Future Highways Research Group

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

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PART OF TRANSPORT NETWORK

Future Highways Research Group

Q3, 2021 Waypoint Meeting

ADEPT / Proving Research Partnership

Agenda

Future Highways Research Group

- **Welcome & Introductions (Hannah Bartram)**
- **ADEPT News (Hannah Bartram, COO, ADEPT)**
- **Sector News (Dominic Browne, Editor, Highways Magazine)**
- **Current Research Programme**
  - Scope 1 & 2 Guidance (Update, Helen Bailey)
  - Scope 3 Guidance, Planned Launch (Q1, 2022)
- **Future Highways: The Wider Policy Context for De-Carbonisation**
  - Prof. Peter Jones, Professor of Transport and Sustainable Development
  - Dept of Civil, Environmental & Geomatic Engineering, University College London
- **Designing Out Carbon: A Practitioner's Approach**
  - Victoria Walsh, Highway Systems Manager, Devon County Council
- **Comfort Break**

Agenda (Continued…)

Future Highways Research Group

- **Net Zero Carbon Materials & Processes (Scope 3 Preparation)**
  - Owen Jenkins, Director of Growth and Economy, Oxfordshire County Council
  - David Ogden, Operations Director UK Contracting, Colas Limited
- **StreetCare Operating Model**
  - Jon Munslow, Asset and Infrastructure Group Manager, South Gloucestershire Council
- **A New Approach to Prioritising Local Authority Skid Resistance**
  - Dr Helen Viner, Director, Enodamus Limited
  - Kully Boden, Interim Head of Service, Derby City Council
- **Strategic Innovations & Options Portfolio Development**
  - Simon Wilson, Research Programme Director, Proving
- **Benchmarking Club 2020 Update**
  - Andy Perrin, Director, Proving
- **A.O.B. & Close**

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ADEPT, Sector News & Individual Authority Updates

Hannah Bartram, Dominic Browne & FHRG Members

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Research Programme Update

Scope 1 & 2 Guidance Update & Scope 3 Preparation

What we said

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- **Identify what has currently been adopted and progress among members.**
- **Define clear boundaries for the activities to be included.**
- **Define the period in which data will be collected (reporting cycle).**
- **Understanding key environmental impacts and the associated emissions.**
- **Define uniform measurement techniques for the identified impacts.**
- **Agree carbon footprint conversion assumptions.**
- **Create benchmarkable standards.**
- **Create an assessment framework.**
- **Any thoughts, feedback on use of carbon standards/tools?**

Where we are

Future Highways Research Group

- ✓**Working and steering groups formed.**
- ✓**FHRG peer group formed.**
- ✓**Literature review undertaken, covering:**
  - ✓Key legislation.
  - ✓Mandatory reporting.
  - ✓Mapping of current standards and guidance.
  - ✓Carbon accounting tools and conversion factors.
  - ✓Business reporting, procurement implications and opportunities.
- ✓**Questionnaire developed - coming to an inbox near you Friday 16th July.**

What to expect with the questionnaire

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1. **The devil is in the detail.**
2. **Please take time to complete all questions and provide as much detail as possible**
3. **Those completing this questionnaire will typically come from highways service provision, sustainability/environmental function and or carbon reduction teams.**
4. **The questionnaire is written to follow PAS 2080 and will focus on:**
   i. General information - standards, management systems, policy, procedures and targets
   ii. Baseline information – year and boundaries applied (i.e. scope of activities)
   iii. Scope 1 – detail of current activities included, monitoring and measurement techniques
   iv. Scope 2 - detail of current activities included, monitoring and measurement techniques
   v. Tools – how do you calculate your footprint, tools and conversion factors used
5. **Two weeks to complete, return 30th July.**

General questions

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No	Question	Response	
1	Local Authority name		
2	Local Authority representative		
3	Position held within local authority		
4	Have you declared a climate emergency? If yes, what year?		
5	Have you a net zero target? If yes, what year?		
6	Have you a calculated carbon footprint? Yes/No		
7	What standards do you work to (you do not need to be certified)? Please tick all that apply:	ISO 14001	
		ISO 50001	
		PAS2050	
		PAS 2080	
		Other (please state)	

Scope 1 questions

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No	Question	Response
27	**If you monitor Fuel combustion** (boilers for heating buildings, gas furnaces and gas-fired combined heat and power (CHP) plants. The most common fuels are natural gas, liquified petroleum gas (LPG), gas oil (aka red diesel) and burning oil (aka kerosene)). Please state what is included and provide details of monitoring and measurement.	
28	**If you monitor Process emissions** - (emissions release into the atmosphere during industrial processes, for example the production of carbon dioxide (CO_2) as part of cement manufacturing). Please state what is included in your carbon footprint and provide details of monitoring and measurement.	
29	**If you monitor Fugitive emissions** - (Fugitive emissions are leaks of greenhouse gases, for example from refrigeration and air-conditioning units. Refrigerant gases are generally extremely potent greenhouse gases, some of which are thousands of times more damaging than carbon dioxide (CO_2)). Please state what is included in your carbon footprint and provide details of monitoring and measurement.	
30	**If you monitor Company vehicles** - (All vehicles owned or leased by an organisation that burn fuels producing greenhouse gases fall into Scope 1. Typically, these will be cars, vans, trucks, and motorcycles powered by petrol or diesel engines. However, transport is changing. Alternative fuels, such as liquid petroleum gas (LPG) and liquefied natural gas (LNG) are being adopted, as are the biofuels, biodiesel, and	

Scope 2 questions

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No	Question	Response
32	Do you record any scope 2 activities? (Yes/No)	
33	Please record all your activities from scope 2 included in your carbon footprint.	
Description of activity		**Monitoring Yes/No/Partial**

No	Question	Response
34	Please record all activities excluded from scope 2 from your carbon footprint?	
Description of activity		

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Scope 3: Guidance Development

Next Project Stage

Research Programme Structure & Stages (v0-7b)

Proposed, Based On Standard Approach

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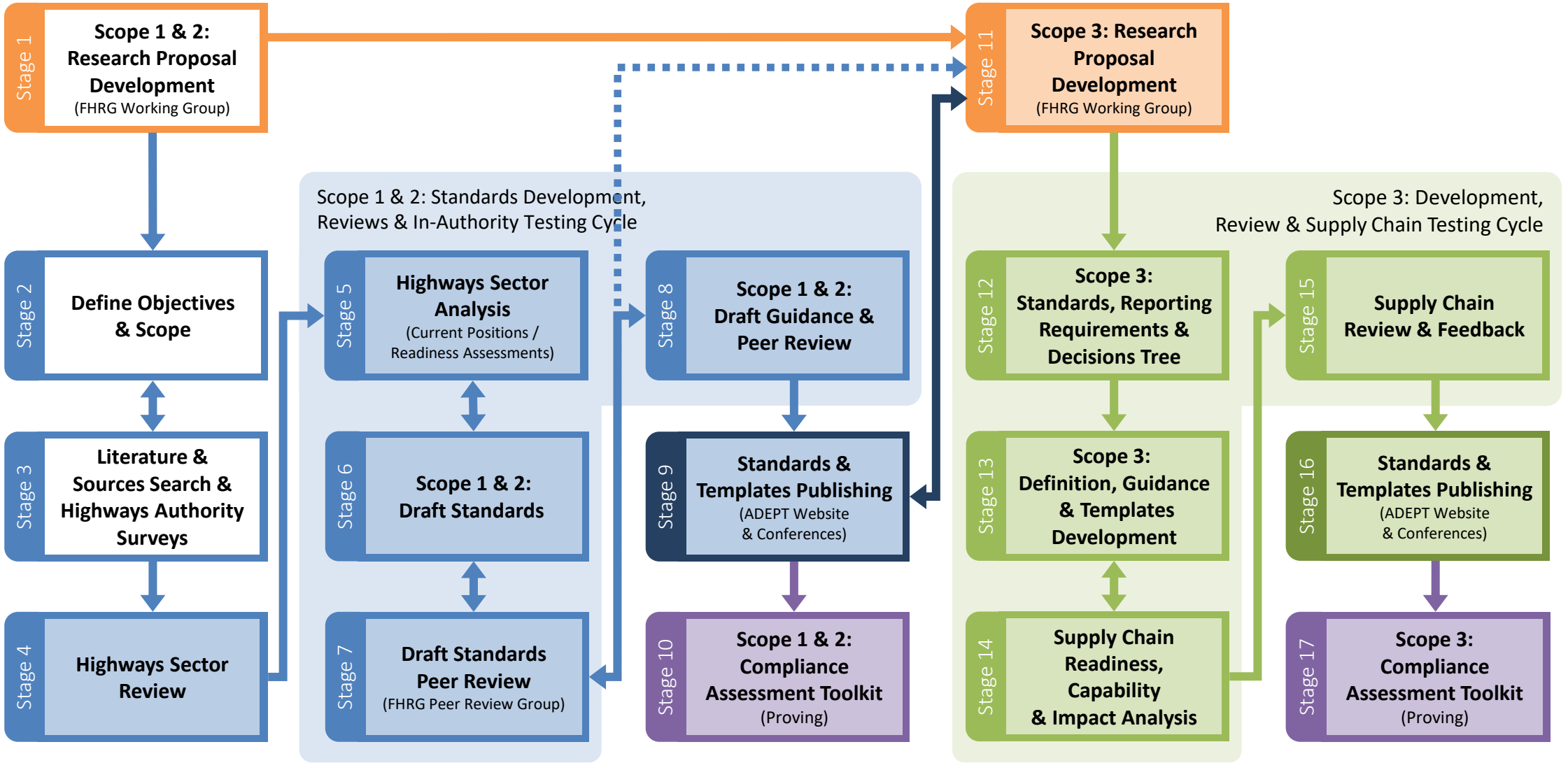

Scope 3: Highways Sector Analysis & Prioritisation

It's Complicated

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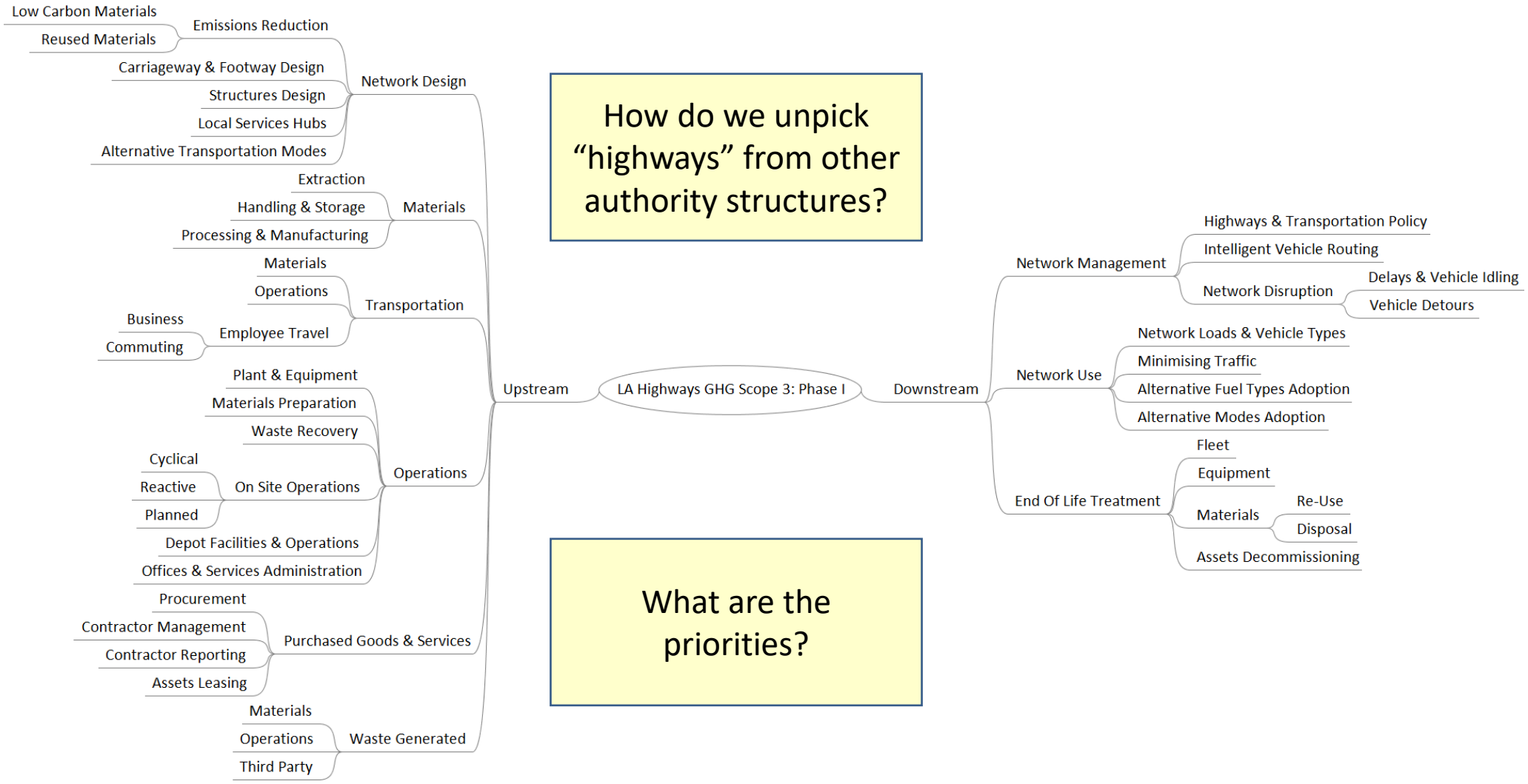
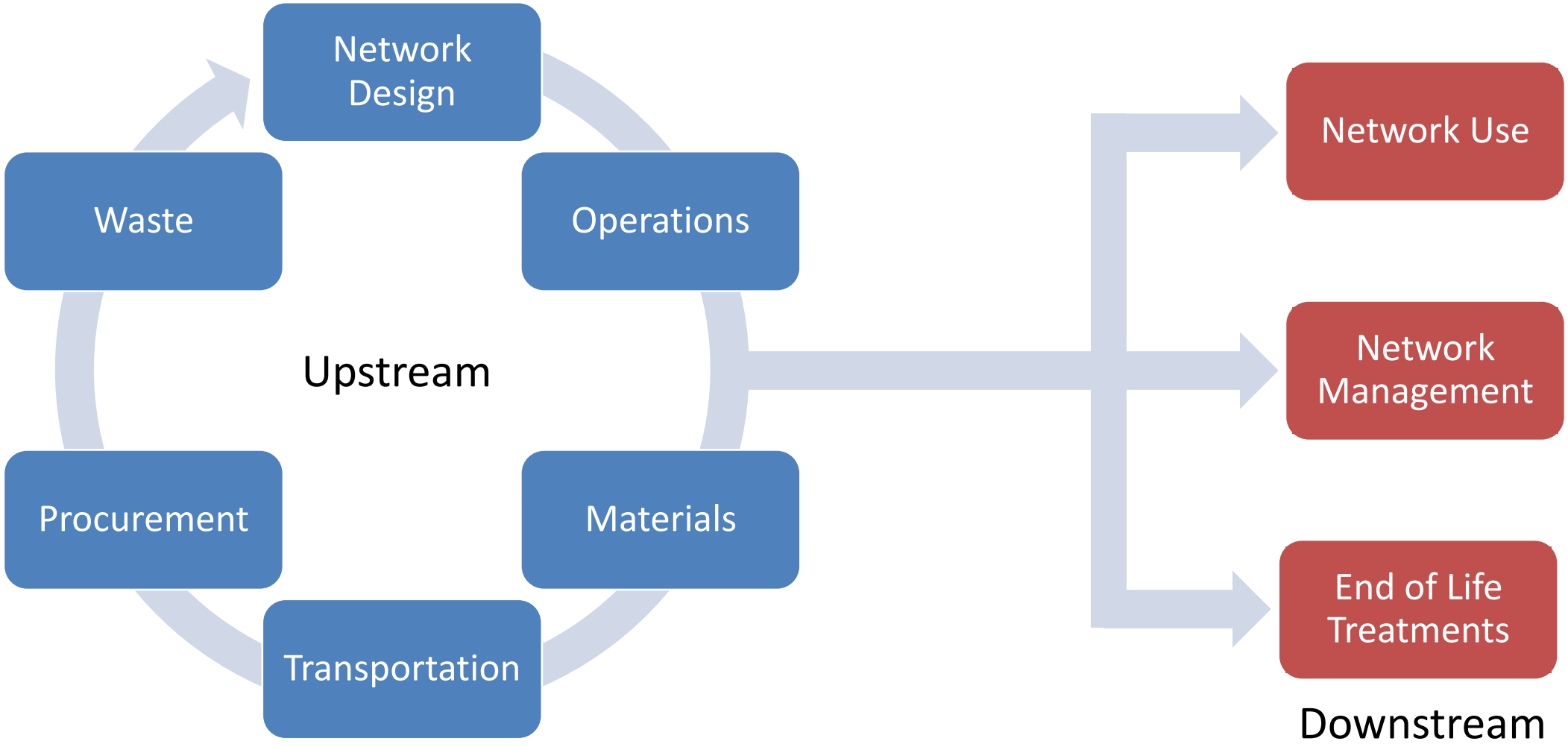


