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ASSOCIATION OF DIRECTORS OF ENVIRONMENT, ECONOMY, PLANNING & TRANSPORT (ADEPT)

PROVING SERVICES

Carbon Leadership Programme: Spring 2026 Update

ADEPT Carbon Leadership Programme

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1 Executive Summary

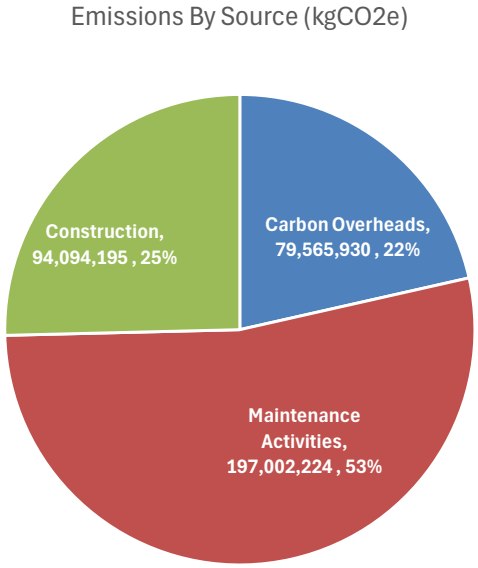
The Carbon Leadership Programme (CLP) was launched in June 2025 as a three-year, DfT funded programme managed by ADEPT and delivered by Proving Services, with peer reviews and knowledge sharing through the Future Highways Research Group (FHRG). It aims to establish (a) the carbon footprints and carbon distributions of Local Highways Authorities (LHAs) and (b) the scale of carbon best practice being adopted across the English local roads sector. It is open to all 153 English LHAs.

As of February 2026, around 60 LHAs are engaged, of which twenty-one have completed the assessments to date. This report captures the insights and early learning from these 21 authorities, which represent ~13.7% of eligible LHAs. The insights offered in this report should be considered in the context of the sample size. A further report will be published in late summer 2026, reflecting updated findings and conclusions based on the larger number of LHAs that will then have completed the programme.

Key early messages include:

- **Larger LHAs and FHRG members have enrolled and actively participated in the programme.** This reflects the scale of resources available. Although there is no financial cost for participation, smaller authorities sometimes struggle to find the available time for staff.
- **The data collected to date provides a robust source of information for services analysis and benchmarking.** Initially, benchmarks have been used to illustrate comparative carbon emissions by spend, network length and population. Over time more granular benchmarking will be available, enabling comparisons across similar authority types and different activities.
- Early **Carbon Best Practice Assessment (CBPA)** results show total LHA scores ranging from **34 to 69** (Requires Improvement to Good), with **Operational Activities** commonly the strongest dimension.
- Early Carbon Footprint Assessment (CFA) results show **a median of 10,890,052 kgCO2e (10,890 tCO2e) of emissions** for the 2024/25 reporting year. This is lower than the original research assessment of 12,662,881 kgCO2e.
- Total emissions for the completed assessments are illustrated in Figure 1:

Figure 1: Total Emissions By Source



- **Overall, confidence scores for the CFA assessment are medium-high** (with an average score of 74.6 out of 100). Confidence scores are currently flat weighted and for some LHAs confidence scores are much lower than the mean. Future assessments can be weighted by the scale of emissions.

- The main delivery constraint remains **data acquisition and verification**, particularly supply-chain data (contractor days, plant use, materials) and **cost data**, with iterative validation cycles typically required.
- **The programme is actively promoted** to all LHAs by ADEPT and the FHRG. In addition, a number of ADEPT's corporate partners have promoted the programme to their clients.
- The programme represents the **first national assessment of the carbon impact of local roads maintenance and construction.**
- Across all areas of both assessments, **we are identifying exemplars of good practice**. As more authorities complete the programme, this information will be collated and shared with the sector in Summer 2026.

Next steps focus on increasing completion rates, strengthening data quality and consistency, and converting early learning into practical exemplars that can be adopted across the local roads sector.

2 Background and context

Local Highways Authorities (LHAs) are responsible for the planning, maintenance, and operation of England's local roads network. The local roads sector faces a persistent challenge: carbon measurement and management approaches have historically been fragmented, with differences in boundaries, assumptions, data sources, reporting cycles, and calculation methods. This has resulted in duplicated effort, errors, limited ability to identify and avoid greenwash, and a lack of reliable carbon performance data for benchmarking and decision-making at local, regional and national levels.

The Carbon Leadership Programme (CLP) was established to address these barriers by improving the uniformity, transparency, and practicality of carbon assessment and carbon management across the local roads sector. It is delivered through the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) / Proving partnership, informed by the Future Highways Research Group (FHRG) Carbon Research Programme (2020–2024) and the long-running FHRG Value for Money (VfM) Benchmarking Club.

The CLP is a three-year, Department for Transport (DfT) funded programme running from May 2025 to May 2028. Over the programme lifecycle, each participating LHA completes a baseline Carbon Footprint Assessment (CFA) and a Carbon Best Practice Assessment (CBPA) once, with LHAs prioritised in phases to achieve an early, statistically meaningful dataset and to enable iterative improvements to tools and guidance.

For DfT, the programme provides (a) a consistent view of the scale of local roads emissions by highways function and intervention type, (b) evidence of progress towards best practice carbon management, and (c) robust data to support planning, reporting, prioritisation of future funding, and targeted sector support. For LHAs and their partners, it provides a practical baseline, comparative benchmarks, and a structured route to identify and share effective improvement actions. Initially, benchmarks have been used to illustrate comparative carbon emissions by spend, network length and population. Over time, more granular benchmarking will be available, enabling comparisons across similar authority types and different activities.

The CLP was designed in direct response to the sector issues identified through prior research and trials, including:

- **Fragmented approaches to carbon accounting (boundaries, assumptions, data sources, and calculations).**
- **Duplicated effort across multiple supply chains and organisations.**
- **Variable data quality, particularly for supply chain (Scope 3) emissions.**
- **Lack of reliable, recognised emission factors for key highways materials and activities.**
- **Limited benchmark ability, reducing the usefulness of carbon data for investment decisions and programme targeting.**

Within the DfT-funded scope, the programme is delivered as a single integrated process comprising:

- **Programme awareness, communications, and administration.**
- **Carbon Footprint Assessments (CFA) for whole-service emissions baselining.**
- **Carbon Best Practice Assessments (CBPA) for carbon management maturity and improvement planning.**
- **Learning capture and best practice sharing across the sector.**

As of February 2026, around 60 LHAs are engaged, of which twenty-one have completed the assessments to date. This report captures the insights and early learning from these 21 authorities, which represent ~13% of eligible LHAs. The insights offered in this report should be considered in the context of the sample size. A further report will be published in late summer 2026, and thereafter biannually, reflecting updated findings and conclusions as more authorities complete the programme.

3 Programme Goals

The CLP is open to all 153 English LHAs, comprising:

- **21 county councils.**
- **33 London boroughs including the City of London.**
- **36 metropolitan borough councils.**
- **63 unitary authorities.**

The overarching aims and goals of the programme are:

1. **Establish the current carbon footprint (emissions) for each in-scope LHA.**
    a. Using the CFA toolset and a streamlined methodology evolved from the Carbon Calculation & Accounting Standard (CCAS) guidance.
2. **Determine each LHA's current performance in terms of best practice carbon management.**
    a. Using the CBPA toolset and an assessment factor set that has been specifically tailored for the local roads sector.
3. **Provide comprehensive benchmarking data.**
    a. Including the carbon footprints for LHA services and functions.
    b. Using best practice assessments to compare progress to net zero.
        i. Benchmarks can be developed by deriving a 'representative' estimate of the carbon impacts of LHA activities based on the collected data. Benchmarks like this are useful because they allow LHAs to estimate carbon impacts of activities even without having detailed contextual information, making them less resource intensive and more accessible.
4. **Identify, and share between LHAs, the actions and business changes being implemented by LHAs to reduce their carbon emissions.**
    a. Agreeing and recording a prioritised list of carbon management improvements and carbon reduction initiatives with LHA leadership teams.
    b. Guiding LHAs toward effective carbon reduction options and away from greenwash and failed initiatives.
    c. Informing future procurements to ensure best practice is embedded within future contracts.
5. **Aggregate the individual LHA assessments to provide a carbon footprint for local roads maintenance and construction schemes for the target reporting year (April 2024 to March 2025).**
    a. To enable better local and central planning, targeted funding, and sector resources coordination.
6. **Establish a carbon baseline from which LHAs can plan, monitor, report, and benchmark progress towards net zero.**
    a. Ensuring knowledge sharing and optimised investments, sector wide.

4 Methodologies and processes

4.1 Process overview

The CLP is delivered as a repeatable, low-burden assessment process designed to be accessible to all LHAs while producing consistent, benchmarkable outputs. It combines LHA-led self-assessment (using standard Excel proformas) with Proving-led quality assurance, analysis, and workshop-based review and certification. Two assessments are completed for each participating authority: (1) the Carbon Footprint Assessment (CFA) and (2) the Carbon Best Practice Assessment (CBPA).

4.2 Engagement, onboarding, and training

Programme communications and engagement are led by ADEPT (supported by Coast Communications) alongside the FHRG network. Participation is voluntary and LHAs are invited in planned phases, with scheduling managed by ADEPT and Proving. Participating LHAs receive briefing packs, proforma workbooks, and guidance. Proving delivers group and one-to-one training sessions, primarily online, to support completion and ensure consistent interpretation of questions and data requirements.

4.3 LHA self-assessment using proforma workbooks

Each LHA completes two standard Microsoft Excel 365 proforma workbooks (no macros or internet connections).

The CBPA considers current performance in terms of carbon management across 61 factors (see Appendix B) spanning the following seven dimensions, which together encompass the majority of highways activities:

- Corporate & Service-Specific Carbon Policies
- Provider Management
- Premises and Sites
- Staff and Contractors
- Vehicles and Plant
- Functions and Activities (Operations)
- Construction (Major Projects)

LHAs undertake a self-assessment, using a detailed scoring guide (Appendix C), to determine their current performance against each factor and opportunities for improvement.

The CFA proforma captures whole-service activity data (quantities and confidence) across defined highways functions and intervention types, plus service ‘carbon overheads’ (Appendices D and E). Emission factors are not required from the LHA.

Completion of the pro formas is usually led by a member of the highways service in partnership with relevant colleagues from other service areas, in particular any corporate carbon reduction team, and where relevant the main contractor.

