures are preliminary estimates (assuming 390 staff), subject to final verification.



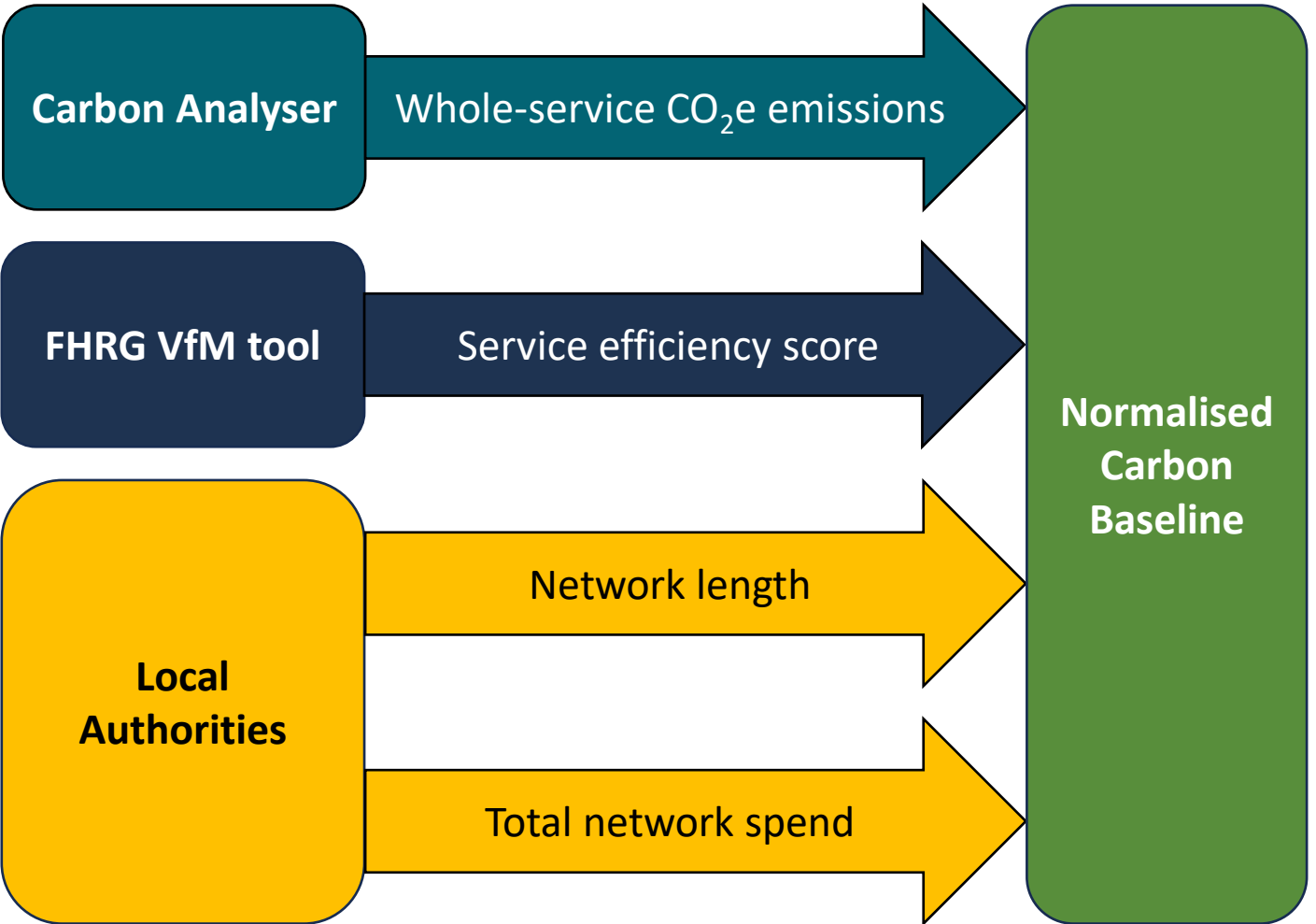
Normalising emissions by Local Authority



12,136
tCO₂e



12,230
tCO₂e



Key Reflections on carbon data collection & analysis

Discoveries

Importance of **engaging with supply chain** - otherwise, major carbon hotspots remain hidden.

Early commitment to Net Zero & carbon reporting proved advantageous for Cornwall.

Exciting opportunities for **creative problem-solving & strategic planning**.

Diverse collaborative partnerships provide the expertise & resources needed to address project challenges.

Challenges

Agreeing upon suitable & consistent methodologies for **carbon baselining & innovation management**.

Difficulty of obtaining data - **extensive staff engagement** required.

Challenges with **staff commute survey** – content, GDPR, and low response rates.

Immediate Next Steps

- ① Completing service carbon baseline, and developing carbon profiles for corridors – experimental profiles/ options.
- ① Commissioning further corridors - Somerset urban/ residential footway resurfacing scheme aiming for net-zero delivery.
- ① Doughnut economics model for the highways sector/ decision making.
- ① Capturing lessons learned – barriers to behaviour change.
- ① Completing lean travel review & work on inspections to roll out.



Join us on the journey to...

NET
ZERO
ROADS