Scope 3: Phase 1: Upstream Focus



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Future Highways: The Wider Policy Context for Decarbonisation

Prof. Peter Jones, Centre for Transport Studies, University College London

Collaboration & Knowledge Sharing

Future Highways Research Group

- **Prof. Peter Jones, Centre for Transport Studies, University College London**
- **Background**
  - **Peter is a member of the Independent Transport Commission, the DfT's Science Advisory Council and co-chair of its Joint Analysis Development Panel. He is a member of the City of London Transport Strategy Board, the South-East Wales Transport Commission, the Dubai Council for Future Transportation, the Hong Kong ERP Advisory Panel and the CIHT Urban Design Panel.**
- **Aligns with our research programme:**
  - **Scope 1, 2 & 3: Highways Sector Guidance Development**
  - **Zero Carbon Research Programme**
  - **Future Highways Infrastructure**

Context

- Decarbonisaton is becoming an increasing priority across the economy, with particular challenges for transport
- Technological advances are helping in many areas of supply and demand, but the general view is that this will not be enough
- It is important to avoid a repeat of the diesel debacle: we must be sure that carbon reduction does not run counter to achieving other key policy goals (air quality, vision zero, levelling up) and that we exploit synergies, wherever possible.
- This presentation focuses on urban policy development and deliver, drawing on recent studies undertaken in CTS at UCL.

Topics

- Re-purposing existing tools
- Policy framing: changing societal priorities and challenges
- Urban roadspace allocation
- Broadening appraisal

RE-PURPOSING EXISTING TOOLS

Adapting existing tools: e.g. traffic signals

Initially used to safely manage conflicting movements, traffic signals can contribute to many policy objectives, if programmed to do so:

- Minimising fuel consumption
- Increasing traffic capacity at junctions (SCOOT)
- Metering traffic flow (Zurich)
- Prioritising certain modes
- Relocating queues (e.g. away from poor air quality areas)
- Reducing day-to-day variability in travel times

POLICY FRAMING

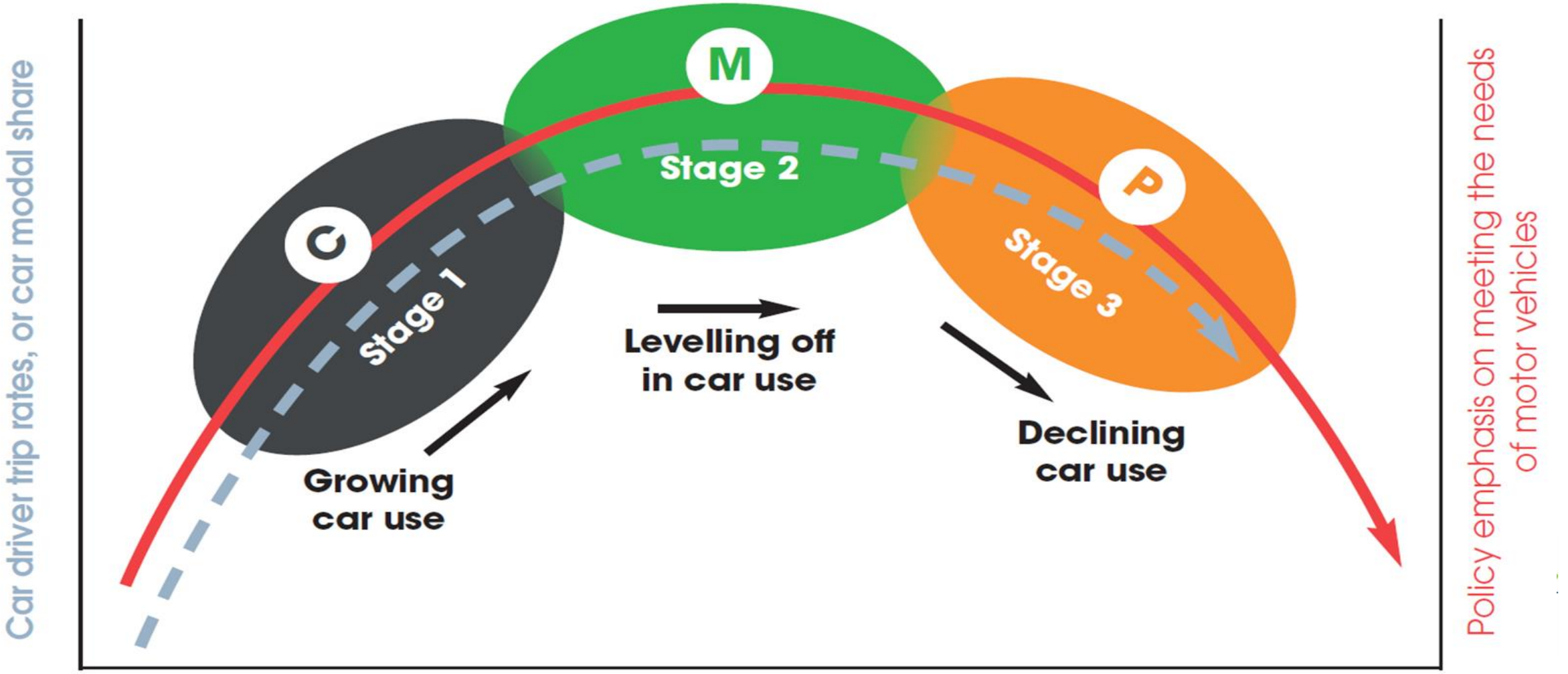
Policy Perspectives Shape Cities

- Road building
- Car parking
- Lower density
- Decentralisation

- Public transport
- Cycle networks
- Roadspace reallocation

- Public realm
- Street activities
- Traffic restraint
- ToD/mixed use developments

A U-shaped Trajectory of Car Use Intensity



Contrast in policy measures: C –> P

The pictures show how this area of London has been transformed from a large traffic roundabout into a vibrant public space at the heart of the community, due to a shift in policy perspectives and corresponding priorities

London, Aldgate Square:

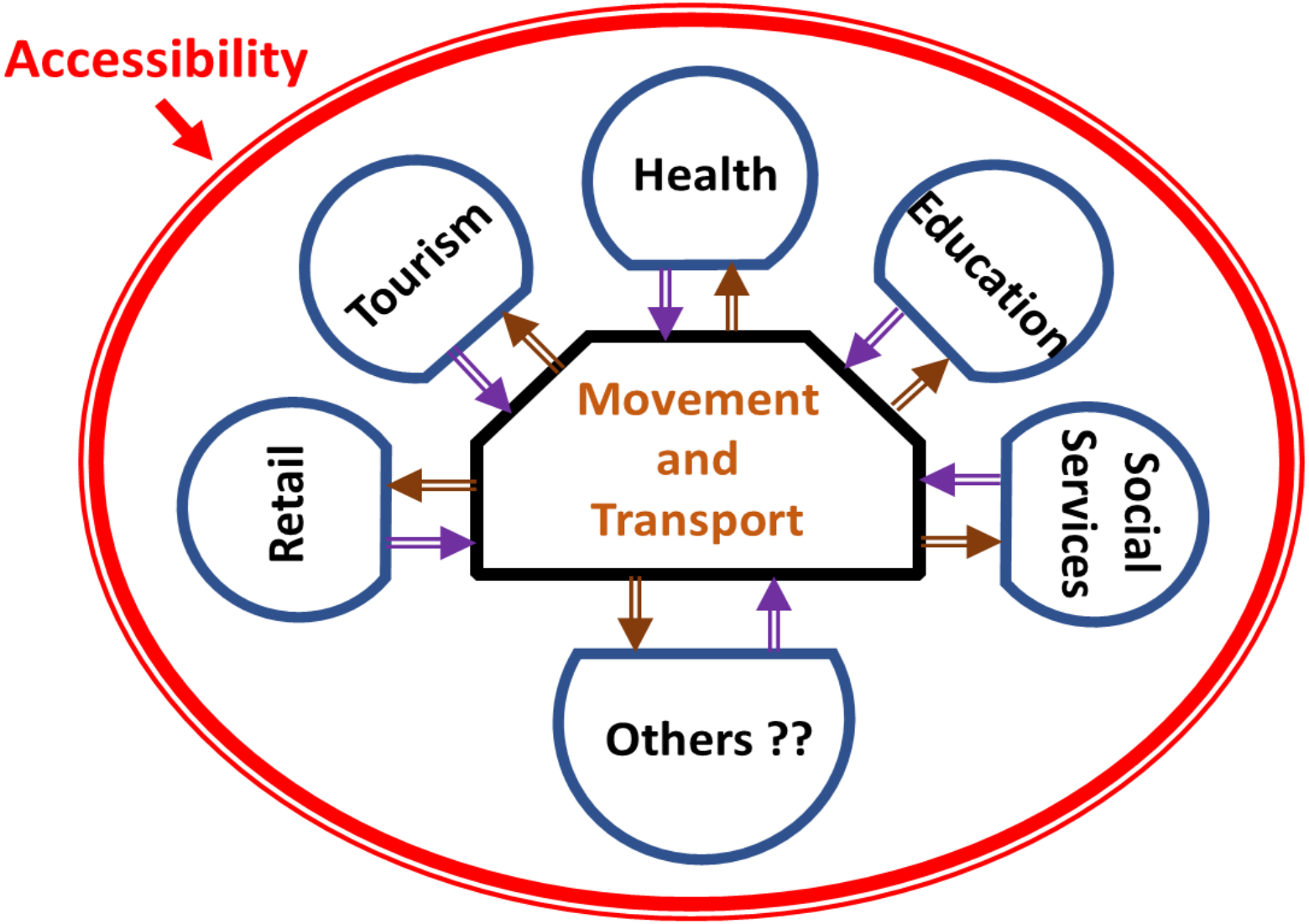
C Put in gyratory to increase road capacity (1960s)

Before

P Remove, to enhance place and provide new community heartland (2018)

After

Interdependencies between Sectors



KEY:

Impact of Transport on Sector: ⟹
(e.g. Health)
+ = healthy travel

- = pollution, safety

Impact of Sector on Transport: ⟹

- What demands do service delivery models and investments put on transport?

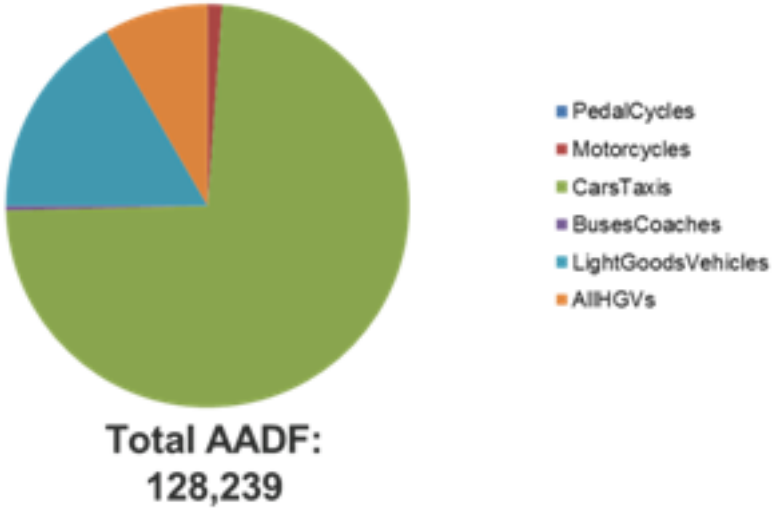
Generic Service Delivery Options

Form of delivery	Details	Consequences
Fixed Physical Facilities	Trade-offs: Numbers vs Size	Varying size of catchment areas (trip lengths) and modal options
Mobile facilities	Neighbourhood provision	Access on foot, but limited temporal availability
Provision to people's homes	Goods deliveries	Ordered by occupier or professional agency
	Personal services	Providing forms of care
Provision in-home	Physically	Purchase of equipment
	Digitally	Internet + receiver

AVOID Personal Travel

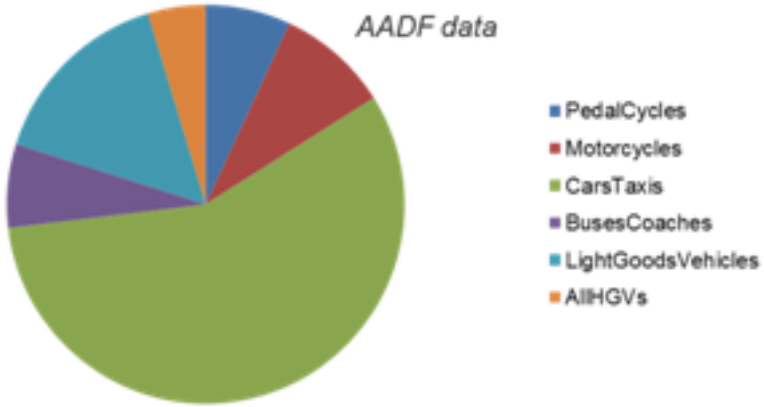
ROADSPACE MANAGEMENT

Urban Feeder Routes: Mix of ‘Roads’ and ‘Streets’