4.4 Submission, data import, and validation cycles

Completed proformas are returned to Proving for import and processing. Proving undertakes a range of quality assurance tests:

- **Data gap identification and filling.**
  - Through follow-up meetings with LHAs and their supply chain (contractors), or,
  - Where data gaps cannot be closed, mid-range values may be applied using comparable LHAs, with the confidence rating set accordingly.
- **Range and sensitivity checking,**
  - Ensuring all submitted responses fall within expected parameters.
  - Using follow-up meetings to clarify any responses that appear inconsistent or anomalous.

- **Cross-checking the assessments.**
    - Checking a claim or result correlates with the carbon footprint assessment.

This validation typically requires multiple cycles (initial submission, QA checks, and one or more correction cycles).

4.5 Calculation and analysis (CFA and CBPA)

Following validation:

- CFA: Proving imports the CFA proforma data into the CFA Toolkit to apply emission factors (including FHRG-developed composite factors where required), calculate kgCO2e at item, function, and whole-highways service levels, and prepares charts and summaries.
- CBPA: Proving imports CBPA data into the Value Analyser toolkit to calculate weighted scores, confidence, and opportunity measures, and prepare analytics by dimension and factor, including benchmarking against the emerging dataset.

4.6 Reporting, review, and certification workshops

Provisional LHA reports are produced and shared in advance of a Review, Certification & Improvement workshop. Workshops are attended by Proving, the participating LHA's senior officers (and relevant colleagues), and peer reviewers drawn from the FHRG community. Outputs are reviewed and challenged to confirm they represent a fair reflection of the LHA's current emissions profile and carbon management performance. Following agreement, results are marked as 'certified' and any prioritised improvement actions are captured both for the LHA and for wider learning and sharing.

4.7 Benchmarking datasets and DfT reporting

Pre-certification ('provisional') datasets are uploaded to the cloud benchmarking database. Data is also converted to common formats (e.g., CSV) to support analysis in tools such as Excel and Power BI. Following review meetings and once any further data is processed this provisional data is overwritten with the final, certified dataset. DfT receives six-monthly returns as an Excel workbook containing the dataset (including applied factors and calculated outputs) and an additional report summarising emerging findings and learning. Future reports will also include best practice identified in respect of carbon management improvement and emissions reduction initiatives.

4.8 Continuous improvement and governance

The programme is overseen by a Steering Group (Project Board) and managed through a Working Group comprising ADEPT, Coast Communications and Proving representatives. Monthly Working Group reviews address operational delivery, quality issues, and planned improvements. Quarterly Steering Group (Project Board) reviews comprise the Working Group and DfT representatives and provide direction, monitor risks, and agree any changes to process, scope, or toolsets within the programme's fixed-cost constraints.

4.9 Post-assessment analysis, improvements and embedding

Following completion, LHAs can download and use the CFA Toolkit and Value Analyser to embed ongoing assessment, reporting, and benchmarking within their organisations. Post-programme tool use and associated online data storage costs are borne by participating authorities, with programme data retained in the cloud for a period to be agreed with DfT after programme completion.

Several enhancements have been identified and included in the latest proformas based on feedback from the programme participants:

1. **Improved guidance (CBPA and CFA).**
    a. Included in the latest generation of proformas.
    b. Included in the process training.

2. **New assessment factors:**
    a. *Bridges, structures, retaining walls, and geotechnical assets* have been added to the CFA proforma.
    b. Additional *units of measure* have been added for air conditioning equipment fugitive (leaked) emissions.

To ensure consistency between all versions, missing elements have been acquired from early programme participants.

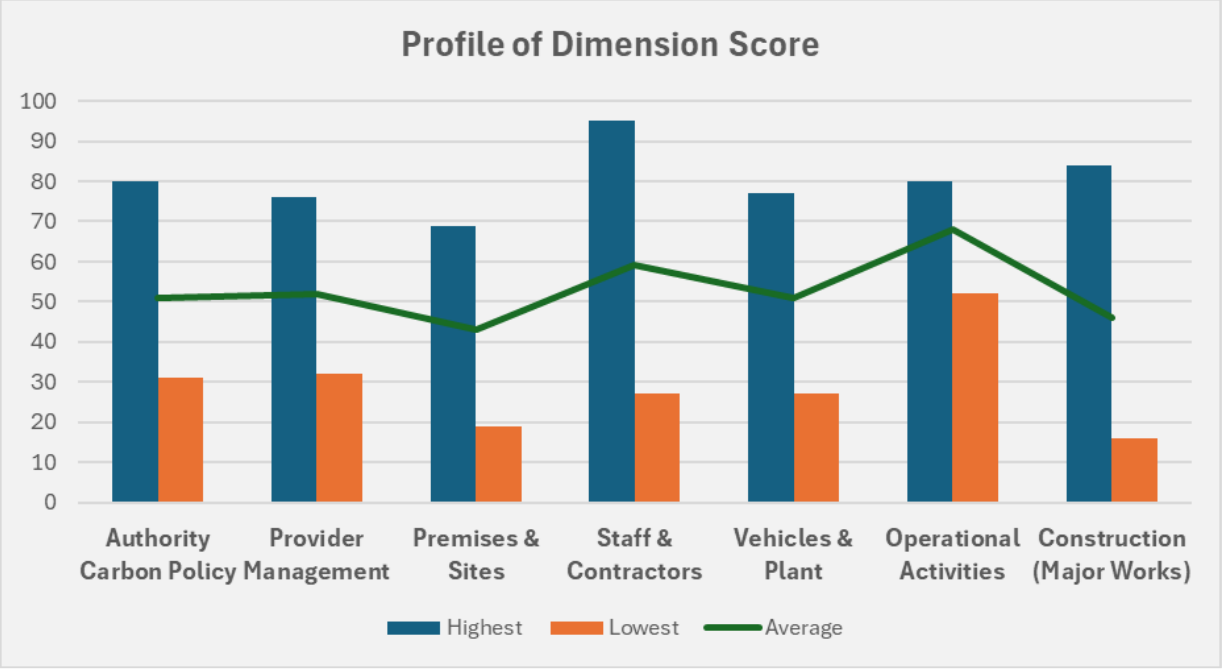
5 Carbon Best Practice Assessment: Analysis Summary

LHAs play an important role in the transition towards a low-carbon future. Their responsibilities span the planning, construction, maintenance, and operation of road networks, all of which contribute significantly to carbon emissions. Establishing clear priorities and initiatives is essential for reducing the environmental impact of transport infrastructure and supporting national and local decarbonisation goals.

The findings from the first 21 authorities that completed the exercise as part of Cohort #1[1] are summarised in Figure 2 below and the text that follows:

5.1 Summary of Findings

Figure 2: Summary Chart of Assessed Dimension Scores



- LHA CBPA scores, to date, range from 34 to 69 (Requires Improvement to Good).
- Reducing carbon emissions is less of a priority for some LHAs than it was a couple of years ago. It is therefore unlikely that any LHA will achieve an overall rating of 'Excellent' across all dimensions, as this would indicate that the reduction of carbon takes precedence over more other operational decisions.
- The FHRG runs the Value for Money (VfM) Benchmarking Club, which assesses and benchmarks each LHA's performance in terms of *economy*, *efficiency*, *effectiveness*, *strategic value* and *stakeholder value*. The VfM Benchmarking Club has been running for 14 years and has amassed a significant dataset. This has been used to compare VfM performance with carbon management performance. Many of the LHAs that have been assessed as 'Excellent' for the dimension *operational activities*, also scored well for

[1] Year 1 is separated into three cohorts to enable the batch processing of participating authorities against the available resources of Proving. Cohort #1 represents the first group in the first year. As future years are completed, additional cohorts are added without resetting the number, i.e., Cohort #9 is the final cohort of the final year.

economy, efficiency and effectiveness in their historic VfM assessments, suggesting that efficient operations deliver better carbon performance. This is also reflected in the carbon footprint assessments.

- Generally, county councils and larger unitary authorities, together with their primary partners, have made more progress to actively reduce their carbon emissions. Smaller authorities sometimes lack the resources, both human and financial, to focus on carbon reduction.
- Success depends on national and local political and executive leadership commitment, cross-partner and sector collaboration, and a willingness to innovate. Ultimately, such efforts not only mitigate climate impacts but also create a more operationally efficient service and a healthier community.
- Cost reduction, improved operational efficiency, and highways asset optimisation are the primary drivers for all LHAs. Achieving these outcomes has the secondary benefit of reducing carbon.
- There is often a lack of available finance to invest in carbon reducing infrastructure (carbon capture and storage, solar power, EV infrastructure). The ability to implement proven new technologies is an increasingly important consideration during the procurement of new highways maintenance / construction contracts.
- Participating authorities are working with their primary providers to achieve carbon reduction whilst realising operational efficiencies. The ambition is to extend this across the supply chain. The willingness and ability of subcontractors to provide carbon data varies considerably.

5.2 Authority / Service Carbon Reduction Policy

This dimension considers the effectiveness of the structures, policies and support in place to identify, develop, and implement carbon reducing initiatives. The key findings for this dimension are summarised below:

- The direction given to LHAs in respect of carbon reduction varies according to the dominant political party.
- However, where there is no adverse impact on service performance, there is still a recognition of the importance of reducing emissions across the executive, highways officers and their key delivery partners.
- Operational efficiency, cost reduction and asset optimisation are the primary drivers for LHAs. Evidence shows that achieving this realises the secondary benefit of carbon reduction.
- Most LHAs produced a Carbon Reduction Strategy, in alignment with their published ‘Net Zero’ policy. Some LHAs continue to update their strategy but others could usefully revisit their strategies to ensure they still reflect current priorities. As noted elsewhere, the governance and scrutiny of carbon reduction activity has declined over recent years.
- Many LHAs now recognise that some of the carbon claims made by suppliers, for example in respect of some lower carbon materials, are misleading and lead to higher whole life carbon costs due to reduced longevity performance. Increasingly, LHAs are assessing any potential carbon reduction initiatives against whole life cost, performance impact and any other associated risks.
- In the charts that follow, the transition to green is where a score of 50, ‘Satisfactory’ is attained.