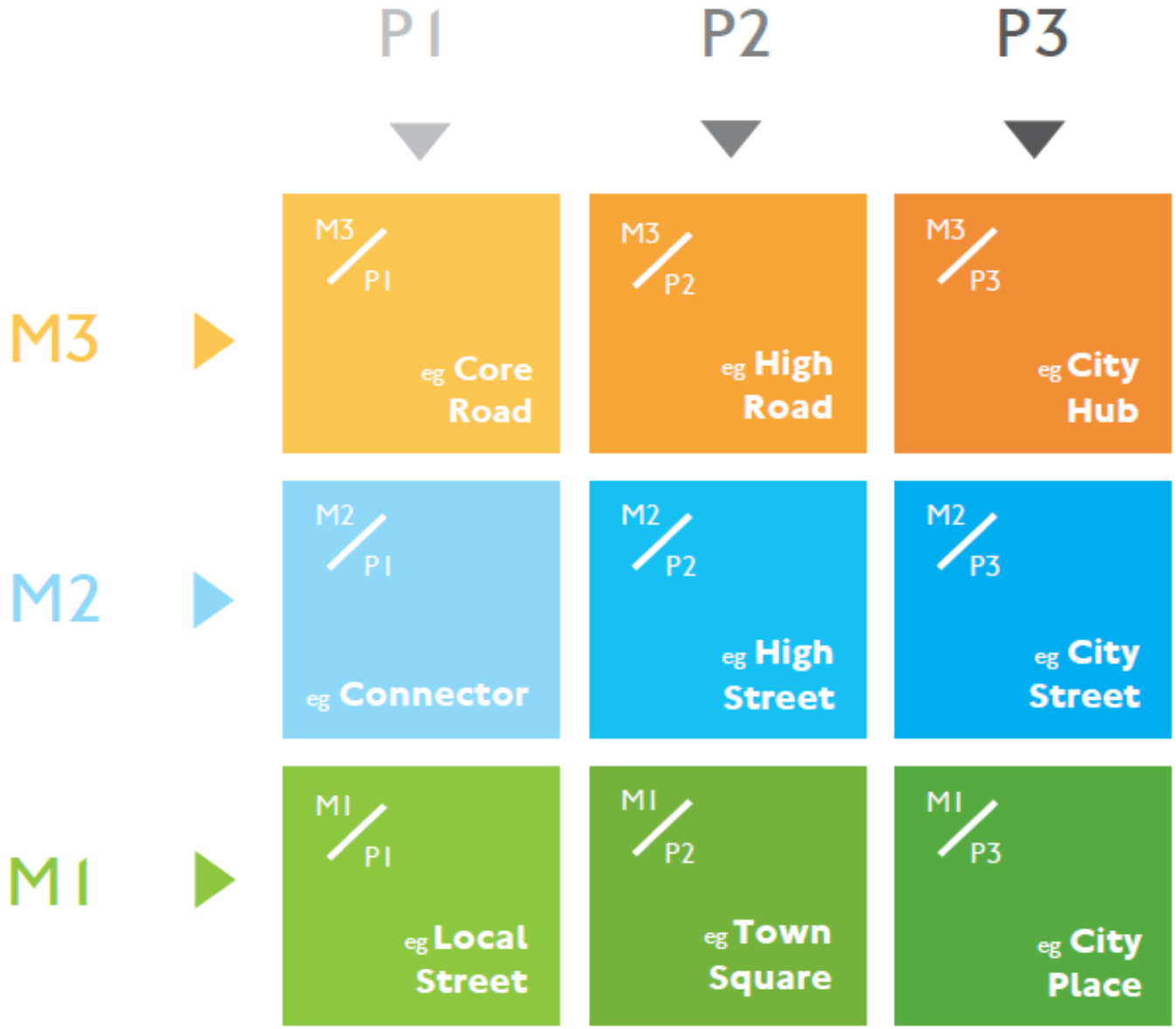
Total AADF:
128,239

AADF data

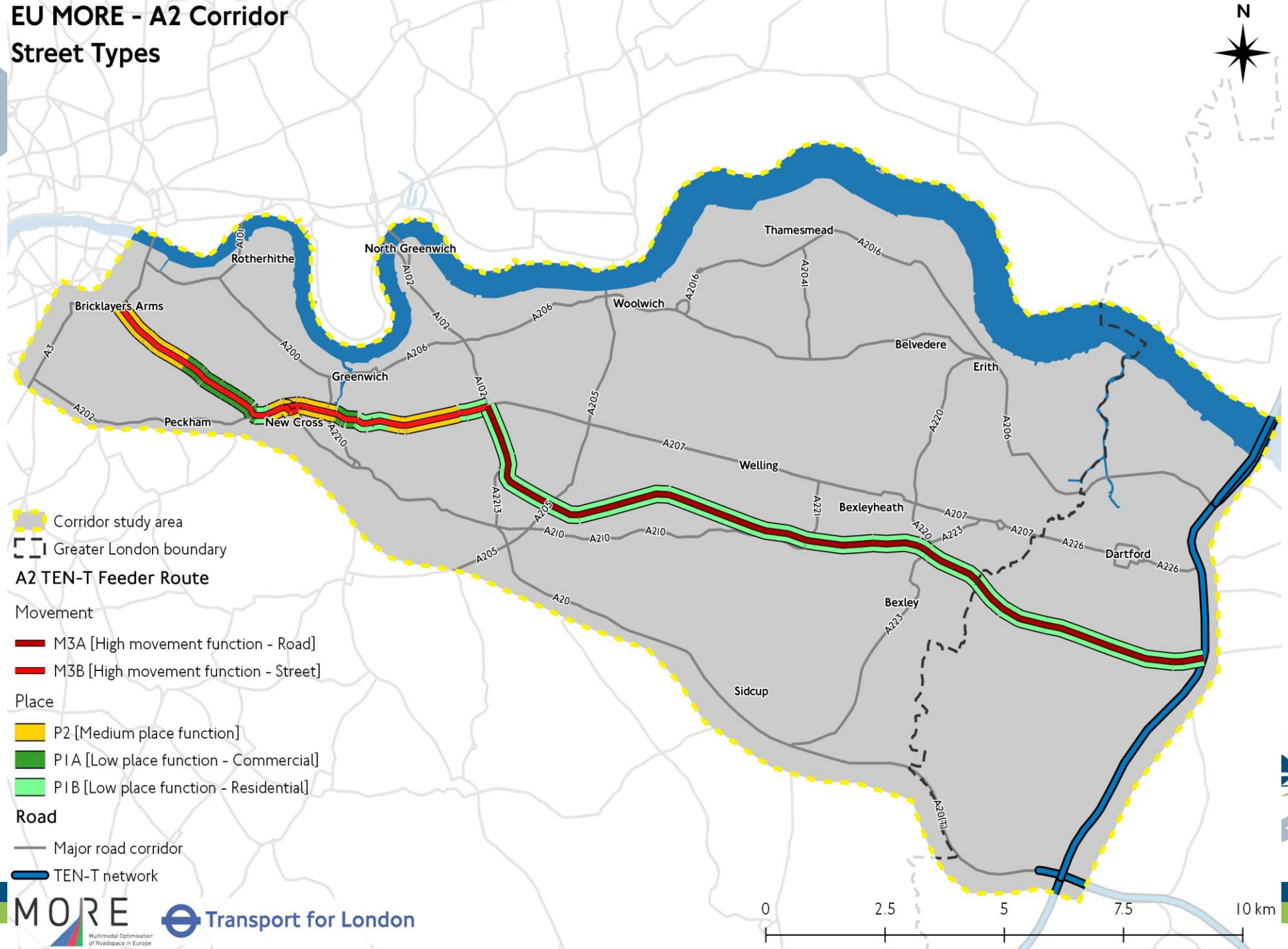


Total AADF:
29,593

TfL London-wide Street Classification



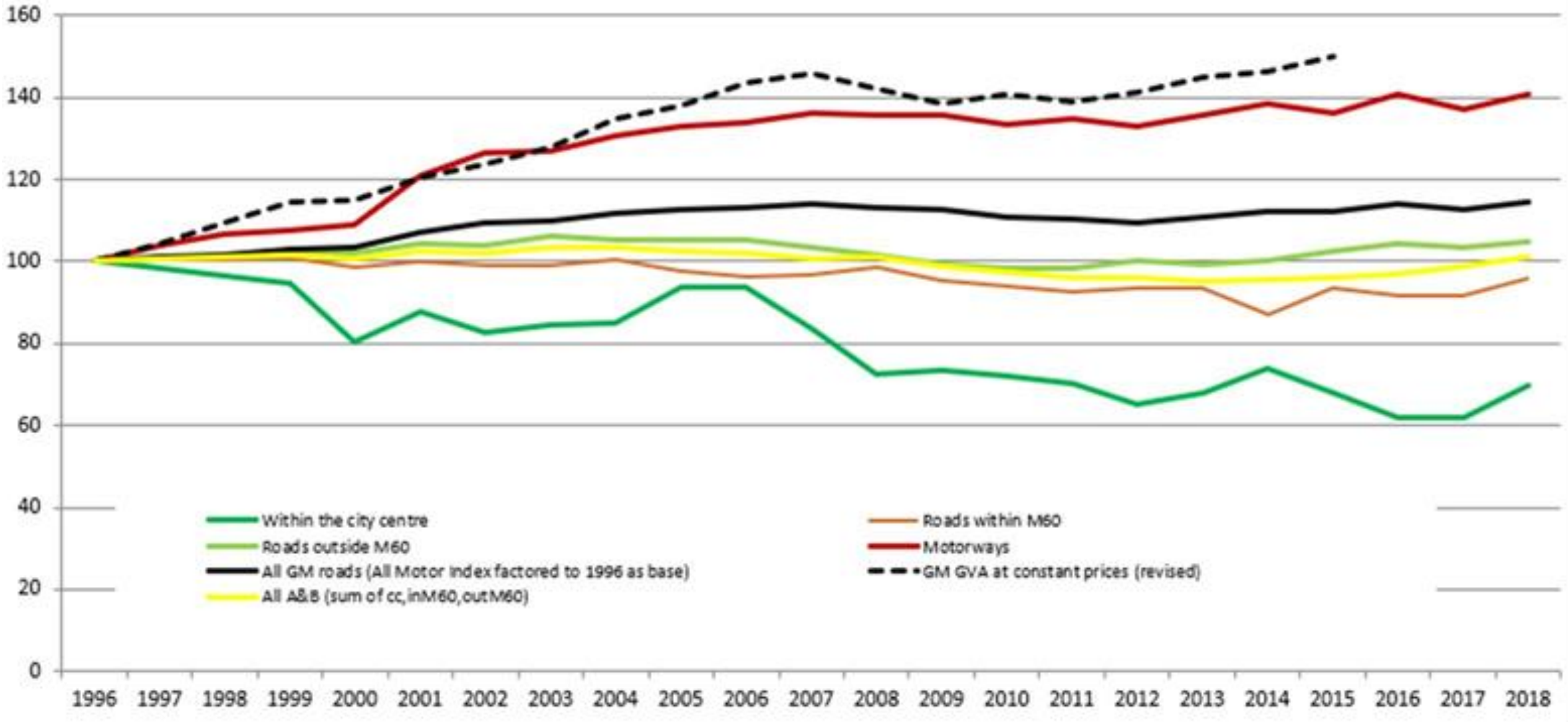
EU MORE - A2 Corridor
Street Types



MORE Multimodal Optimisation of Roadspace in Europe

Transport for London

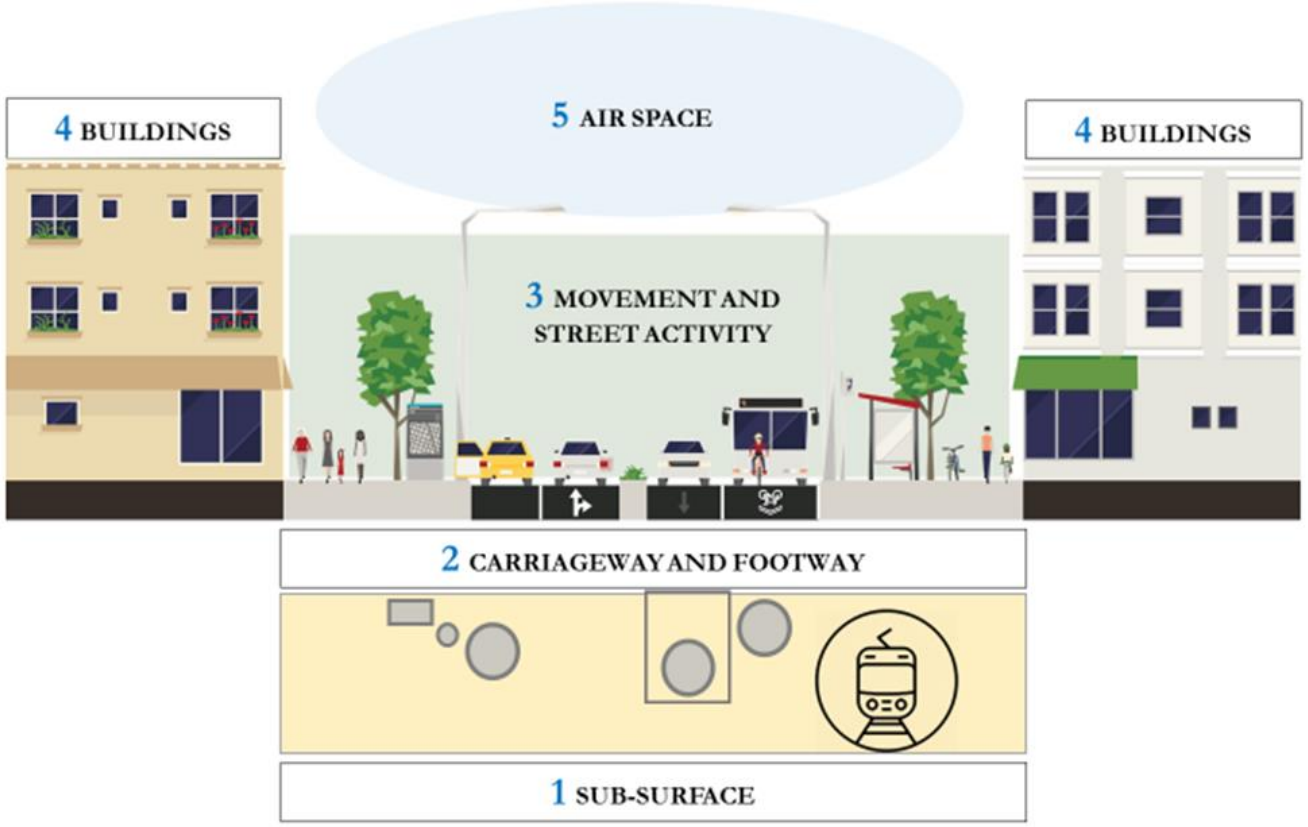
Conflicting Traffic Trends and Policy Aims



Source: TfGM

Street as an (CO_2) 'Eco-system'

- Looking at street space allocation holistically, from building to building – not by each use separately – as a comprehensive eco-system



- Being sufficiently imaginative in considering options for the allocation of urban street space.....
- Taking account of wider considerations (e.g. future of the high street)

MORE
Multimodal Optimisation of Roadspace in Europe

Pro-active no reactive regulation

- Current approach: regulate new mode as it becomes ‘established’ – always ‘on the back foot’
- Suggested approach: pro-active - generic regulation of activities allowed on different parts of the street e.g.:
  - **Footway:** non-motorised plus electric modes; maximum speed of 8kph (??), audible warning if wheel-based; no lights or protective gear
  - **‘Cycle’ lane:** Wheeled vehicles (motorised and non-motorised) between 8kph and 30kph (??); night time lighting, effective brakes; protective gear recommended; insurance for motorised vehicles
  - **Carriageway:** All motor vehicles capable of travelling at over 30kph; night lights and protective gear required, effective brakes, plus license, identification and insurance

MORE
Multimodal Optimisation of Roadspace in Europe

EXPANDING APPRAISAL

Measures of ‘Success’ Associated with Each Perspective

C: car-based

- Average network speeds
- Day-to-day variability
- Vehicle congestion
- Car parking availability
- Road traffic accidents
- Noise
- Air pollution

M: SUM-based

- PT frequency and reliability
- Access to bus stops and stations
- Safety and security
- Seamless travel
- PT modal split
- Walking/cycling modal shares
- Door-to-door travel times by mode

P: place-based

- Time use in transport modes
- Intensity of street activities
- Time spent in local area
- Value of high quality public space
- Health of the population
- Social interaction
- Social equity and inclusion
- Community severance

KEY: There are not yet well established means for measuring and valuing these benefits

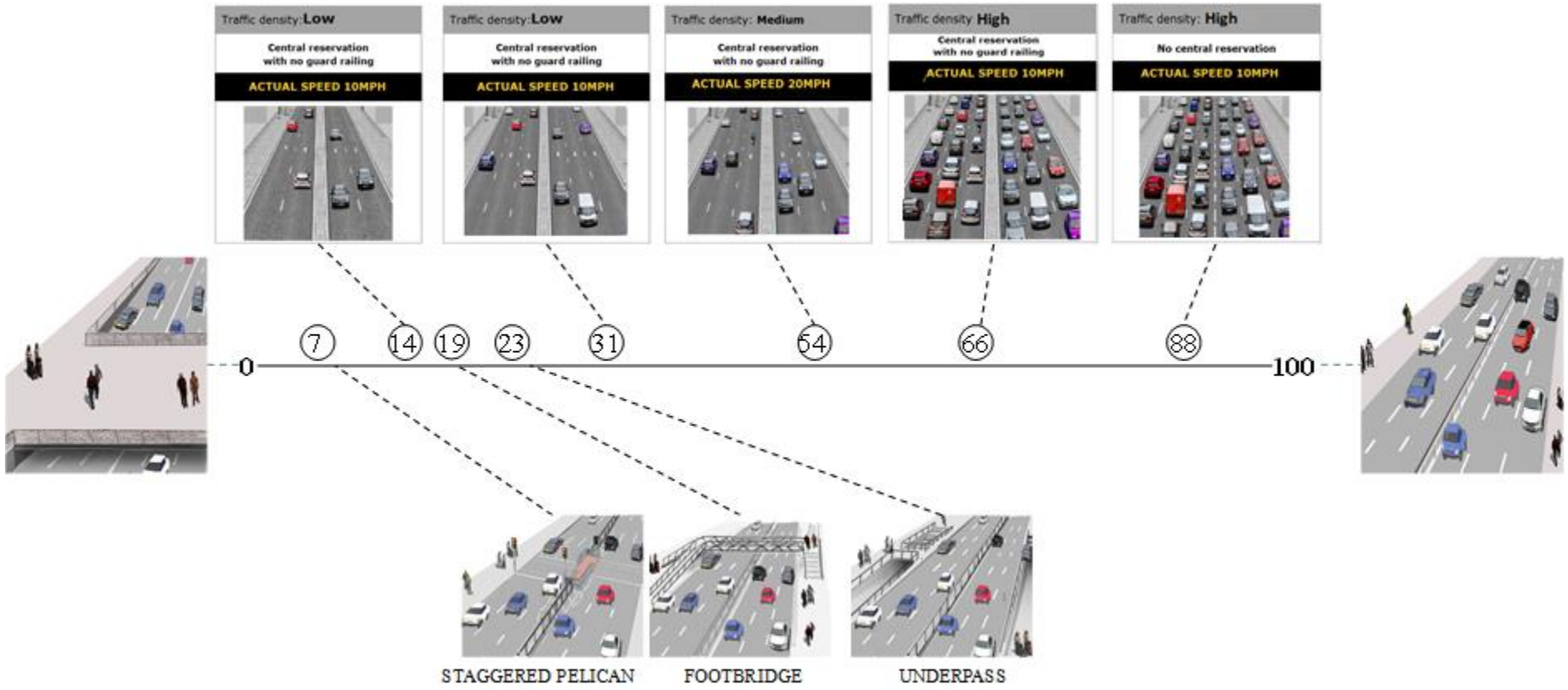
Influence of main road traffic on reported well-being

845 respondents in 4 areas:

2 in London,1 in Birmingham,1 in Southend

New indicator: severance caused by different types of roads

Disutility of crossing in relation to disutility of not making the trip
(scaled to 100 – based on SP1 and SP2)



Provisional findings

Indicative values – subject to revision

Potential intervention	Value per trip
6 → 4 lanes	£1.39
4 → 2 lanes	£1.11
Add central reservation	£1.12
High → medium traffic density	£0.94
Medium → low traffic density	£0.83
Speed below 30mph	£0.49
Footbridge → straight pelican	£0.11
Underpass → straight pelican	£0.51

Thank you!

peter.jones@ucl.ac.uk

www.create-mobility.eu
www.roadspace.eu
www.sump-plus.eu

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Designing Out Carbon: A Practitioner's Approach

Victoria Walsh, Highway Systems Manager, Devon County Council

Collaboration & Knowledge Sharing

Future Highways Research Group

- **Victoria Walsh, Highway Systems Manager, Devon County Council**
- **Background**
  - **Devon County Council are recognised as developing a thoughtful and robust approach to "designing out carbon". Victoria is part of the project team leading on this work and is actively exploring a framework for the analysis of whole life costs for CO2.**
- **Aligns with our research programme:**
  - **Whole Life Carbon Accounting (ECI+)**
  - **Scope 1, 2 & 3: Highways Sector Guidance Development**
  - **Zero Carbon Research Programme**

Carbon Reduction (Construction Works) Project

Victoria Walsh,
Highway Systems Manager

Step 1 – ToR Main Objective

To investigate, consider and embed new ways of working that help reduce the carbon output when designing and commissioning construction works for new roads and highway maintenance operations.

Carbon emissions calculations are to take a '**whole life costing of CO2**' approach – from sourcing primary materials through to their disposal at the end of a project's life.

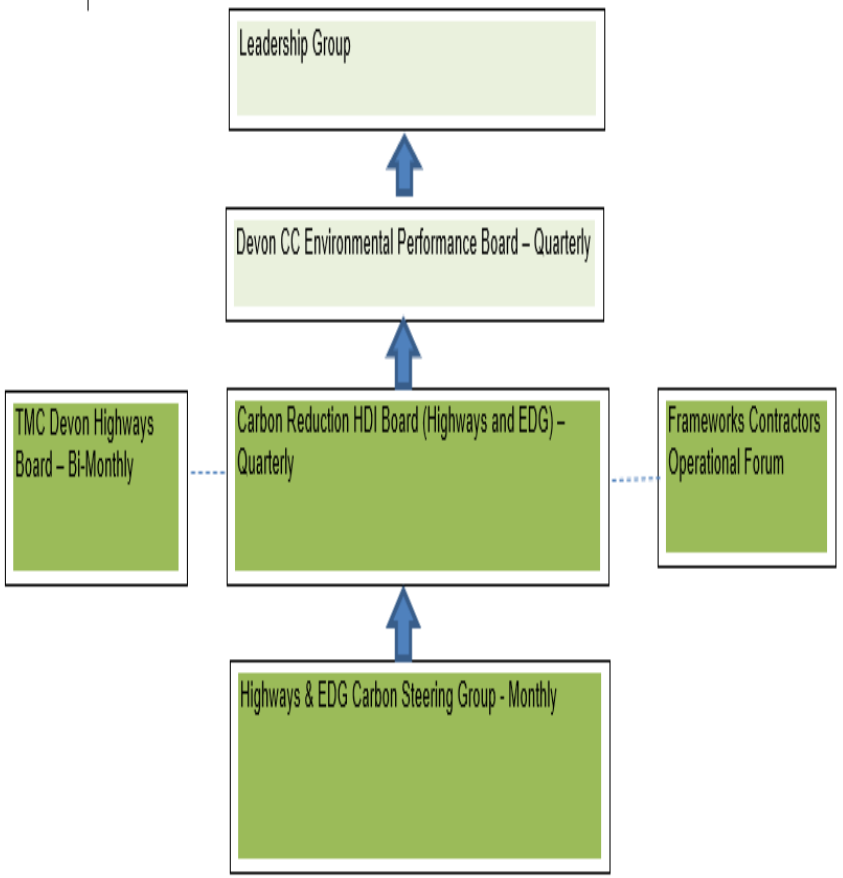
Early decision reached: To calculate on a set volume basis

Step 1 - ToR Areas of Focus

Scheme Setting	Asset Management Approach
Design	How do we ‘Design out Carbon’
Cultural Change	Balance traditional thinking (technical/costs) to a carbon oriented outlook

Step 2

Governance



Resource

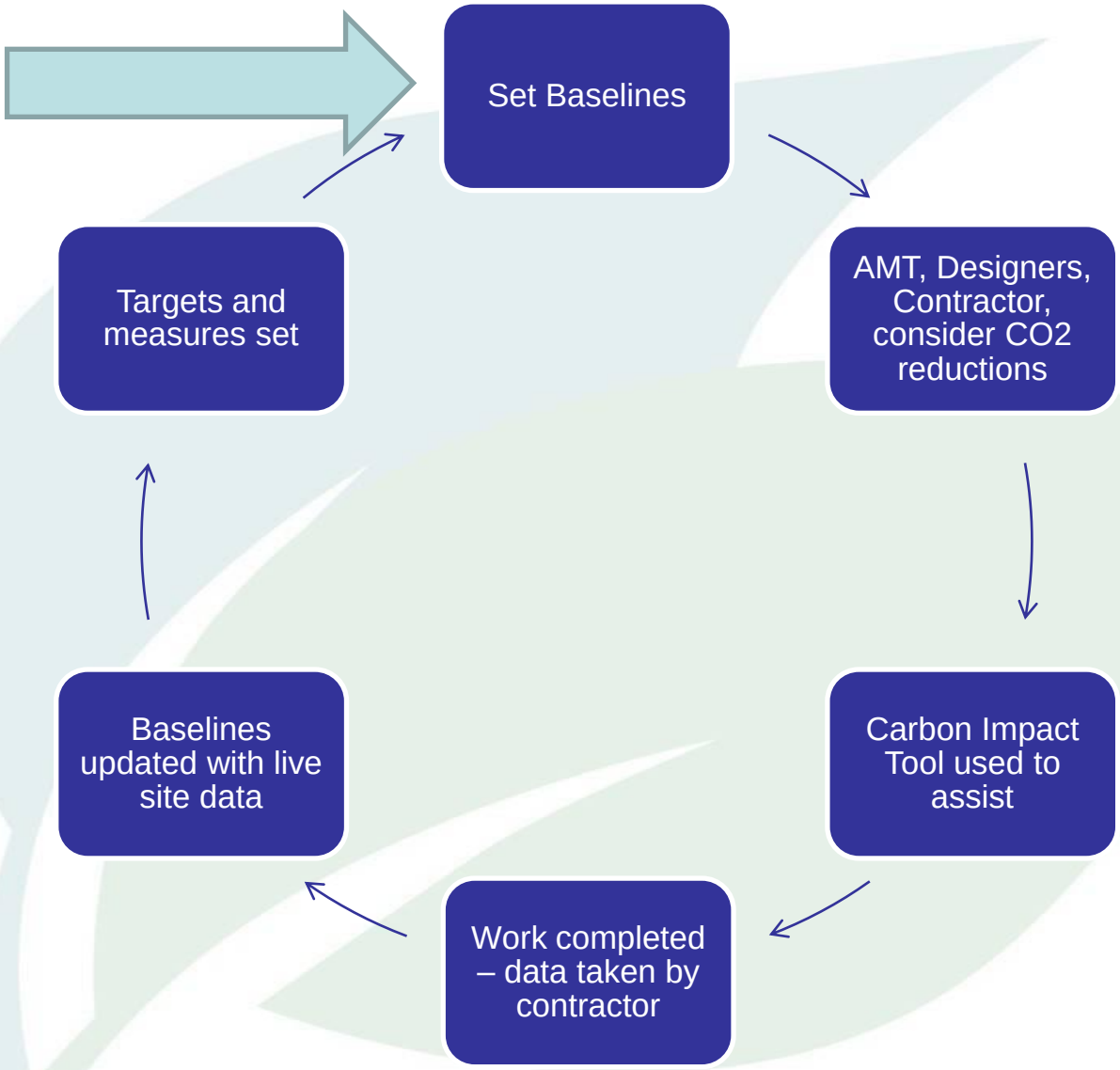
Internal Resource

- Existing Workforce
- Multi-rolled Officers
- Corporate Environmental Team

External Resource

- Exeter University

Business Process Model

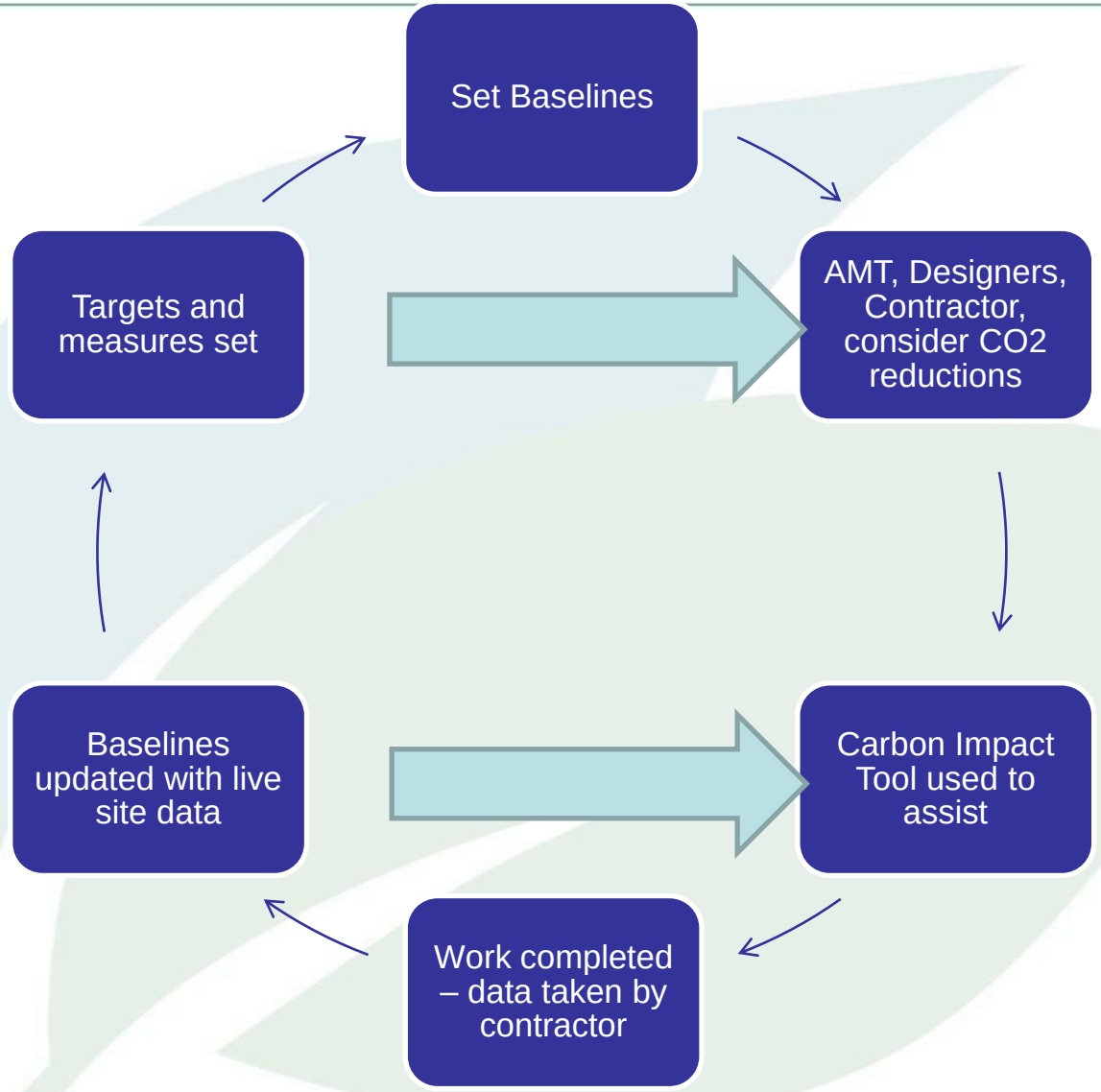


High Priority Matrix

Activity	Material	Waste	Fuel	Sustainability of Works	Volume over Year	Total Carbon Score
Potholes *(50 Repairs)*					High	
Rigid Road Maintenance					Low	
Machine Patch Warm Mix (Patch size of 60msq)					Low	
Resurfacing Warm Mix - Overlay					Low	
Resurfacing Warm mix- Inlay					Low	
Machine and Hand Laid Patching/Resurfacing AC, HRA, SMA *(Depth a variable factor)*					High	
Planned Drainage Works *(If plastic used)*					Medium	
Injection Patching					High	
Footway Works *(Bituminous footway patch – 10m section)*					Medium	
Joint Sealant Works					Low	
Gully Cleaning *(100 gullies)*					High	
Signs (Replacement)					Low	
Lines *(Centre lines 20 m & cost of 10 junction markings in same parish)*					Low	
Slurry Sealing					Medium	
Micro Asphalt					Medium	
Surface Dressing					High	
Street Lighting						
Traffic Signals						
PROW/Country Parks						