Figure 3: Authority / Service Carbon Reduction Policy Chart

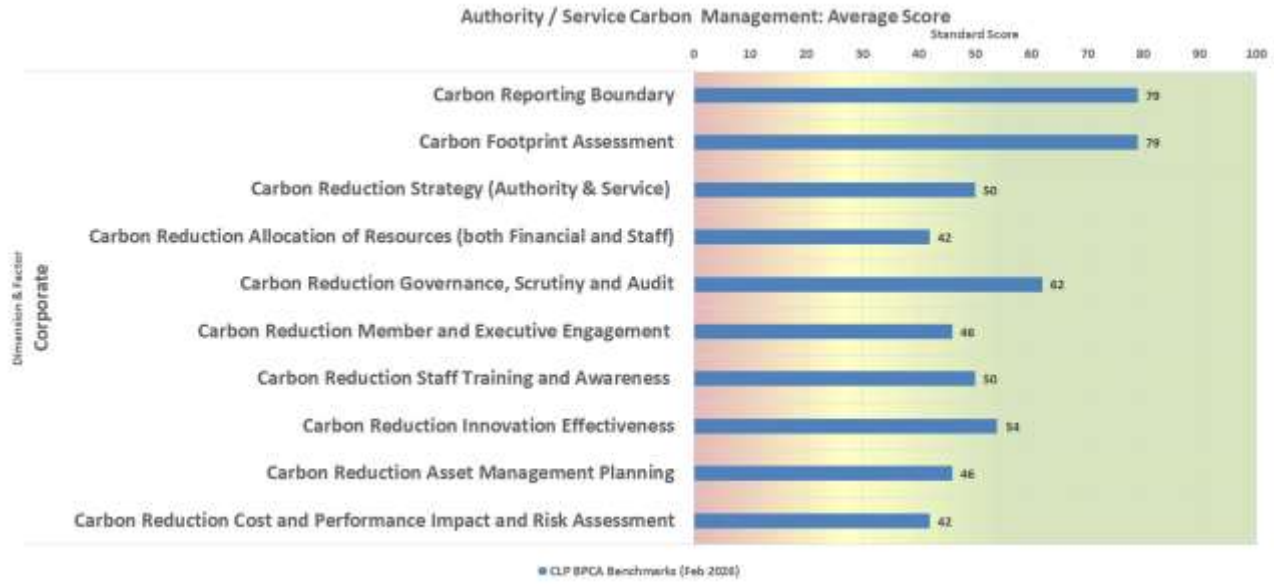


Table 1: Authority / Service Carbon Management (Highest & Lowest Scores)

Factor	Min Score	Max Score
Carbon Reporting Boundary	Requires Improvement (25)	Excellent (100)
Carbon Footprint Assessment	Requires Improvement (25)	Excellent (100)
Carbon Reduction Strategy (Authority & Service)	Requires Improvement (25)	Good (75)
Carbon Reduction Allocation of Resources (both Financial and Staff)	Requires Improvement (25)	Good (75)
Carbon Reduction Governance, Scrutiny and Audit	Requires Improvement (25)	Good (75)
Carbon Reduction Member and Executive Engagement	Requires Improvement (25)	Good (75)
Carbon Reduction Staff Training and Awareness	Requires Improvement (25)	Good (75)
Carbon Reduction Innovation Effectiveness	Requires Improvement (25)	Good (75)
Carbon Reduction Asset Management Planning	Requires Improvement (25)	Good (75)

5.3 Provider Management

This dimension considers the arrangements in place to work with supply chain partners to understand and reduce carbon emissions. The key findings for this dimension are summarised below:

- Most Tier 1[2] (primary) delivery partners appear to be actively working with their respective LHAs to reduce carbon emissions.
- However, this does not always extend down the supply chain. Many smaller providers do not currently have the systems in place to capture and report on carbon outputs.
- The setting of carbon targets and on-going performance monitoring varies between contracts. This is in part due to the historical challenge of obtaining accurate and timely data. More recent contracts generally place a greater emphasis on carbon.

[2] Tier 1 providers are the primary subcontractors within an LHA Term Maintenance Contract (TMC). Tier 1 providers typically manage Tier 2 contractors providing services to the authority. There are three types; (a) maintenance and construction services only, (b) design services only (typically the large consultancies), or (c) integrated (maintenance, construction and design services).

- For materials, Environmental Product Declarations (EPDs) are often presented by supply chain partners as evidence of carbon credentials during procurement / materials selection exercises. However, these are viewed with suspicion by LHAs (and especially LHA-based labs) as they have historically been inaccurate, incomplete, or provide certificates for similar products.
- Carbon reduction management (sustainability) is increasingly a key criterion for provider selection in a competitive tender.
- For larger term-maintenance contracts, LHAs are looking for their Tier 1 provider to provide capital investment in infrastructure (EV charging, solar panels, energy efficient depots) that helps improves operational efficiency whilst reducing carbon emissions.
- As demonstrated by the Live Labs II programme[3], many providers are working closely with LHAs to identify, design, test and report on carbon reducing initiatives. There is recognition that any new technology needs to be assessed within the context of operational performance and whole-life cost.

Figure 4: Provider Management Chart

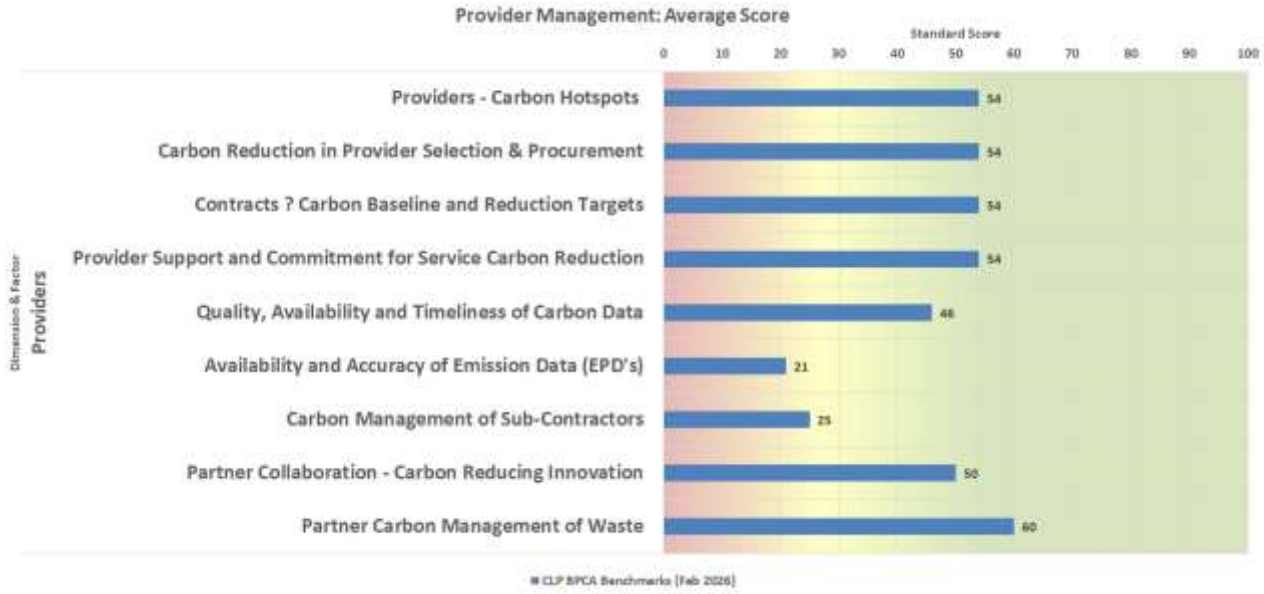


Table 2: Provider Management (Highest & Lowest Scores)

Factor	Min Score	Max Score
Providers - Carbon Hotspots	Requires Improvement (25)	Good (75)
Carbon Reduction in Provider Selection & Procurement	Requires Improvement (25)	Good (75)
Contracts - Carbon Baseline and Reduction Targets	Requires Improvement (25)	Good (75)
Provider Support and Commitment for Service Carbon Reduction	Requires Improvement (25)	Good (75)
Quality, Availability and Timeliness of Carbon Data	Poor (0)	Satisfactory (25)
Availability and Accuracy of Emission Data (EPD's)	Poor (0)	Satisfactory (25)
Carbon Management of Sub-Contractors	Requires Improvement (25)	Good (75)
Partner Collaboration - Carbon Reducing Innovation	Requires Improvement (25)	Good (75)
Partner Carbon Management of Waste	Requires Improvement (25)	Good (75)

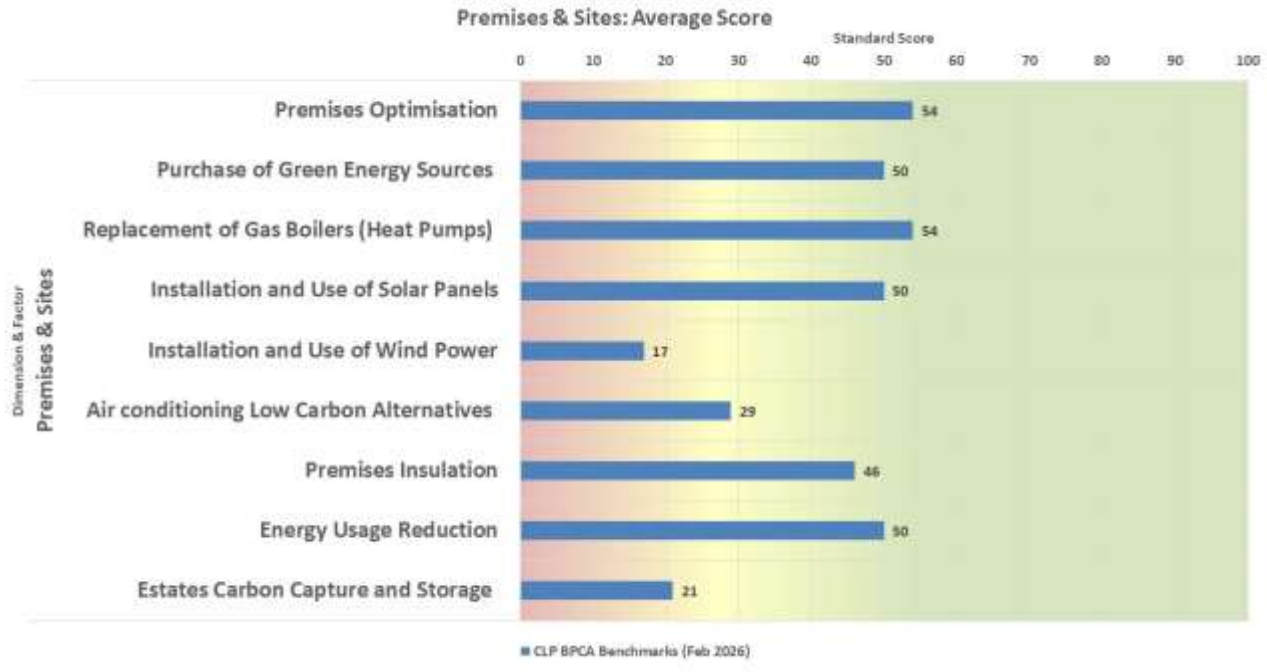
[3] Live Labs II is a £30 million DfT funded programme to test innovative, low-carbon solutions for constructing and maintaining roads across the UK local roads network. It focuses on testing net zero solutions through seven distinct, LHA led projects.