- ✓ Engaged with our contractors
- ✓ Used historic site data
- ✓ Tried not to over complicated – understand assumptions
- ✓ You may need experts – We are working with Exeter University
- ✓ Collaborate and set an achievable pace

Business Process Model



Carbon Impact Designer Tool

Input Values

Cell Colour Coding

White cell should not be edited	Sometimes these values are dynamic if taken from other input cells
Yellow cell user entry	Change these values depending on the scheme
Orange cell optional override	Set value to 0 if no override
Calculation output cells	

Lifecycle Inputs

Item	Value	Units	Notes
Year of job	2021		
Lifecycle period to consider	20	years	

General Distances within UK

Item	Value	Units	Notes
Default material supply distance	60	miles	DCC suggested range 40 - 200 miles; assu
Waste disposal distance	60	miles	DCC suggested 20 miles regular, 140 miles
Plant travel distance	20	miles	This is applied to all plant transport as on
Operative travel distance	50	miles	When used in calcualtions (i.e. when fuel

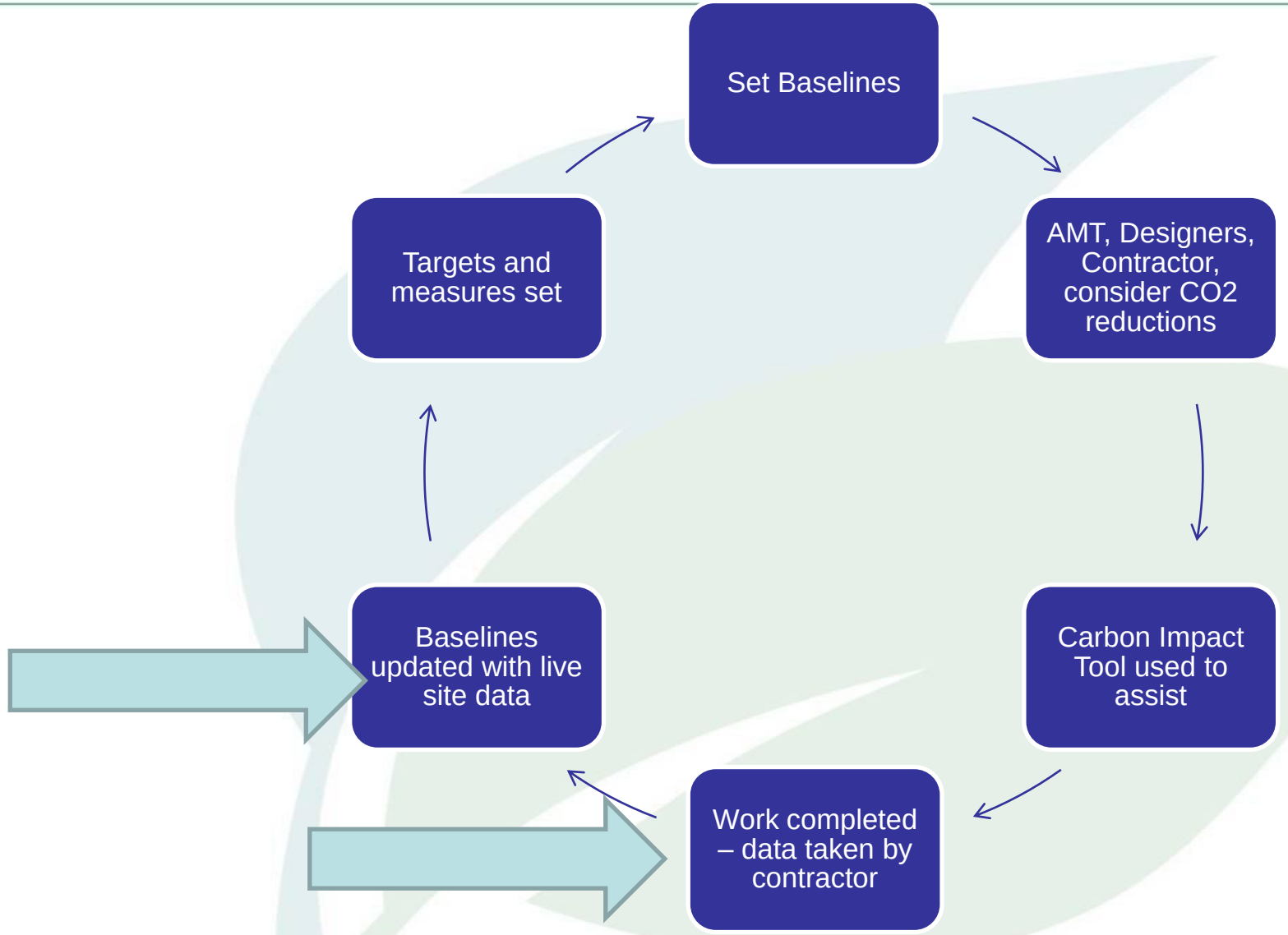
Supply Chain Description for Imported Materials (optional)

Note: Enter information here about supply chains from abroad - these can then be assigned to specific materials later. If there are sev

Item	Value	Units	Notes	
Unique Name for Route	Mode Crossing to UK	Distance travelled abroad land (miles)	Distance travelled sea crossing (miles)	Distance travelled in UK land (miles)
Overwrite this e.g. "China"	Cargo Ship: RoRo-Ferry	300		
	Not Applicable			
	Not Applicable			
	Not Applicable			
	Not Applicable			

- Focused on ‘designing out carbon’
- Considers the whole life costs of CO2 emissions
- Includes the ‘cost of carbon’ and £

Business Process Model



Standard Returns for Live Site Data

Carbon Data Return Form

General Information - Return at end of job only

Item	Value	Units	Notes
Scheme Location		Text	Write the location of the scheme
Works Order Number		Text	Enter the works order number
Date of Works		Date	Enter the completion date of the scheme
Type of Works		Text	Enter a short description of the works
Extent of works		Text	Enter the extent of the works e.g. for surface treatements the area in

Bulk Materials

	Quantity of Materials		Transport of Materials		
Name of Material (overwrite as many of these as necessary)	Quantity Used (enter a number)	Amount Used Units (enter tonnes or m3)	Fuel used to transport the material to site (litres) if known	Total Distance transported to the site (miles)	Notes
Overwrite this text for Material 1					Enter the name and amount o material to the site, and the d
Overwrite this text for Material 2					Enter the same information as
Overwrite this text for Material 3					Enter the same information as
Overwrite this text for Material 4					Enter the same information as
Overwrite this text for Material 5					Enter the same information as
Overwrite this text for Material 6					Enter the same information as
Overwrite this text for Material 7					Enter the same information as

Plant

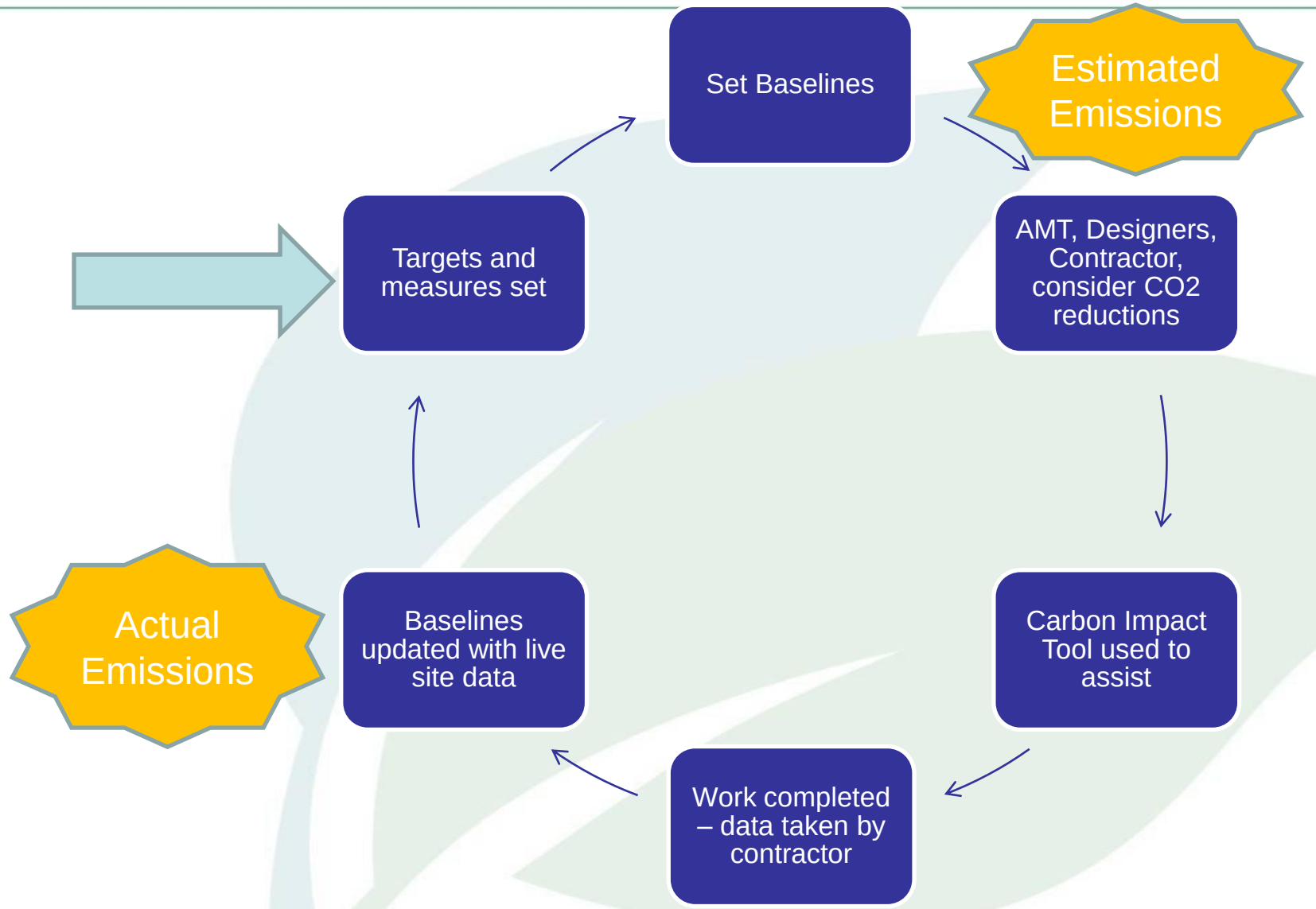
Name of Plant Item (overwrite as many of these as necessary)	Litres of fuel used on the job (enter a number)	Fuel Type (Enter Diesel or Petrol)	Fuel used to transport the plant to site (litres) if known	Distance to transport plant item to site (miles)	Notes
Overwrite this text for Plant Item 1					For each plant item enter the associated with transporting t the plant was transported for
Overwrite this text for Plant Item 2					Enter the same information as
Overwrite this text for Plant Item 3					Enter the same information as
Overwrite this text for Plant Item 4					Enter the same information as
Overwrite this text for Plant Item 5					Enter the same information as
Overwrite this text for Plant Item 6					Enter the same information as
Overwrite this text for Plant Item 7					Enter the same information as

‘***Raw Ingredients***’ approach

Requires 4 elements:

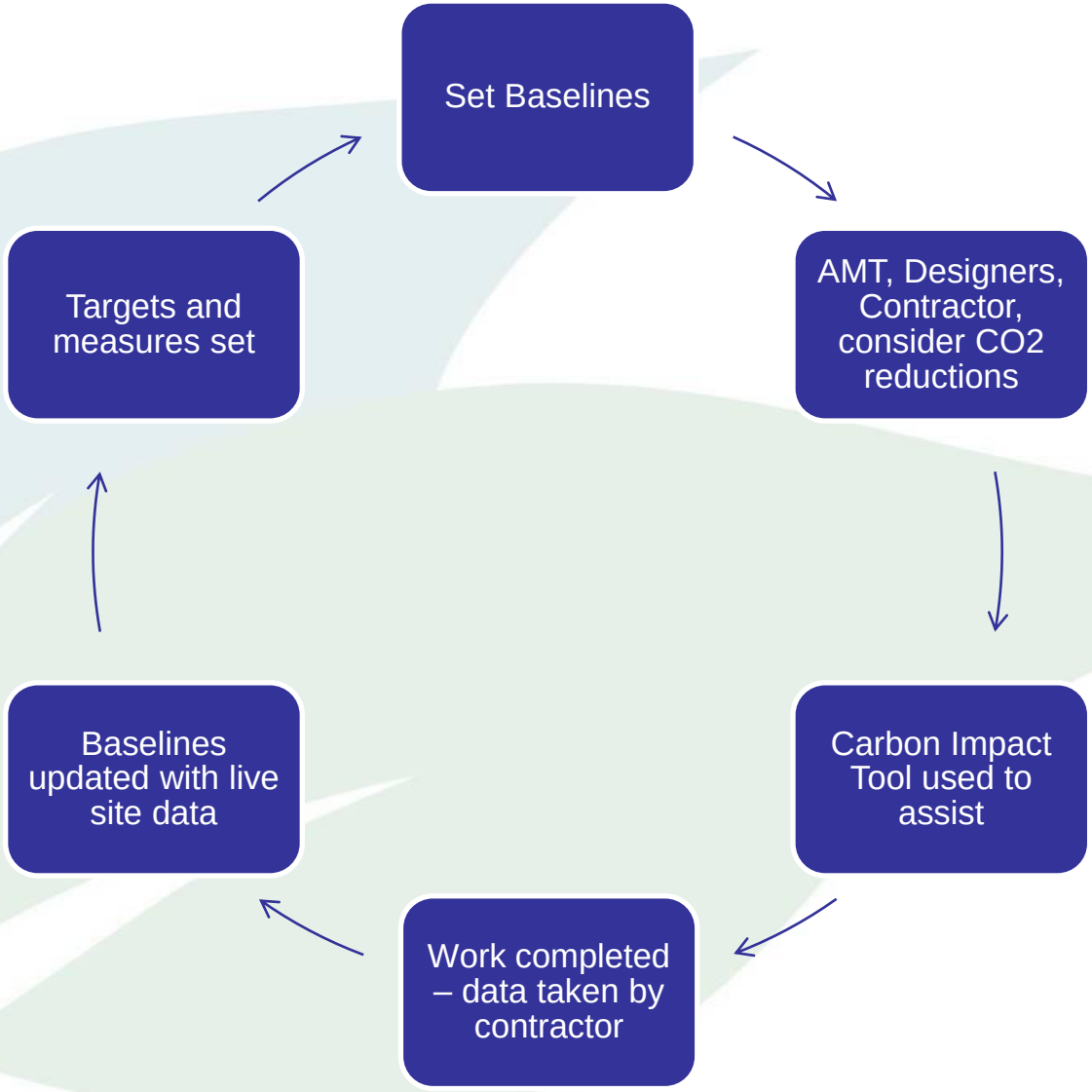
- Plant list
- Materials
- Waste/recycling
- Fuel Records

Business Process Model



What's next……

We continue around the cycle



DCC Carbon Reduction
Future Perceived Challenges

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Comfort Break

10 Minutes

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Net Zero Carbon Materials & Processes (Scope 3 Preparation)

Owen Jenkins, Director of Growth and Economy, Oxfordshire County Council
David Ogden, Operations Director UK Contracting, Colas Limited

Collaboration & Knowledge Sharing

Future Highways Research Group

- **Owen Jenkins, Director of Place, Oxfordshire County Council.**
- **David Ogden, Operations Director, Colas.**
- **Background**
  - **David and Owen are proposing a research project to prioritise the activities encompassed within Scope 3 so as to focus on the factors that will deliver the most significant carbon reductions.**
- **Aligns with our research programme:**
  - **Scope 3: Highways Sector Guidance Development**
    - **Specifically, materials and operational processes.**
  - **Zero Carbon Research Programme**

SCOPE 3 PREPARATION

A DECADE OF ACTION

TO PRESERVE THE PLANET

Covers direct emissions from owned or controlled sources.
- Fuel combustion
- Company vehicles
- Fugitive emissions

Scope 3 **>80%**

Covers indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company or authority:
- Purchased electricity, heat and steam

Includes all other indirect emissions that occur in a company's value chain

Down Stream Sources:
- Investments & Franchises
- Leased assets
- Transport, Logistics & Distribution
- Processing of sold products & End-of-life treatment of products

Upstream Sources:
- Purchased goods, Capital Goods and services
- Fuel & Energy
- Transport, Logistics & Distribution
- Business Travel & Employee Commuting
- Waste from operations
- Leased Assets

Faced with the climate emergency, collaboration and innovation is essential for the Highways Sector.