5.4 Premises & Sites

This dimension considers the arrangements in place to understand and minimise the carbon emissions associated with premises and sites. The key findings for this dimension are summarised below:

- Overall, for this dimension many authorities failed to attain a score higher than 'Requires Improvement.'
- Many LHAs have aging depots that are not energy efficient, including poor insulation and the use of older energy dependent technologies, such as gas boilers.
- For the larger LHAs, depots tend to be spread across their geographic area and are not always in locations that facilitate the efficient movement of equipment, materials, waste and the workforce.
- The construction of new depots provides the opportunity to install more eco-efficient technologies such as heat pumps and solar panels. However, this often requires capital investment from the term-maintenance providers[4]. This can be especially challenging mid-contract, as capital investment from providers is ordinarily agreed prior to contract commencement.
- Most LHAs have no plans to explore the potential of wind power, low-carbon air conditioning alternatives or methods to capture and store carbon emissions. Cost is the primary constraint together with a lack of understanding of the technologies and options available.
- Some LHAs have made a policy decision to switch to green energy; others argue that the likely cost increase outweighs any carbon reducing benefits. However, it is an area that most LHAs continue to monitor closely and that can provide significant benefit if legal and infrastructure challenges can be overcome.

Figure 5: Premises & Sites Chart (Highest & Lowest Scores)



[4] A highways **Term Maintenance Contract (TMC)** is a long-term agreement between a highway authority (such as a local council or national agency) and a private contractor to maintain, repair, and manage the road network. These contracts typically cover a wide scope of services—including routine maintenance (potholes, gully cleaning), emergency response, and sometimes smaller capital improvement projects—over a fixed period, often 7 to 20+ years.

Table 3: Premises & Sites (Highest & Lowest Scores)

Factor	Min Score	Max Score
Premises Optimisation	Requires Improvement (25)	Good (75)
Purchase of Green Energy Sources	Requires Improvement (25)	Good (75)
Replacement of Gas Boilers (Heat Pumps)	Poor (0)	Good (75)
Installation and Use of Solar Panels	Poor (0)	Good (75)
Installation and Use of Wind Power	Poor (0)	Satisfactory (25)
Air conditioning Low Carbon Alternatives	Poor (0)	Satisfactory (25)
Premises Insulation	Requires Improvement (25)	Good (75)
Energy Usage Reduction	Requires Improvement (25)	Good (75)
Estates Carbon Capture and Storage	Poor	Satisfactory (25)

5.5 Staff & Contractors

This dimension considers the arrangements in place to understand and reduce carbon emissions associated with staff and contractor travel and working practices. The key findings for this dimension are summarised below:

- Overall performance was mixed although most LHAs are doing something in this area.
- Many LHAs offer incentives for staff to switch to electric vehicles (EVs). This includes charging points (sometimes free of charge) and salary sacrifice schemes towards the purchase of EVs.
- Incentives to encourage staff non-car modes of transport tends to be linked to the size, profile and political priorities of the LHA.
- Nearly all LHAs support and encourage some level of home working, reducing the number of miles commuted by staff.
- Some LHAs actively monitor and aim to reduce the volume of non-essential business travel around the authority area, thereby improving operational efficiency, and reducing costs and carbon emissions. However, many LHAs with clear carbon reduction goals and commitments stated this was still an area for improvement.
- Many larger providers also have EV company car policies. This is again facilitated by EV charging points at highway depots.

Figure 6: Staff & Contractors Chart

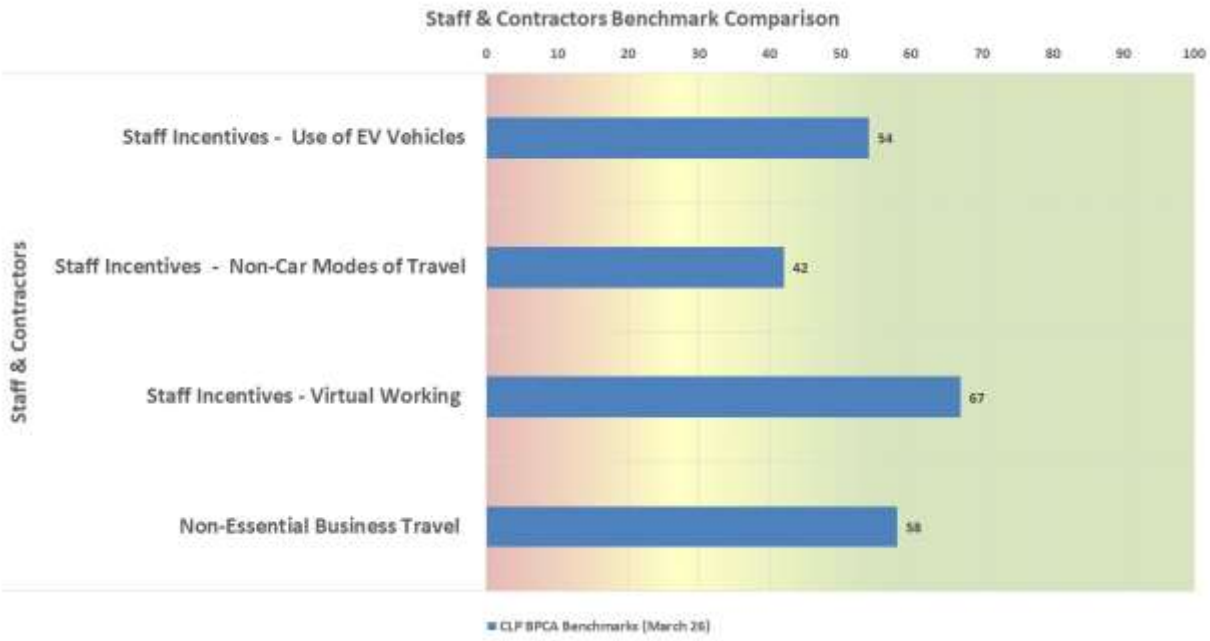


Table 4: Staff & Contractors (Highest & Lowest Scores)

Factor	Min Score	Max Score
Staff Incentives - Use of EV Vehicles	Requires Improvement (25)	Good (75)
Staff Incentives - Non-Car Modes of Travel	Requires Improvement (25)	Good (75)
Staff Incentives - Virtual Working	Requires Improvement (25)	Excellent (100)
Non-Essential Business Travel	Requires Improvement (25)	Good (75)

5.6 Vehicles and Plant

This dimension considers the arrangements in place to ensure carbon is a key consideration in the choice and use of vehicles and plant.

- Many LHAs have made the switch to EV for their light fleet. There is an intention to progress to EV for heavier fleet subject to cost and proven performance and reliability.
- The use of Hydrotreated Vegetable Oil (HVO) and Biofuels varies considerably between LHAs. Some have made a policy decision to use these fuels and are very satisfied with the results. Other LHAs challenge the cost-effectiveness, and/or the actual carbon reducing authenticity of the supply chain for these types of fuel.
- As mentioned, some LHAs (and providers) have invested in the EV infrastructure for depots and offices, supporting an EV fleet and encouraging EV staff transport to work. For others, the initial capital outlay, length of payback and construction logistics are prohibitive.
- Many LHAs are trying to ensure they get maximum value from their highway assets. Many operate a service life extension plan, that aims to prolong the functional use of an asset, thereby reducing cost but also improving their carbon footprint.
- Telemetry tracking and analysis (the automatic transmission of data from vehicle mounted sensors to a central system) is used by many LHAs to monitor activity and reduce inefficiencies through better route planning and reduction of idle time (including vehicles left running), thereby reducing cost and carbon emissions.
- Overall, most LHAs aim to ensure waste minimisation and consider any recycling opportunities when disposing of vehicles and plant.

Figure 7: Vehicles and Plant Chart

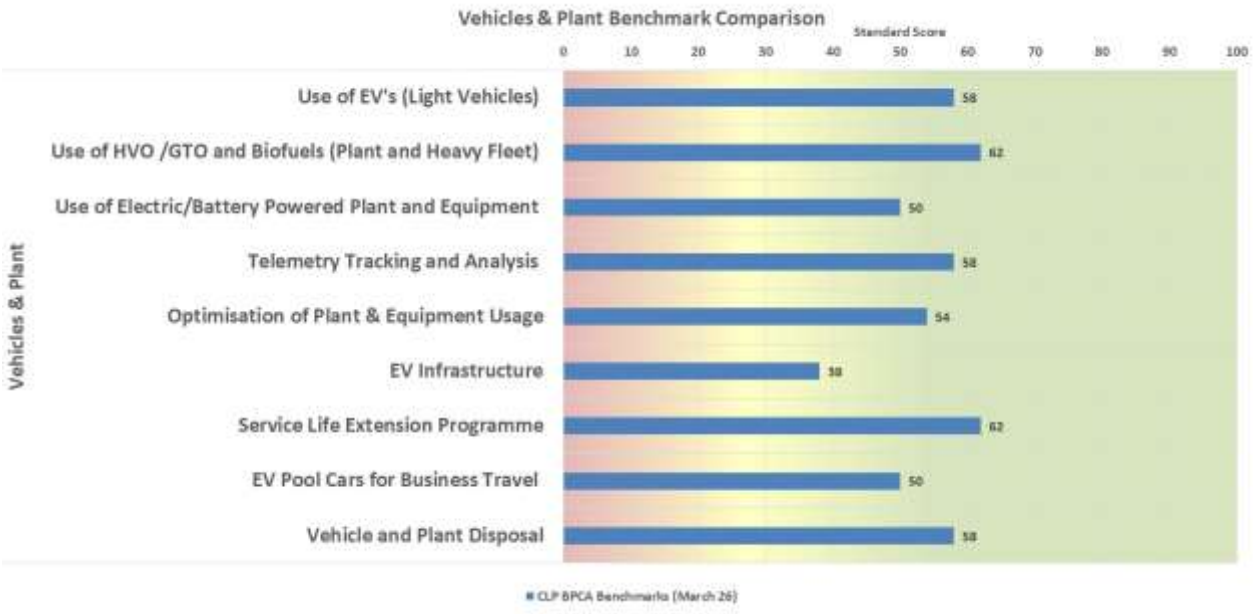


Table 5: Vehicles & Plant (Highest & Lowest Scores)

Factor	Min Score	Max Score
Use of EV's (Light Vehicles)	Requires Improvement (25)	Excellent (100)
Use of HVO /GTO and Biofuels (Plant and Heavy Fleet)	Requires Improvement (25)	Good (75)
Use of Electric/Battery Powered Plant and Equipment	Requires Improvement (25)	Good (75)
Telemetry Tracking and Analysis	Requires Improvement (25)	Good (75)
Optimisation of Plant & Equipment Usage	Requires Improvement (25)	Good (75)
EV Infrastructure	Requires Improvement (25)	Good (75)
Service Life Extension Programme	Requires Improvement (25)	Good (75)
EV Pool Cars for Business Travel	Requires Improvement (25)	Good (75)
Vehicle and Plant Disposal	Requires Improvement (25)	Good (75)

5.7 Operational Activities

This dimension considers the arrangements in place to optimise the efficiency of operational activities, which has consistently proven to reduce carbon. The key findings for this dimension are summarised below:

- This is the highest scoring dimension for most LHAs.
- Over recent years, as LHAs have faced increasing budgetary pressures, the highways service has looked to reduce costs by improving operational efficiency, reducing waste and optimising the highways asset. Achieving this also reduces carbon emissions.
- Most LHAs have now successfully implemented LED replacement and adaptive lighting programmes, reducing energy cost and carbon emissions.
- Most LHAs, together with their primary partners, have implemented policies for reducing waste production and the associated transport costs. The sector continues to adopt processes to recycle and reuse waste generated (e.g. in-situ recycling).
- Increasingly, LHAs are sceptical as to some of the carbon reducing claims made by sector suppliers (materials, services and equipment providers). The work of Live Labs II (CEDR[5]) and authorities' own laboratories provide an important function to test and evaluate the claims of new innovations.
- Most LHAs recognise that AI-based technologies will have a significant impact on the delivery of their highway services. Currently, AI is largely used to realise efficiencies in administrative functions such as customer services, query and report handling and management information reporting. LHAs are keen to explore how new AI technologies will impact and benefit more operational activities such as inspections, work scheduling and actual repairs.

[5] CEDR: The Centre of Excellence for Decarbonising Roads, a Live Labs II initiative.

Figure 8: Operational Activities Chart

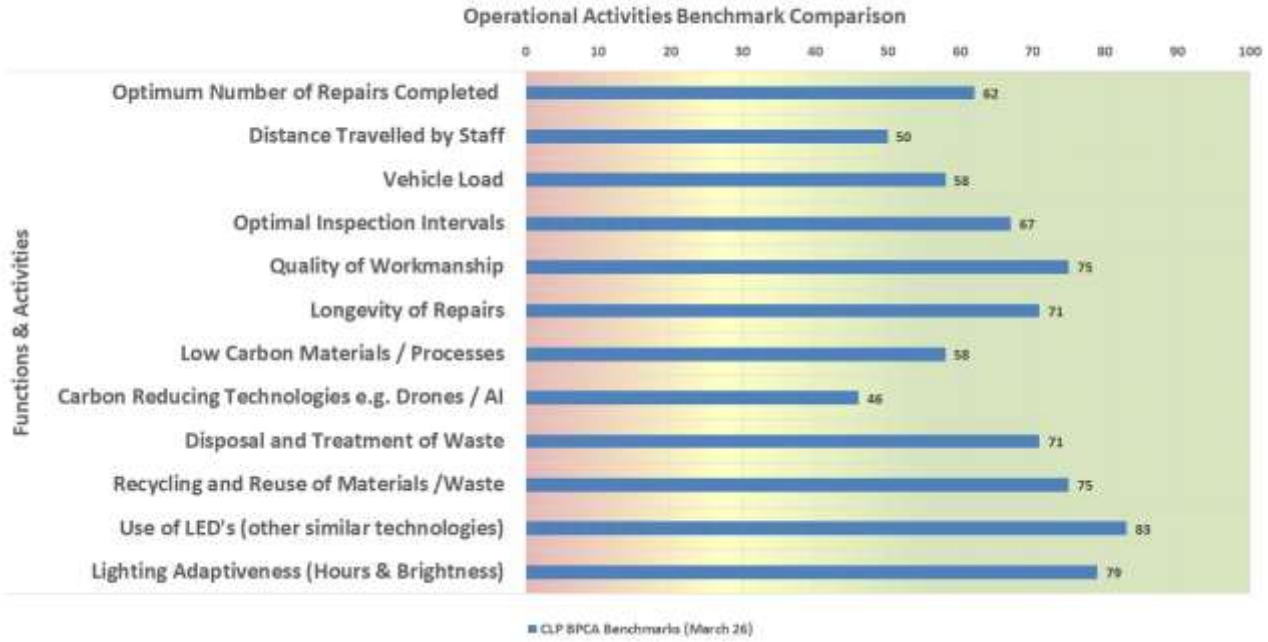


Table 6: Operational Activities (Highest & Lowest Scores)

Factor	Min Score	Max Score
Optimum Number of Repairs Completed	Requires Improvement (25)	Excellent (100)
Distance Travelled by Staff	Requires Improvement (25)	Excellent (100)
Vehicle Load	Requires Improvement (25)	Excellent (100)
Optimal Inspection Intervals	Requires Improvement (25)	Excellent (100)
Quality of Workmanship	Requires Improvement (25)	Excellent (100)
Longevity of Repairs	Requires Improvement (25)	Excellent (100)
Low Carbon Materials / Processes	Requires Improvement (25)	Good (75)
Carbon Reducing Technologies e.g. Drones / AI	Requires Improvement (25)	Satisfactory (5)
Disposal and Treatment of Waste	Requires Improvement (25)	Good (75)
Recycling and Reuse of Materials /Waste	Requires Improvement (25)	Excellent (100)
Use of LED's (other similar technologies)	Good (75)	Excellent (100)
Lighting Adaptiveness (Hours & Brightness)	Satisfactory (50)	Excellent (100)

5.8 Construction

This dimension considers the arrangements for ensuring carbon is a key consideration in the choice, planning, design and delivery of major projects. Although there were individual examples of good practice, most LHAs require some improvement in this area. The key findings for this dimension are summarised below:

- This scope for this dimension includes all schemes included in the Carbon Footprint Assessment. These include, *inter alia*, major infrastructure projects, active transport initiatives, and large resurfacing schemes.
- For schemes that were initiated several years ago, carbon emission reduction and management was not seen as a priority.
- Carbon reduction in major highway schemes is increasingly focused on sustainable materials, low - emission construction equipment, digital technologies, efficient logistics, and whole-lifecycle carbon management (PAS 2080).

- A key criterion for partner selection is their environmental and sustainability credentials.
- Scheme options design and evaluation increasingly includes an assessment of whole-life carbon impact.
- On-going carbon performance monitoring and performance varies between schemes. Many LHAs recognised this was an area for improvement.

Figure 9: Construction (Major Works) Chart

Table 7: Construction (Highest & Lowest Scores)

Factor	Min Score	Max Score
Scheme Options Analysis & Selection	Poor (0)	Good (75)
Scheme Design	Poor (0)	Good (75)
Inclusion / Enabling of Carbon Reducing Initiatives	Poor (0)	Good (75)
Construction Methods & Policies	Poor (0)	Good (75)
Re-use and Repurpose Considerations (Circular Economy)	Poor (0)	Good (75)
Future Decarbonisation Initiatives	Poor (0)	Good (75)
Partner Selection	Poor (0)	Good (75)
Scheme Carbon Management - Performance Targets & Measures	Poor (0)	Satisfactory (50)
Scheme Carbon Monitoring, Reporting & Corrective Measures	Poor (0)	Satisfactory (50))

6 Carbon Footprint Assessment: Analysis Summary

Feedback from all early-completer LHAs reinforces the value of the process and reports. These have enabled LHAs to understand the functions and activities that contribute most to their carbon footprint, and the main opportunities for reducing that footprint in future years.

6.1 Summary of Findings

- Early CFA results indicate the following emissions in the 2024/25 reporting year:
  - **A median of 10,890,052 kgCO2e**.
  - **An average of 17,650,588 kgCO2e.**

  - **A maximum of 59,624,195 kgCO2e.**
  - **A minimum of 2,724,999 kgC02e.**
- The total emissions by source:
  - **Carbon Overheads (direct emissions): 79,565,930 kgCO2e (21%).**
  - **Maintenance Activities: 197,002,224 kgCO2e (53%).**
  - **Construction (major schemes and capital works): 94,094,195 kgCO2e (25%).**
- Within Maintenance Activities, materials-related emissions are 61% of total emissions. The remaining emissions relate to people, energy and waste (or recyclate processing).
- For Construction (major schemes and capital works), a lack of reporting granularity is masking the ratio of materials to resources (including people, energy, waste). However, it is reasonable to assume that the ratio is similar to resurfacing at ≈68%.
- Many LHAs lack comprehensive carbon data in respect of major schemes, but there are some exemplars that do this very well. However, this remains headline reporting using either total cost or total carbon across all schemes within an LHA (i.e., this excludes *bills of materials* and *schedules of resources*).
- None of the LHAs reviewed to-date receive carbon statements for scheme designs.
- As most virgin materials have a significant carbon footprint, choices between virgin materials can make as little as 3% difference to the overall carbon footprint.
- LHAs that use recycled materials can significantly reduce their overall carbon footprint, although the longevity of some of these treatments is yet to be proven in actual operational conditions.

The CFA boundary is detailed in Appendix D. This boundary represents all carbon emissions hotspots within typical highways services.