OVERVIEW

Most businesses believe that at least 80% of their total emissions footprint falls within Scope 3

CDP has calculated that the average company's supply chain emissions are around five-and-a-half times greater than those generated by their direct operations

Ambitious and collaborative action is required to tackle scope 3 emissions the UK Highways sector

Decade of action is needed to achieve nett zero emissions in line with existing commitments or even the 2050 deadline recommended by the IPCC

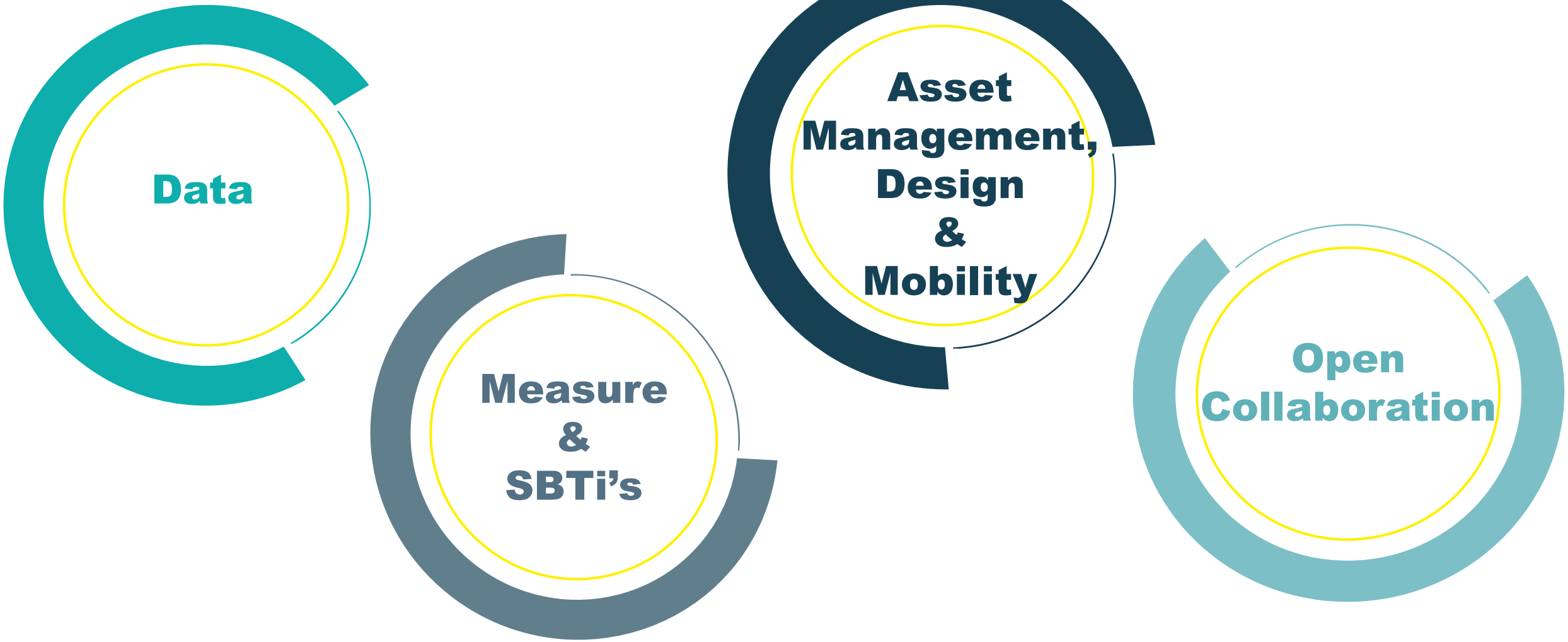
2

RESEARCH PROPOSAL

RESEARCH THEME

CONSIDERING THE DESIGN, OPERATIONS AND MATERIALS FOR HIGHWAY WORK, WHAT ARE THE PRIORITIES FOR SCOPE 3 TO ACHIEVE NETT ZERO IN THE UK HIGHWAYS SECTOR.

RESEARCH CONSIDERATIONS



RESEARCH RATIONALE

COLLABERATION	INSIGHT	ENGAGEMENT
• Public & Private • Large & Small • Multiple sector stakeholders	• Definition • Measurement • Data Capture • Best Practice • SBTI's • Carbon Hierarchy	• Local & Strategic Roads • Public & Private • Global Community • Share outcomes • Continued momentum • Public events

OUTPUT:

POSITIONING PAPER TO INFORM & STIMULATE THE INDUSTRY INTO ACTION ON SCOPE 3

KEY QUESTIONS FOR THE RESEARCH

- **What is the current level of understanding of the data capture requirements of Scope 3 within the UK Highways Sector ?**
- **How are Scope 3 emissions in the Highways Sector being measured currently inside & outside of the UK?**
- **What steps is the Sector taking to ensure SBTI's are being developed, can we learn from outside of the UK?**
- **What are the priorities within Scope 3 for the UK Highways Sector**
- **As a global sector we have developed and trialled decarbonised solutions for many years across maintenance and construction activities, but to date these options are only used sporadically, why is this ?**
- **Where is Carbon impact currently within the Asset Management, Design and commissioning decision hierarchy inside & outside of the UK?**
- **How do we break down commercial blockers to achieve full collaborative working across the sector?**

POTENTIAL RESEARCH PARTNERS

- CIHT
- PIARC
- ADEPT
- FHLG
- BAA
- CECA
- LCRIG
- MPA
- RSTA
- TRIB
- HE
- HSC
- TfS
- TfW
- DfT
- Carbon Trust
- Oxford University

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Highways

PART OF TRANSPORT NETWORK

StreetCare Operating Model

Jon Munslow, Place, Asset and Infrastructure Group Manager

Collaboration & Knowledge Sharing

Future Highways Research Group

- **Jon Munslow, Asset and Infrastructure Group Manager, South Gloucestershire Council.**
- **Background**
  - **South Gloucestershire Council has evolved from a DLO to an efficient and effective mixed economy operating model (StreetCare). This approach is currently a top performing option in the Future Services Delivery assessments undertaken by Proving.**
- **Aligns with our research programme:**
  - **Future Operating Models**
  - **Mixed Economy Operations**

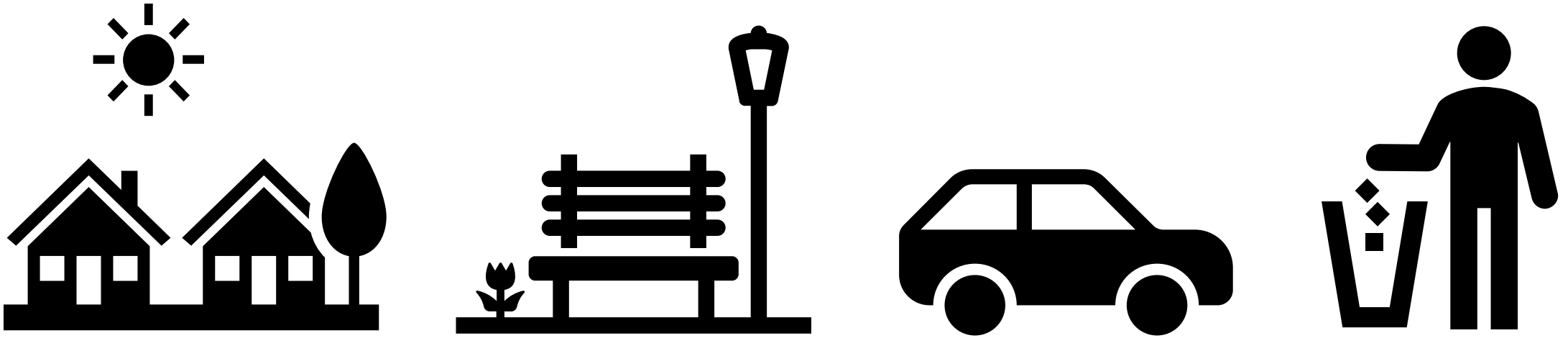
South Gloucestershire Council

StreetCare Transport and Waste

Jon Munslow

Place, Asset and Infrastructure Group Manager

Introduction



Context

Place Making and Delivery:

- Manages and protects SGC's largest assets, including:
- **£4.08billion** Highway Infrastructure
    - 1,600 Km of highways – set to grow by 140km in the next 5 years
    - 32,000 lights and bollards
- **£4.5billion** Green Infrastructure
    - 12,000 pockets of open space
- **£65million** Waste Contracts
- **RFS** - In excess of 35,000 contacts to the team a year

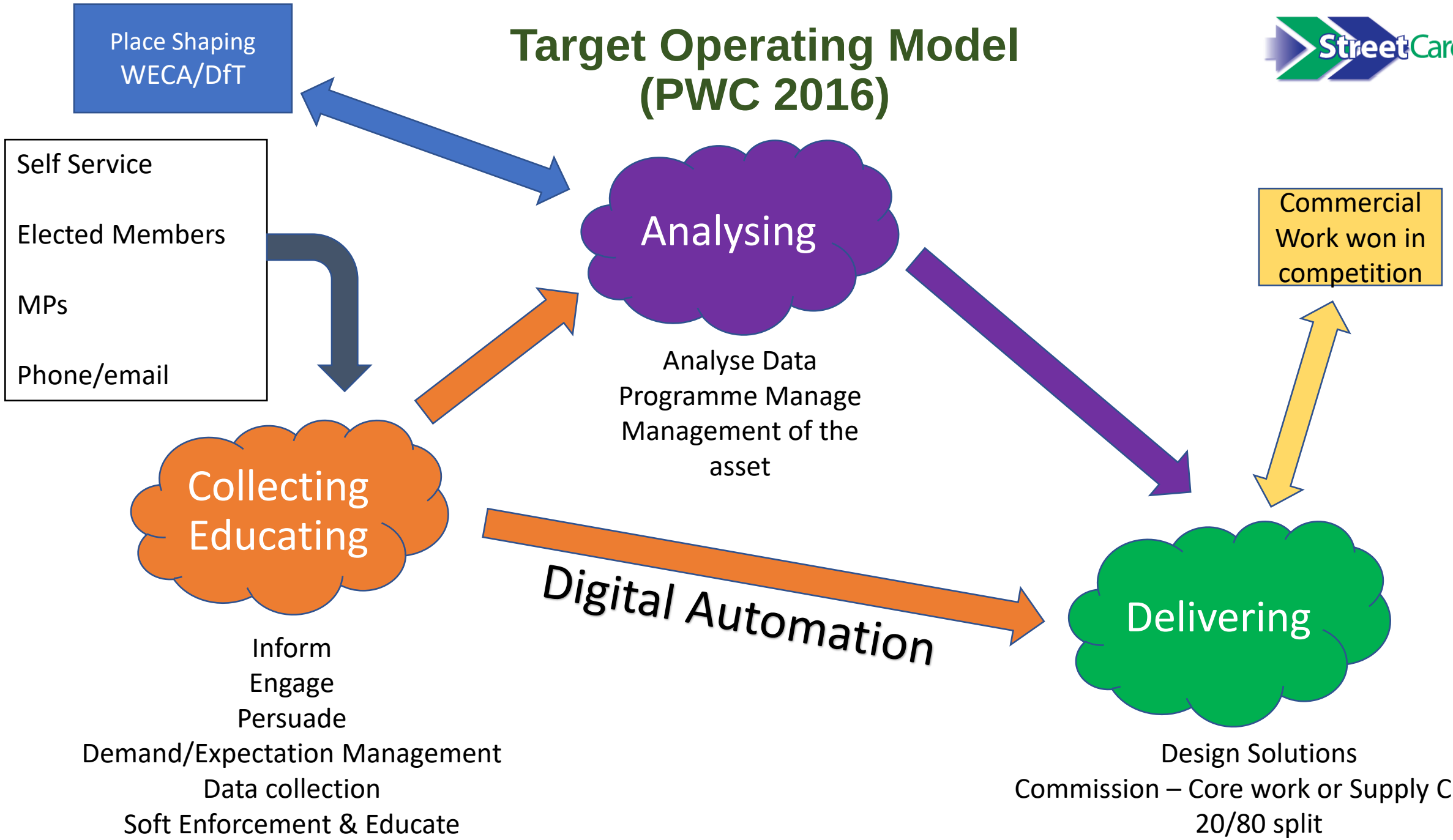
Highways:

- Increase in Asset value over the last 5 years is £680M
- Asset condition is declining as we need £11million per year to stand still and only spend on average £4million.
- In last 7 years the team have secured £40million in additional capital maintenance funding (£1.5million staff has levered a return of 26:1). (sticking plaster and helped in the short term)

Open spaces and verges:

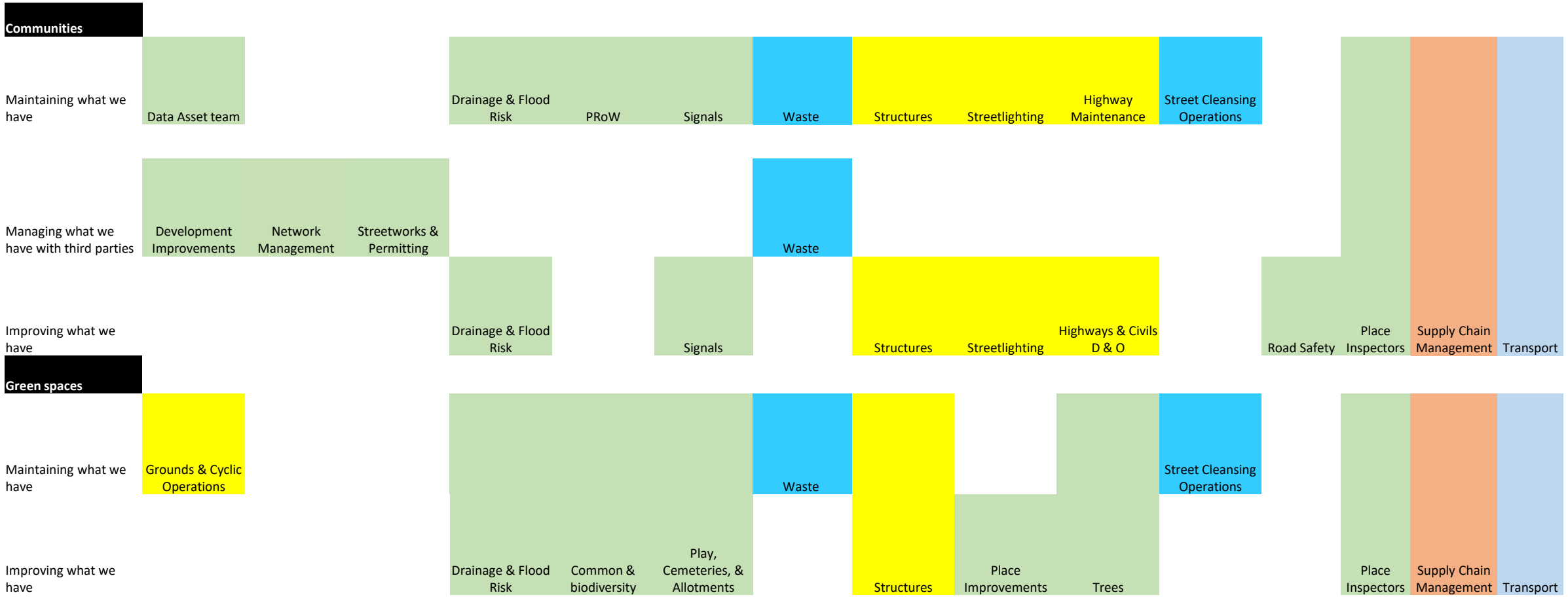
- Economic and Climate Change value- up to £4.5 billion – Well managed OpenSpaces and GI can provide a high 'monitised' value for carbon capture, water retention/ filtration, air quality and health and wellbeing benefits.