6.2 Sample Charts & Early Indicators

Figure 10 provides a simple league table view, illustrating the diversity of emissions across the completed assessments:

Figure 10: Emissions by Authority, By Source

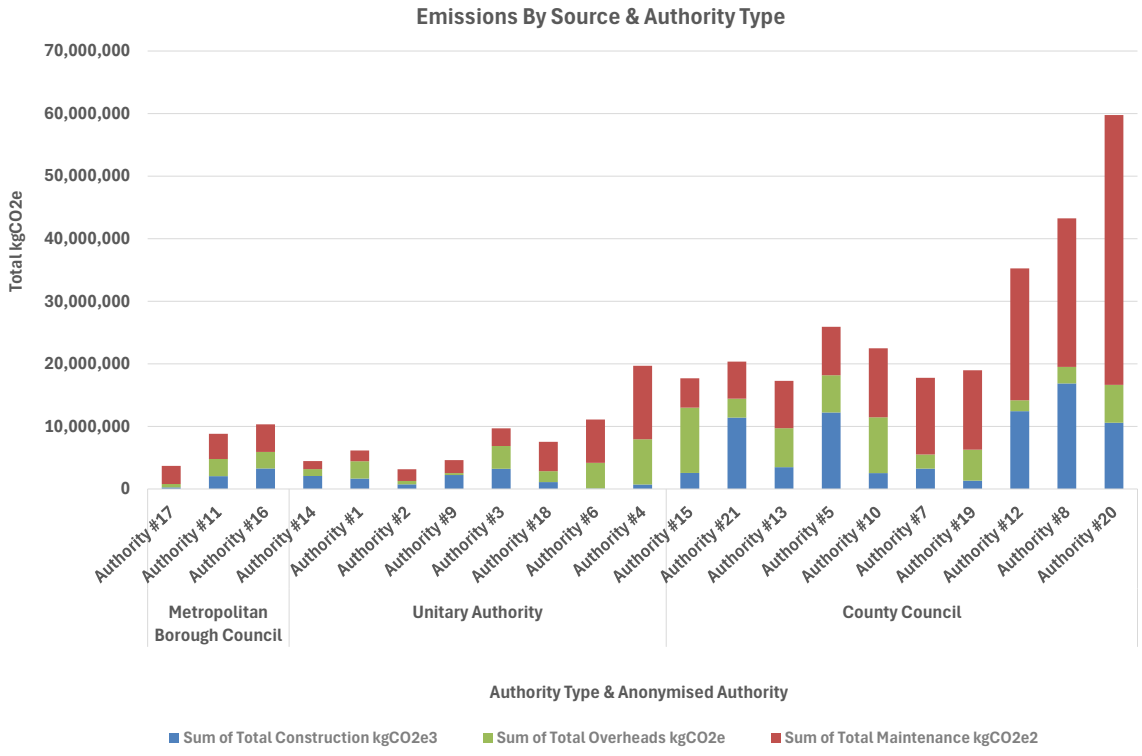


Figure 11 shows the unweighted average percentage of emissions by function. These percentages do vary considerably across individual authorities:

Figure 11: Share of Emissions by Function (All Authorities)

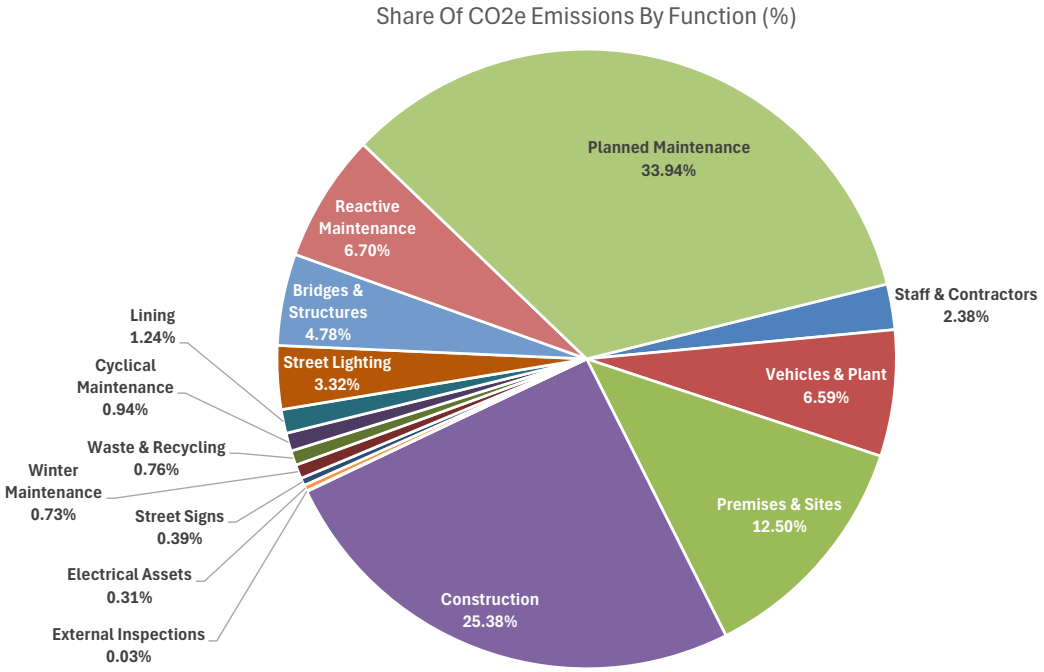
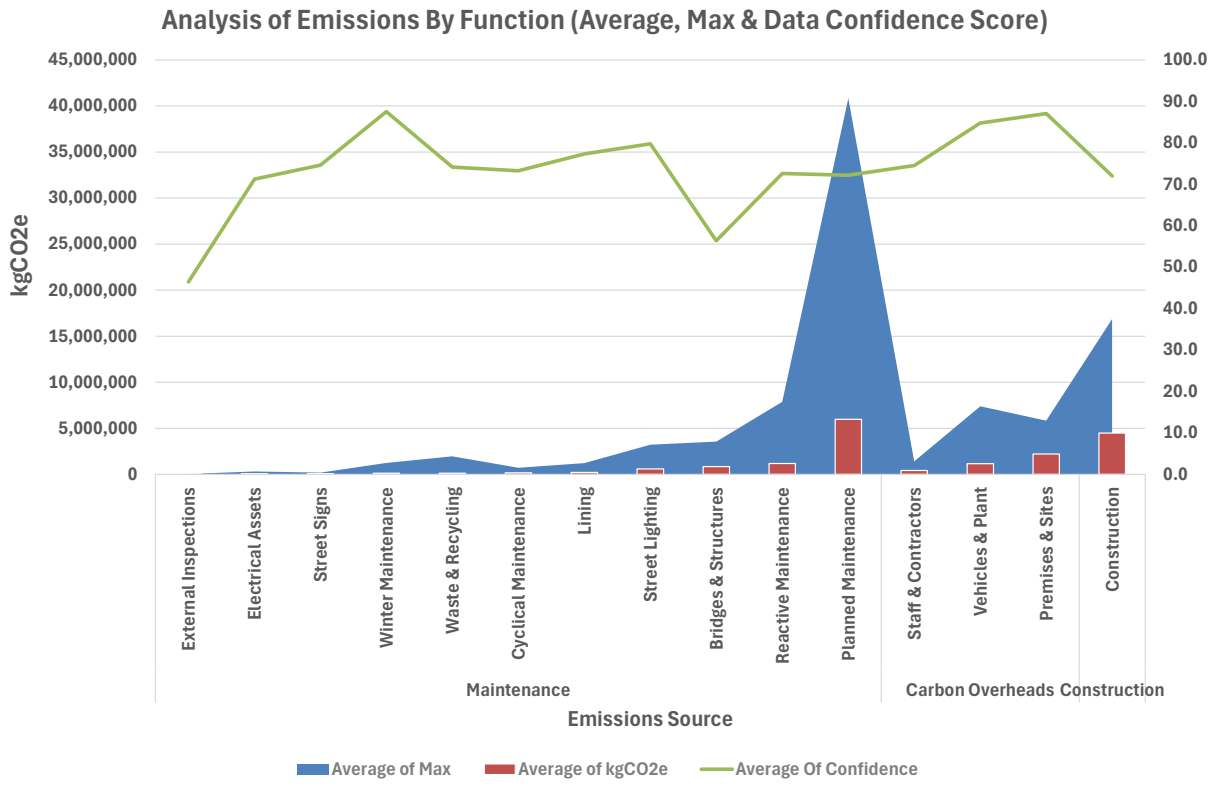


Figure 12 highlights the dominance of Planned Maintenance in emissions (comprising resurfacing, surface dressing, and slurry sealing) and Construction (comprising major schemes and capital works).

Figure 12: Total Emissions by Source & Function



The full table can be viewed in the Excel workbook, but is included here in summary format:

Figure 13: Summary of Row-Level Analysis (v4)

Anonymous Name	Category	Overhead kgCO2e	Maintenance kgCO2e	Construction kgCO2e	Total kgCO2e4	Average Confidence	kgCO2e Per Network km	kgCO2e Per Budget GBP	kgCO2 Per Population
Authority #18	Unitary Authority	1,742,655	197,523	1,099,687	3,039,866	89.4	1,679	0.20	11.9
Authority #2	Unitary Authority	539,319	4,198,972	734,939	5,473,230	89.8	3,504	0.27	17.8
Authority #9	Unitary Authority	305,533	1,972,163	2,220,891	4,498,588	81.7	3,295	0.32	34.7
Authority #1	Unitary Authority	2,768,605	1,853,892	1,675,278	6,297,775	71.5	2,093	1.15	15.6
Authority #14	Unitary Authority	1,114,259	1,348,158	2,068,539	4,530,955	75.9	913	0.13	12.1
Authority #3	Unitary Authority	3,642,315	2,813,634	3,225,397	9,681,346	86.0	4,034	0.28	28.1
Authority #6	Unitary Authority	4,091,970	6,417,290	81,619	10,590,880	82.1	2,791	0.42	27.5
Authority #4	Unitary Authority	7,241,866	11,793,264	705,600	19,740,731	69.9	3,555	0.29	72.0
Authority #17	Metropolitan Borough	535,853	3,398,176	246,851	4,180,879	63.4	4,245	0.31	18.9
Authority #11	Metropolitan Borough	2,724,663	4,024,537	2,056,691	8,805,890	48.1	4,567	0.38	20.3
Authority #16	Metropolitan Borough	2,652,296	4,145,407	3,280,005	10,077,708	74.2	11,504	0.86	29.5
Authority #7	County Council	2,274,965	4,661,286	3,241,465	10,177,716	77.2	1,738	0.16	18.6
Authority #21	County Council	3,030,190	6,409,171	5,990,689	15,430,050	82.8	2,255	0.35	24.7
Authority #19	County Council	4,924,481	8,821,001	1,342,950	15,088,432	70.9	1,423	0.16	17.2
Authority #13	County Council	6,245,598	7,589,108	3,480,484	17,315,190	74.9	1,179	0.30	18.4
Authority #15	County Council	10,436,493	4,844,248	2,551,316	17,832,057	68.6	2,354	0.20	55.6
Authority #10	County Council	8,912,465	14,884,168	2,546,837	26,343,471	65.7	5,165	0.18	21.7
Authority #5	County Council	5,946,343	11,004,004	12,223,005	29,173,352	57.8	2,232	0.25	35.8
Authority #12	County Council	1,744,284	28,682,014	12,441,350	42,867,648	77.7	3,085	0.37	55.8
Authority #8	County Council	2,649,232	24,937,597	16,869,454	44,456,283	72.7	3,271	0.35	66.4
Authority #20	County Council	6,042,543	42,988,906	10,592,746	59,624,196	86.9	5,670	0.28	49.6
	Sum	79,565,930	196,984,520	88,675,794	365,226,244				
	Median	**2,768,605**	**4,844,248**	**2,546,837**	**10,590,880**	**74.9**	**3,085**	**0.29**	**24.7**
	Average	3,788,854	9,380,215	4,222,657	17,391,726	74.6	3,360	0.34	31.1
	Min	305,533	197,523	81,619	3,039,866	48.1	913	0.13	11.9
	Max	10,436,493	42,988,906	16,869,454	59,624,196	89.8	11,504	1.15	72.0

6.3 Process Review

- **Gathering data is difficult for LHAs.**
  - There are 208 fixed user-completed fields and 504 data points[6] across 15 service areas and functions, plus, a variable number of table entries.
  - Some supply chain partners do not have and/or cannot readily obtain some data.
    - Contractor days, vehicle and plant usage data, and material types (where applicable).
  - There are data gaps around costs.
    - Strong resistance from supply chain partners.
    - As the process is not mandated, costs have not been included.
- **Data analysis and verification typically require three-plus cycles to complete.**
  - Initial data submissions + range and sensitivity checking + data gaps and error corrections.
  - Some assessments include the use of "sector averages" for one or more factors.
    - With low confidence levels.
- **Even with simple assessment proformas, the process is resource intensive in the context of teams that are often already working at full capacity.**

6.4 Initial CFA Dataset

The "CLP CFA Data (Q1 2026).xlsx" workbook contains a summary of the first 21 cleaned and verified assessments. This workbook enables DfT to create pivot tables and pivot charts from the anonymised source data.

[6] Including calculated fields and looked-up values.

Each assessment includes the following fields:

- **Assessment level attributes.**
  - **Anonymised name.**
  - **Authority type.**
  - **Authority category.**
  - **Budget / expenditure (reporting year).**
  - **Network length.**
  - **Served population size.**
- **Data elements (fields for each assessed item).**
  - Quantity.
  - Adjustment multiplier.
  - **Confidence.**
  - Emission factor.
  - Local emission factor (not used in reporting).
  - **Total kgCO2e.**
  - Additional fields (function specific).
- **Totals per source / function.**
  - **Total kgCO2e.**
  - Function cost (not completed by LHAs).
  - kgCO2e per £ (not available).
  - **Average confidence (simple average).**

The initial workbook includes the **highlighted** fields for each LHA. Future models can include any field required for data modelling by DfT.

The data is provided in two source tables:

- **Chart Data** (the main data set)
- **Data_By_Function** (the aggregation of data by highways function).
  - Linked to the Chart Data table.

Both tables can be filtered and sorted. There are no external data dependencies, and all LHA names are redacted in compliance with the agreement with the participating authorities.

7 CLP Progress against plan (delivery and outputs)

7.1 Participation and completions (to date)

- The programme was launched in June 2025. As of February 2026, 55 LHAs have formally signed up to the programme, which is at the lower end of the projected numbers of between 50 and 75 for the first year of the programme.
- 21 cleaned and verified CFAs were included in the analysis subset used for this report. Since then, a further 14 authorities have completed the programme. The remaining 20 LHAs are progressing well in completing their respective assessments.
- To date, 5 authorities that initially engaged with the programme, have withdrawn or postponed to year 2. The reason provided was insufficient internal resource available to collect the data.
- The initial training sessions achieved a high sign-up rate (~70%). However, the latter sessions, involving mainly metropolitan authorities, have had a lower sign-up rate (~20%). Again, the main reason provided was lack of available resource to complete the assessment.
- For year 2 of the programme, updated communications, including user case studies, have been produced, that emphasise the value and benefits of participation in the CLP programme. Changes to the CLP excel proformas will also simplify data collection, whilst maintaining data integrity. The CLP delivery

team will also provide additional support as required. Peer recommendation and further endorsement from the DfT and ADEPT should also help increase future participation.

7.2 Key delivery outputs completed and in progress

- **LHA briefings, training materials, and orientation materials**; proforma workbooks and guidance (CFA + CBPA).
- **16 training sessions** (group and one-to-one support where required) aligned to the "keep it simple" approach (Excel proformas).
- **Data import, range checking, gap analysis, and iterative corrections**; report preparation and review/certification workshops supported by peer reviewers.
- **Benchmarking datasets** building and "report pack" outputs for review and refinement.
  These are the combined, anonymised datasets for all completed and cleaned assessments which will be shared with DfT with pivot table functionality to enable further analysis of data.

8 Issues, risks, and mitigations

The key risks (anticipated and emergent) and proposed mitigations are summarised in Table 8:

Table 8: Key Programme Risks

Issue / risk	Impact	Current mitigation	RAG Post mitigation
Stakeholder engagement (non-mandated participation)	Slower throughput; weaker early statistical confidence	DfT & ADEPT messaging; emphasise operational efficiency/VfM co-benefits; peer influence via FHRG.	**Red**
Data quality & availability (esp. supply chain)	Errors and delays; variable completeness	Addressed through increased handholding and guidance by Proving.	**Amber**
Cost data gaps and supplier resistance	Limits emissions-per-GBP analytics at scale	Clarify expectations; explore optional/aggregated cost reporting approaches; consider future incentives/mandating routes.	**Amber**
Resource constraints (LHA-side and delivery-side)	Limits Phase I monthly capacity	Phased delivery model; automation/accelerators; targeted support for bottleneck fields. Simplify self-assessment proformas for future cohorts.	**Green**
Changing policy/priorities reduce carbon salience	Reduced momentum and investment appetite	Position CLP as evidence base for efficient service design and robust procurement; maintain service-leader relationships.	**Amber**
DfT RAG report has increased LHA caution where data is shared with DfT.	Increasing LHA hesitation for participating in the programme.	Assure anonymity for all provided datasets.	**Amber**

The overarching risk remains LHA engagement combined with the accuracy and completeness of submissions. As the programme is already providing essential data across a range of dimensions**, we consider it is important for DfT to consider future incentives and / or mandating participation.**

9 Forward plan (next reporting period)

- Over the next six months, increase the total volume of completed and certified assessments through the remainder of Cohort # I.
- Implement targeted process refinements suggested in the report pack (e.g., burden-reduction options for major schemes reporting where appropriate) while maintaining consistent boundaries for benchmarking.
- Collate and publish exemplars of good practice for sector sharing (target Summer 2026 in current materials).
- Refresh this “early insights” report in Summer 2026, with a materially larger sample.

10 Appendix A: Case Study: Central Bedfordshire Council

Kim Harper, Efficiency & Programme Manager at Central Bedfordshire Council, shares the experience of being the first Local Authority to complete ADEPT's Carbon Leadership Programme and reflects on the obvious and the more unexpected benefits of taking part.

The need for accurate carbon emissions measurement and reduction strategies is widely discussed across the sector yet very few local authorities are actively involved in acquiring helpful and instructive data.

I found out about the Carbon Leadership Programme at the Future Highways Research Group (FHRG) Summer meeting and registered for the introductory session to discover more. As a local authority, we already worked closely with the FHRG on our annual Value for Money (VfM) assessment, which we carry out jointly with our term service contractor, MGroup.

Understanding the value of these insights for our continuous improvement activity, we saw the Carbon Leadership Programme as an opportunity for progress and development that really didn't require a great deal of discussion. The benefits of better understanding our current carbon standing were obvious because we knew that any constructive changes would bring with them additional positive outcomes.

As a programme funded by the Department for Transport, we also understood the inherent significance in being involved in a national project. Working alongside other local highway authorities undertaking the same instruction and guidance, has been incredibly informative and valuable.

The Carbon Leadership Programme consists of two modules:

- **The Carbon Footprint Assessment, and,**
- **The Best Practice Carbon Assessment.**

Both required extensive collaboration with different departments across the organisation, bringing together teams who would usually have limited interaction.

The collaborative element of the programme has helped to facilitate joint working between Highways and our colleagues in Sustainability, Estates, HR and Active Travel, allowing us to understand the impact of how each small piece of the puzzle can come together to create the opportunity for larger, more impactful change.

It was a testament to this collaborative effort of our teams across the authority that we were the first within the initial cohort of the programme to submit both sets of required evidence. Beyond our internal work, a key benefit of the programme was the network created between our fellow participants across other local authorities.

Working within a cohort and bound by the same deadline, underscored the importance of sharing knowledge and experiences to benefit others. Although very different in geographical location and structure, our network had shared goals and the support we've gained and been able to offer in return, has been an incredibly rewarding and positive aspect of the experience.

As a peer reviewer, these are connections that we will continue to foster and develop, and we hope that our learning from the modules helps other authorities embarking on the programme as part of future cohorts.

In terms of practical application and output, the Carbon Leadership Programme provides two reports as well as certification on completion of the self-assessment and data input. The reports detail actions and next steps that will help us focus on improving our score going forward, with scientific evidence to build into our sustainability plans.

The key themes that have been highlighted through our participation will be built into our Continuous Improvement and Sustainability Plan so that carbon reduction is embedded in our service planning and policies. Like any local authority, time and funding limitations often dictate action and resources. This means that it has been crucial for us to demonstrate the efficiencies that can be achieved as a primary result of the programme.

For many authorities, carbon reduction will not be the essential driver for change, rather, measurable and valuable efficiencies in time spent and financial outlay will be the most important factors.

Undertaking the two modules within the ADEPT Carbon Leadership Programme delivers the clarity, perspective and information to achieve both.