Target Operating Model (PWC 2016)



StreetCare Transport and Waste
Place Making and Development

Matrix working across the section



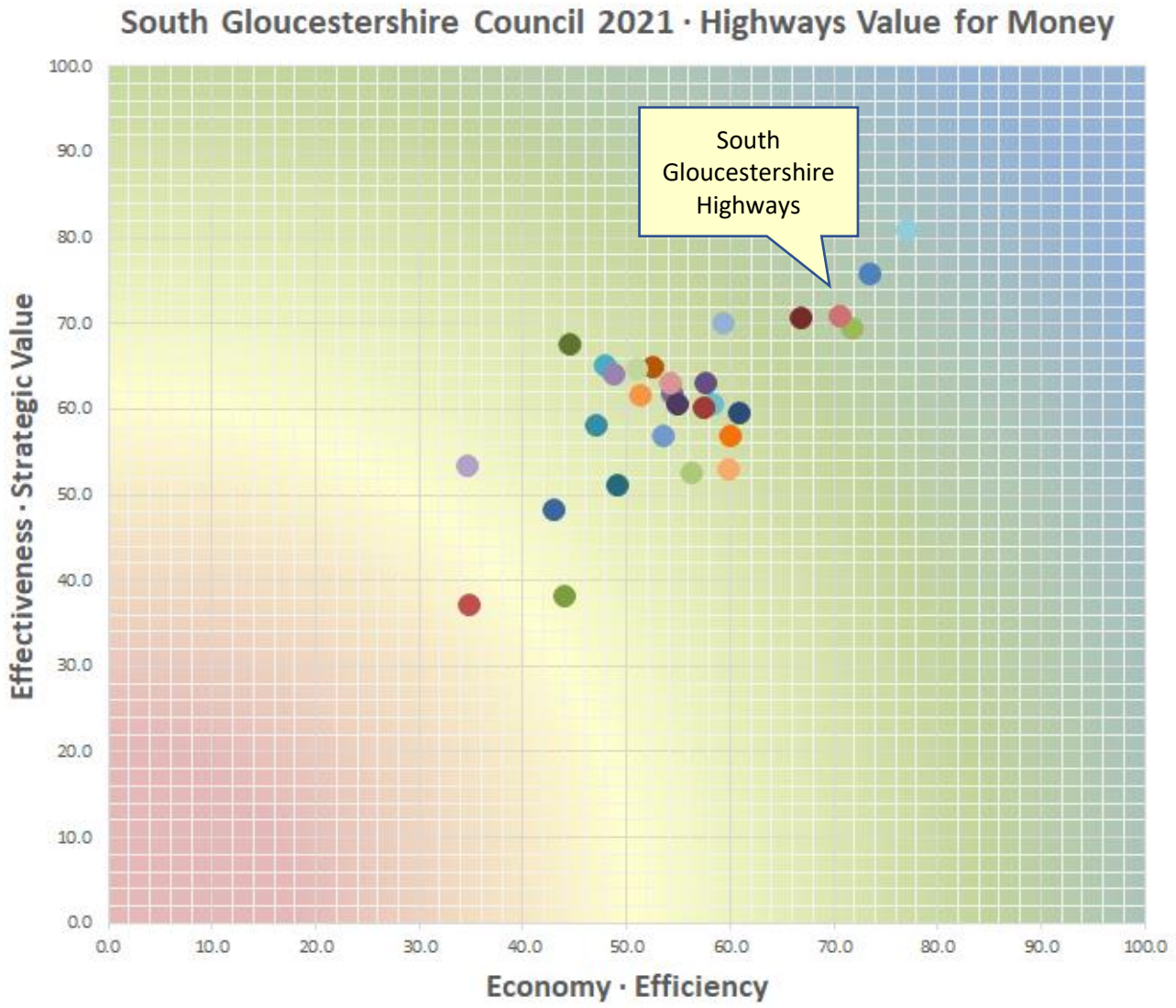
How We Contribute to the Big Picture

Links to Council Plan

Commitment 12	Commitment 13	Commitment 17	Commitment 18
Clean Streets and Maintain Roads Effectively Asset Management of network, Build Community resilience Localism - Place Inspectors Community group support (volunteers' value **£250k**/year)	Climate Emergency Carbon Footprint/ Offsetting GI Strategy nature recovery Tree planting Recycling Electrifying the fleet	Value for Money What we do has a direct link to public perception NHT/CQC Declining asset – stretch resource to meet demand	Generate Income from Commercial Operations Exceeding targets Significant contribution to corporate service through "trading" Circa **£450k** surplus/year

Cross Council Links

Commitment 8	Commitment 4
Prevention Broken window effect - litter – graffiti - fly tips • Build pride in communities • **Reduces demand on Safe and Strong Teams**	Positive Mental Health for Young People Green Lung • Mental health benefits • Study in Sheffield found for every £1 spent on Open spaces and GI there is a £34 saving in health costs • **Reduces demand on Social Care and Health Service**



Proving Services VfM – Benchmarked Position: FHRG members 2018 to 2020 (Performance score only)

National Highways and Transportation CQC Benchmarking

- Carriageway Maintenance is being delivered at lowest like for like cost in the peer group
- SGC is the most efficient Authority in the peer group.
- Real efficiency savings of 8.4% or £3.07million since 2014.
- Efficiency saving in 2019/20 £353,000

But what is making our difference?

Five Key Things.

One Cohesive Team

Line of Sight

Culture

Invest in our People

Celebrate Success

One Cohesive Team

- Strong and Committed Leadership.
- Teams are empowered and trusted.
- Operations and supply chain are involved in major service discussions and decisions.
- We all meet regularly and discuss what is coming and what is happening.
- Aligning Your Drivers

Line of Sight

Business Plan

Service Improvement Plans

ISOs and StreetCare Information Management

- ISO 9001 Quality
- ISO 14001 Environment
- ISO 55001 Asset Management

Asset Management Framework

Performance Management Framework

Culture

The StreetCare Family Brand.

Modelling the right behaviours.

Respect and support.

Seeing the Customers perspective.

Close Elected Member Relationships

Invest in our People

Annual Training plan.

Regional Groups and National Conferences.

Apprentice Programmes.

Staff professional development.

Project Management

Celebrate Success

Big and Small.

The Voice – internal newspaper

Gritter shed get togethers.

Go for National Awards.

Include our Supply Chain Partners

To summarise

StreetCare Works

Alignment

Ownership

Process

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A New Methodology for Prioritising Local Authority Skid Resistance

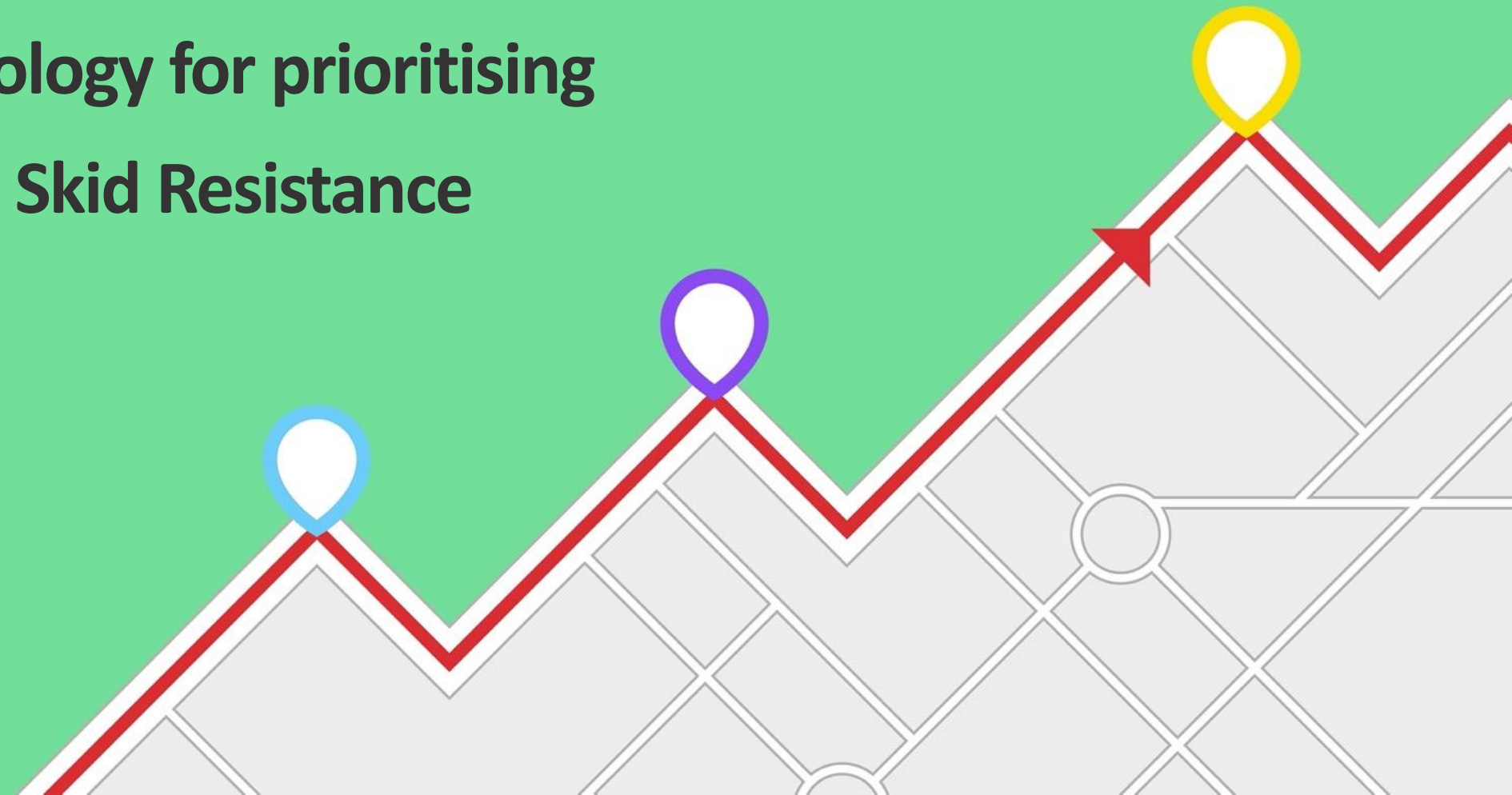
Kully Boden, Interim Head of Service, Derby City Council

Dr Helen Viner, Director, Enodamus Limited

The LASR Approach

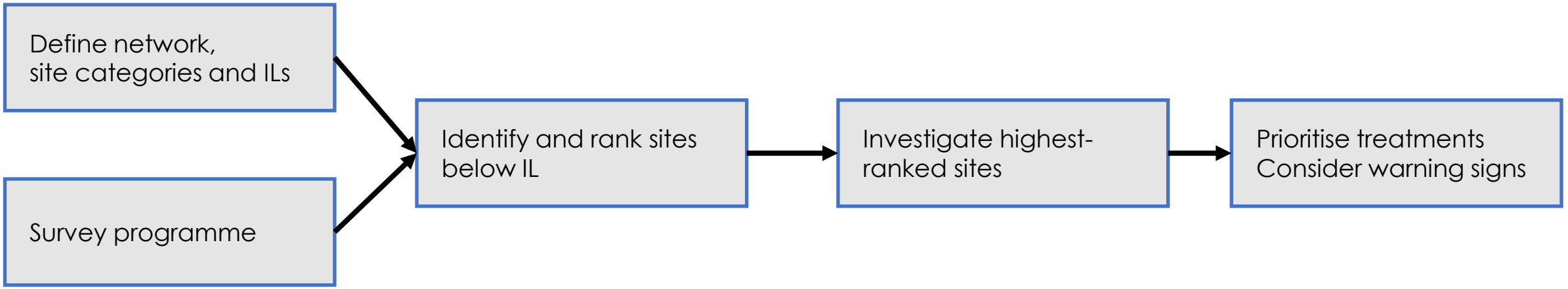
THE ROAD SAFETY TRUST
Making Roads Safer

A new methodology for prioritising Local Authority Skid Resistance



Motivation

We have a well-established process for managing skid-resistance:



However:

- Site categories and IL are based on the Strategic Road Network
- Lack of evidence of whether they are appropriate for local roads
- Better information could inform prioritisation and justify investment
- Necessary for risk-based management approach

The project

- DCC led an application to the Road Safety Trust
- Successful! 12-month project completed recently by XAIS and Enodamus

Objectives were to:

- Develop a simple model of the relationship between skid resistance and collision risk on local roads
- Provide evidence to justify treatments and prioritise investment

Project collaborators:

THE ROAD SAFETY TRUST
Making Roads Safer

Derby City Council

Enodamus
Part of the International Transport Experts Network ITEN

XAIS
Asset Management

Supported by:

City of BRADFORD
METROPOLITAN DISTRICT COUNCIL

DERBYSHIRE
County Council

Doncaster Council

Kirklees COUNCIL

Leeds CITY COUNCIL

Leicestershire County Council

North Lincolnshire Council

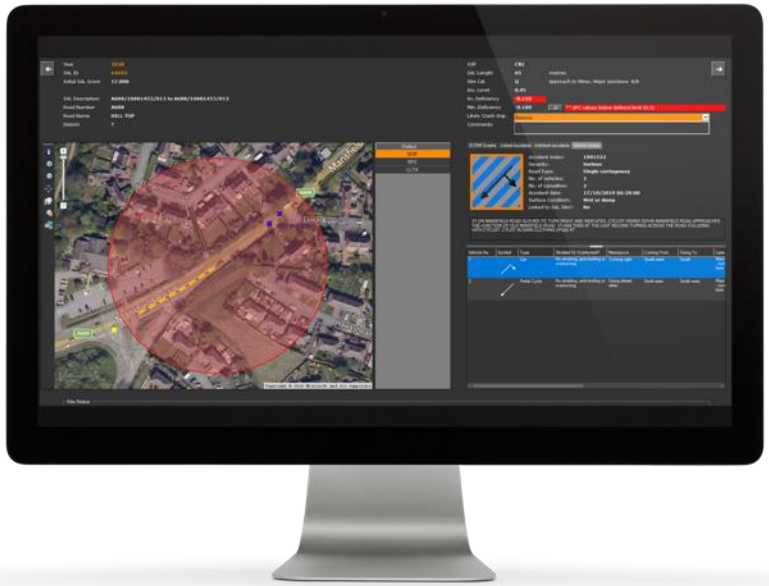
Nottingham City Council

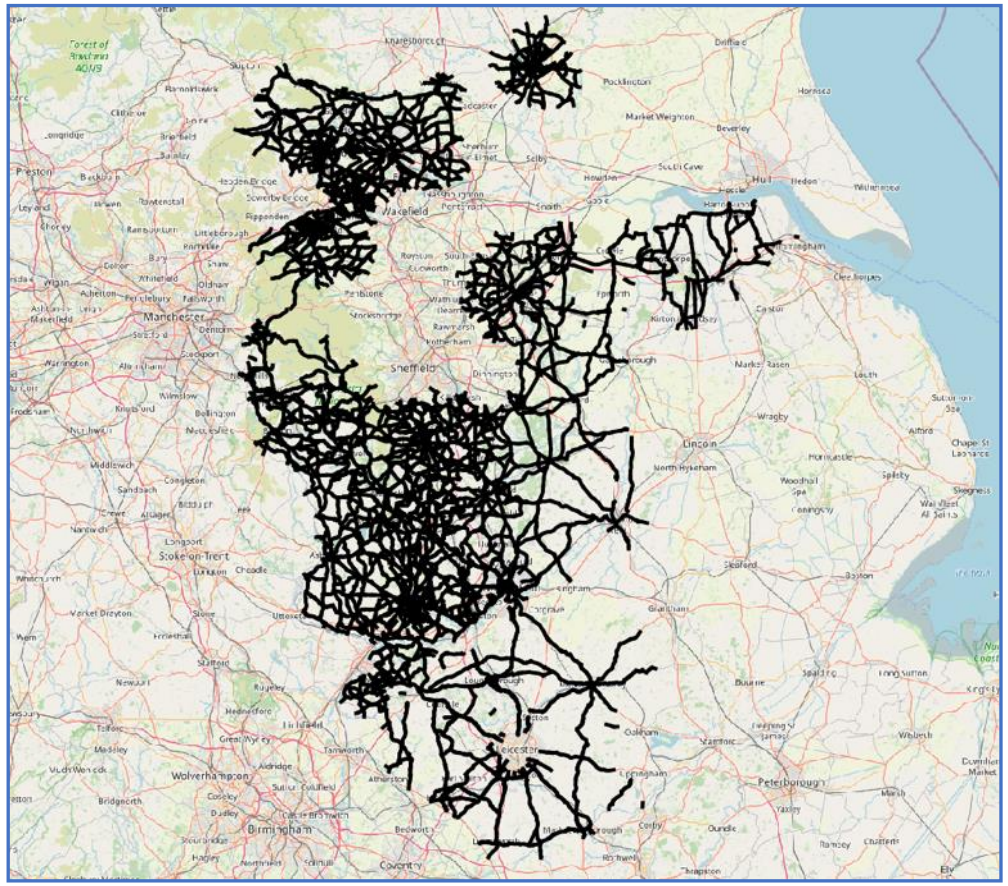
in partnership with
via Nottinghamshire County Council

CITY OF YORK COUNCIL

2016-18* data supplied by 11 participating authorities via XAIS

*Leicestershire 2017-2019





- 33,600 sections
- Nominally 250m
- 5000km total

- 12,000 collisions – 25% wet
- 0.8 collisions/km/year

Analysis suggests new thresholds for 4 site categories

Site Category	Definition	Investigatory Level at 50km/h				
		0.35	0.40	0.45	0.50	0.55
A	Motorway	✔				
B	Non-event Dual Carriageway	✔				
Bi	Increased Risk, Non-event Dual Carriageway		✔			
C	Non-event Single Carriageway		✔			
Ci	Increased Risk, Non-event Single Carriageway			✔		
Q	Approaches to and across minor and major junctions and approaches to roundabouts			✔		
Qi	Increased Risk, Approaches to junctions and roundabouts				✔	
K	Approaches to pedestrian crossings, traffic lights and other high-risk situations				✔	
Ki	Increased Risk, Approaches to high-risk situations					✔
R	Roundabout			✔		
Ri	Increased Risk, Roundabout				✔	
G1	Gradient 5-10% longer than 50m			✔		
G1i	Increased Risk, Gradient 5-10% longer than 50m				✔	
G2	Gradient >10% longer than 50m				✔	
G2i	Increased Risk, Gradient >10% longer than 50m					✔
S1	Bend radius <500m – carriageway with one-way traffic			✔		
S1i	Increased Risk, Bend radius <500m – carriageway with one-way traffic				✔	
S2	Bend radius <500m – carriageway with two-way traffic				✔	
S2i	Increased Risk, Bend radius <500m – carriageway with two-way traffic					✔

Site Category	Threshold
Non-event	0.35
Bend or gradient	0.40
Junction or crossing	0.30
Roundabout	0.50

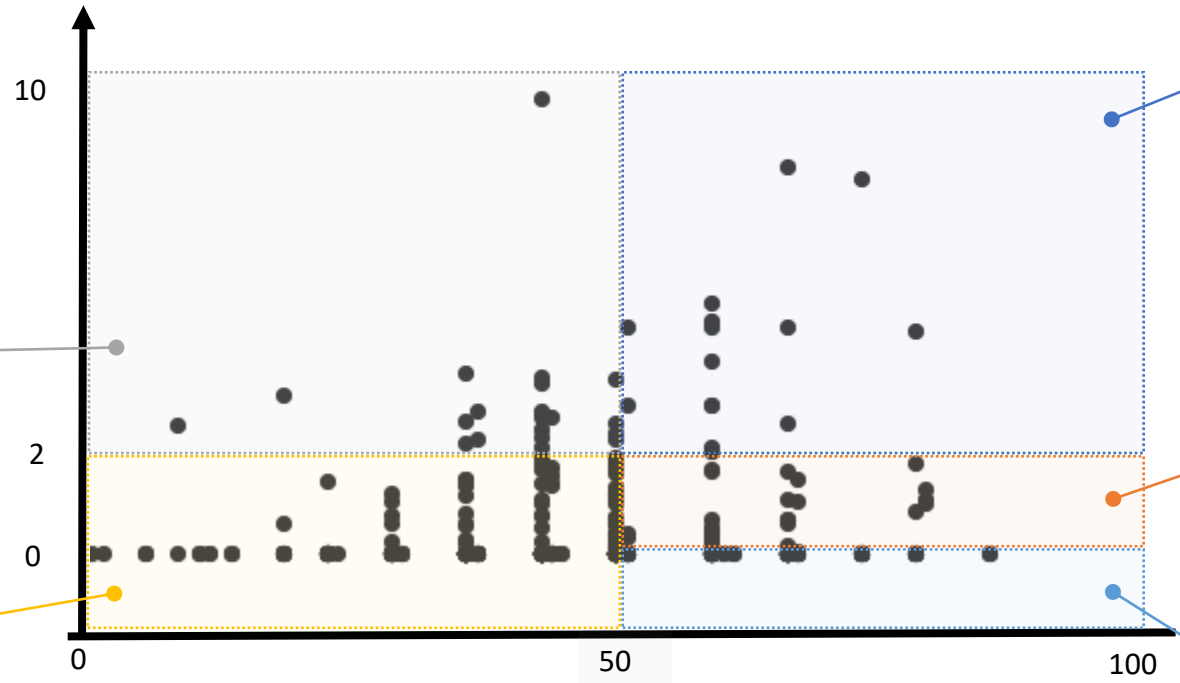
- **Significant differences** compared with current table

Trends incorporated into a new approach to prioritisation

The LASR Approach

Theoretical benefit vs cost of treatment (BCR)

(Skid resistance data, trends and thresholds)



Priority 1
High predicted benefit

Priority 2
Lower predicted benefit

Priority 3
Preventive maintenance

Priority 4
Review policy

Priority 5 Low justification

Relative likelihood of wet collisions (RL)

(Observed collision history)

Trial application - DCC 2020 SCRIM data

(**892 sites** - baseline 24% wet for lengths with high skid resistance)

The LASR Approach

27 sites

Prioritised by BOTH methods

34 sites

Prioritised by the NEW method and NOT by the current method

- 16 non event
  (23 collisions, 61% wet)
- 18 roundabouts
  (23 collisions, 35% wet)

210 sites

Prioritised by the CURRENT method and NOT by the new method

- 188 junctions / crossings
  (736 collisions, 18% wet)
- 19 non event
  (78 collisions, 14% wet)
- 2 roundabouts
  (8 collisions, 25% wet)
- 1 bend / gradient
  (3 collisions, 0% wet)

621 sites

Rejected by BOTH methods

Implications for implementation

With the changes in thresholds, the proposed approach will:

- Reduce the number of sites needing investigation
- Target treatments at the sites more likely to deliver safety benefits
    - Prioritise roundabouts
    - De-prioritise junctions, including pedestrian crossings
- Require lower skid resistance (except for roundabouts)
    - Different treatments may be possible

Based on Local Authority data

- **Provides evidence to support a risk-based approach to asset management**

But, a significant change from current approach

- **Requires a cautious approach**

Next steps

Dissemination:

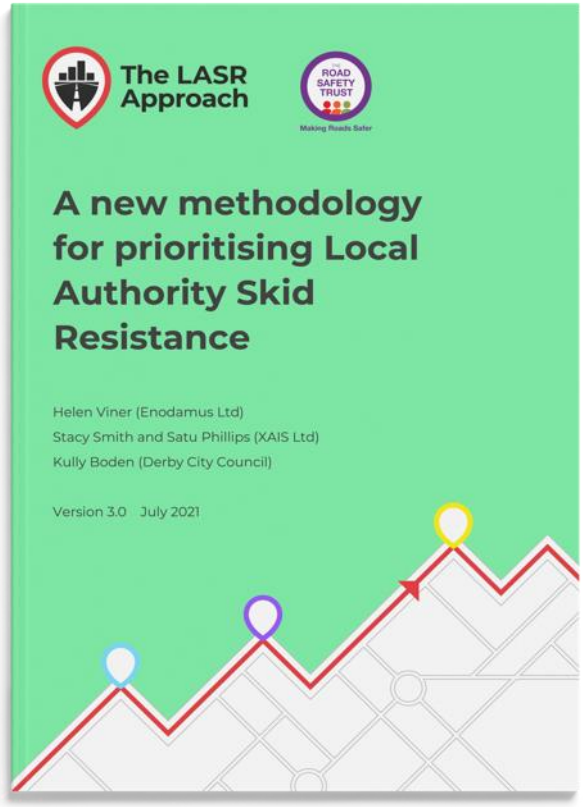
- Make report and methodology available
- Develop new Annex to CS 228 for local authority skid resistance

Pilot implementation:

- Treat selected sites under current and new approach
- Monitor outcomes
- Assess whether predicted benefits are achieved in practice

Expand dataset and develop existing study:

- Improve data on roundabouts
- Increase granularity of analysis, esp. different junction types
- Improve traffic data



What does it mean for Asset Management Practitioners?

- Evidence base bespoke to our network
- Methodology easily implemented
- Supports a risk based approach as recommended in WMHI
- Reduces overhead of investigating low risk sites
- Reduces wet collisions by focusing on the most effective interventions
- Interventions fit for purpose and delivers appropriate service levels
- Use materials appropriate to maintenance hierarchy
- Helps set the right balance for spending on roads and other assets / services
- Essential when managing finite budgets

Thank You

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Send an enquiry
via the project website https://www.lasr-approach.org/

Creating a new brand

The LASR Approach

The
LASR
Approach

Your road to data-driven decisions

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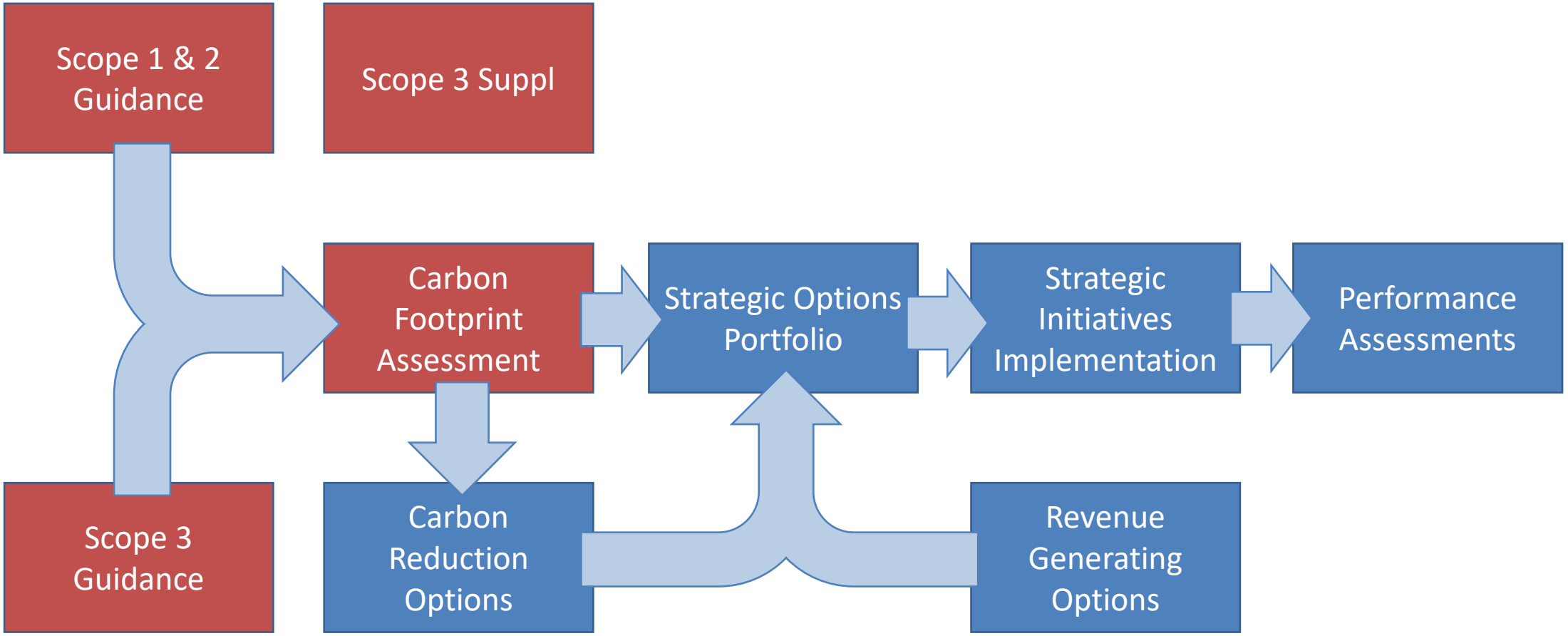
Strategic Portfolio: Net Zero Carbon

Simon Wilson, FHRG & Proving

Strategic Portfolio Development & Tracking

Sharing Learning: Sector Innovations & Change

Future Highways Research Group



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Benchmarking Club

Progress Update & Early Indications

Andy Perrin, FHRG & Proving

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Preparing for COP26 & Next FHRG Workshop

Simon Wilson, FHRG & Proving

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Session Close & Next Workshop

Future Highway Research Group