11 Appendix B: Best Practice Carbon Assessment: Scorecard

ID	Dimension	Factor Name	Weighting
100	Corporate	**Corporate / Service Carbon Policy**	
101	Corporate	Carbon Reporting Boundary	50
102	Corporate	Carbon Footprint Assessment	75
103	Corporate	Carbon Reduction Strategy (Authority & Service)	100
104	Corporate	Carbon Reduction Allocation of Resources (both Financial and Staff)	75
105	Corporate	Carbon Reduction Governance, Scrutiny and Audit	50
106	Corporate	Carbon Reduction Member and Executive Engagement	75
107	Corporate	Carbon Reduction Staff Training and Awareness	50
108	Corporate	Carbon Reduction Innovation Effectiveness	75
109	Corporate	Carbon Reduction Asset Management Planning	75
110	Corporate	Carbon Reduction Cost and Performance Impact and Risk Assessment	100
200	Providers	**Purchased Goods and Services / Provider Management**	
201	Providers	Providers - Carbon Hotspots	100
202	Providers	Carbon Reduction in Provider Selection & Procurement	75
203	Providers	Contracts – Carbon Baseline and Reduction Targets	75
204	Providers	Provider Support and Commitment for Service Carbon Reduction	100
205	Providers	Quality, Availability and Timeliness of Carbon Data	75
206	Providers	Availability and Accuracy of Emission Data (EPD's)	50
207	Providers	Carbon Management of Sub-Contractors	75
208	Providers	Partner Collaboration - Carbon Reducing Innovation	75
209	Providers	Partner Carbon Management of Waste	100
300	Premises & Sites	**Premises & Sites Carbon Reduction**	
301	Premises & Sites	Premises Optimisation	75
302	Premises & Sites	Purchase of Green Energy Sources	100
303	Premises & Sites	**Use of Green Technologies**	
304	Premises & Sites	Replacement of Gas Boilers (Heat Pumps)	75
305	Premises & Sites	Installation and Use of Solar Panels	50
306	Premises & Sites	Installation and Use of Wind Power	50
307	Premises & Sites	Air conditioning Low Carbon Alternatives	50
308	Premises & Sites	Premises Insulation	100
309	Premises & Sites	Energy Usage Reduction	75
310	Premises & Sites	Estates Carbon Capture and Storage	50
400	Staff & Contractors	**Staff & Contractors Carbon Reduction**	
401	Staff & Contractors	Staff Incentives – Use of EV Vehicles	75
402	Staff & Contractors	Staff Incentives – Non-Car Modes of Travel	75
403	Staff & Contractors	Staff Incentives – Virtual Working	75
404	Staff & Contractors	Non-Essential Business Travel	50
500	Vehicles & Plant	**Vehicles & Plant Carbon Reduction**	
501	Vehicles & Plant	Use of EV's (Light Vehicles)	100

502	Vehicles & Plant	Use of HVO /GTO and Biofuels (Plant and Heavy Fleet)	100
503	Vehicles & Plant	Use of Electric/Battery Powered Plant and Equipment	75
504	Vehicles & Plant	Telemetry Tracking and Analysis	50
505	Vehicles & Plant	Optimisation of Plant & Equipment Usage	75
506	Vehicles & Plant	EV Infrastructure	100
507	Vehicles & Plant	Service Life Extension Programme	75
508	Vehicles & Plant	EV Pool Cars for Business Travel	75
509	Vehicles & Plant	Vehicle and Plant Disposal	75
600	Functions & Activities	**Functions & Activities Carbon Reduction**	
601	Functions & Activities	**Work Scheduling**	
602	Functions & Activities	Optimum Number of Repairs Completed	100
603	Functions & Activities	Distance Travelled by Staff	100
604	Functions & Activities	Vehicle Load	75
605	Functions & Activities	Optimal Inspection Intervals	75
606	Functions & Activities	Quality of Workmanship	75
607	Functions & Activities	Longevity of Repairs	100
608	Functions & Activities	**Use of Low Carbon Technologies**	
609	Functions & Activities	Low Carbon Materials / Processes	100
610	Functions & Activities	Carbon Reducing Technologies e.g. Drones / AI	50
611	Functions & Activities	**Waste Management**	
612	Functions & Activities	Disposal and Treatment of Waste	100
613	Functions & Activities	Recycling and Reuse of Materials /Waste	100
614	Functions & Activities	**Street Lighting and Electrical Assets.**	
615	Functions & Activities	Use of LED's (other similar technologies)	100
616	Functions & Activities	Lighting Adaptiveness (Hours & Brightness)	100
700	Construction (Major Works)	**Construction (Major Works) Carbon Reduction**	
701	Construction (Major Works)	Scheme Options Analysis & Selection	100
702	Construction (Major Works)	**Scheme Design**	
703	Construction (Major Works)	Inclusion / Enabling of Carbon Reducing Initiatives	75
704	Construction (Major Works)	Construction Methods & Policies	100
705	Construction (Major Works)	Re-use and Repurpose Considerations (Circular Economy)	75
706	Construction (Major Works)	Future Decarbonisation Initiatives	50
707	Construction (Major Works)	Partner Selection	75
708	Construction (Major Works)	Scheme Carbon Management - Performance Targets & Measures	75
709	Construction (Major Works)	Scheme Carbon Monitoring, Reporting & Corrective Measures	75

The scoring thresholds are:

- **Excellent (scores 100).**
- **Good (scores 75).**
- **Satisfactory (scores 50).**
- **Requires Improvement (scores 25).**
- **Poor (scores 0 – zero).**

Scores are awarded based on the scoring guidance outlined in Appendix C.

Appendix C: Best Practice Assessment: Scoring Guidance

11.1 Corporate / Service Carbon Reduction Policy

ID	Factor	Scoring Guidance
100	**Corporate / Service Carbon Reduction Policy**	
101	**Carbon Reporting Boundary**	**Excellent:** The service has defined and agreed the scope of services, functions and activities that comprise the boundary for a carbon assessment. This includes all providers and key sub-contractors involved in the delivery of the service.
	An assessment of the clarity and comprehensiveness of definition of the scope of the carbon boundary and organisational responsibilities	**Good:** The service has defined and agreed the scope of services, functions and activities that comprise the boundary for a carbon assessment. This includes all the key providers involved in the delivery of the service.
		Satisfactory: The service has a broad definition and agreement as to the scope of services, functions and activities that comprise the boundary for a carbon assessment.
		Requires Improvement: The service has only a broad understanding of the scope of services, functions and activities that should comprise the boundary for a carbon assessment. This definition needs to be confirmed and agreed with key stakeholders.
		Poor: The service has not yet considered the scope of services, functions and activities that should comprise the boundary for a carbon assessment.
102	**Carbon Footprint Assessment**	**Excellent:** A detailed carbon emission assessment has been completed within the last 12 months which establishes the current carbon emission position of the service. This includes a detailed analysis of those activities with an anticipated/known high carbon emission profile. The carbon assessment will be repeated and reported annually.
	An assessment of progress with determining a current and comprehensive carbon emission position.	**Good:** A high-level carbon emission assessment has been completed within the last 18 months which establishes the current carbon emission position of the service. There has been specific focus on anticipated /known activities with a high carbon emission profile. The carbon assessment will be repeated at least every two years.
		Satisfactory: A high-level carbon emission assessment has been completed within the last 2 years which establishes the (near) current carbon emission position of the service.
		Requires Improvement: A carbon emission assessment of the service has not yet been completed. However, it is the intention of the service to undertake such a review within the next 18 months.
		Poor: The service currently has no plans to undertake a carbon emission assessment (detailed or high level).
103	**Carbon Reduction Strategy (Authority & Service)**	**Excellent:** The authority has a comprehensive and up-to-date strategy for carbon emission reduction, with specific reference to the service. This includes targets and milestone delivery dates. The authority actively monitors progress against the strategy and where possible, takes the appropriate action to ensure the targets are achieved. The authority is making good progress against its stated targets. The service / authority takes an active interest in the carbon emission reduction activities and strategies of the sector and explores successful initiatives within its own carbon emission reduction strategy,
	An assessment of the quality of the carbon reduction strategy, the extent of alignment between service and corporate goals and progress against milestones and targets. To establish whether a	**Good:** The authority has a comprehensive and up-to-date strategy for carbon emission reduction, with specific reference to the service. This includes targets and milestone delivery dates. The authority actively monitors progress against the strategy and where possible, will take the appropriate action to ensure the targets are achieved. The authority is starting to make progress against its stated targets.

	separate service carbon reduction policy has been produced that is aligned to the corporate policy,	**Satisfactory:** The authority has a high-level strategy for carbon emission reduction, with specific reference to the service. This includes broad targets and milestone delivery dates. The strategy is reviewed and updated at least once every two years.
		Requires Improvement: The authority has a high-level strategy for carbon emission reduction. However, there is no /minimal reference to the service. The strategy, and associated reduction targets and milestones, require review and a potential update.
		Poor: The authority has no carbon emission reduction strategy.
104	**Carbon Reduction Allocation of Resources (both Financial and Staff)**	**Excellent:** The service has dedicated resources, supported by the necessary level of funding, to achieve its carbon emission reduction targets.
	An assessment of whether sufficient resources, both financial and people, have been allocated to by the service and/or authority to reduce carbon emissions.	**Good:** The service has allocated sufficient resources (both financial and people) to achieve its carbon emission reduction targets.
		Satisfactory: The service has identified staff with specific responsibility for overseeing carbon emission reporting and the supervision of any carbon reducing initiatives. This responsibility is typically included within existing roles.
		Requires Improvement: The service recognises the importance of allocating resource to reducing carbon emissions. To-date, no specific resources have been allocated.
		Poor: No specific resources have or are likely to be allocated to supporting the reduction of carbon emissions.
105	**Carbon Reduction Governance, Scrutiny and Audit**	**Excellent:** The authority and service have the necessary formal governance and scrutiny arrangements in place for the monitoring and reporting of progress with the carbon emission reduction strategy and associated targets. There is a documented record of the impact of the governance procedures.
	An assessment of the robustness and efficacy of the governance arrangements in place for the monitoring and reporting of progress with authority and service carbon emission reduction strategies.	**Good:** The authority and service have the necessary formal governance and scrutiny arrangements in place for the monitoring and reporting of progress with the carbon emission reduction strategy and associated targets.
		Satisfactory: The service has informal governance and scrutiny arrangements in place for the monitoring and reporting of progress with carbon emission reduction strategies and associated targets. This may include agenda items and discussion within executive and management meetings.
		Requires Improvement: The service has no governance and scrutiny arrangements in place for the monitoring and reporting of progress with the carbon emission reduction strategy and associated targets. However, it is recognised that more formal governance structures need to be put in place and there are robust plans to do so.
		Poor: It is not considered necessary to put in place any governance or monitoring structures to help ensure the reduction of service carbon emissions.
106	**Carbon Reduction Member and Executive Engagement**	**Excellent:** The elected members and executive management team are visibly active in supporting and delivering the agreed carbon emission reduction strategy.
	An assessment of how engaged and active elected members and the executive management team are in supporting the carbon reduction strategy.	**Good:** The elected members and executive management team are supportive and engaged with the agreed carbon emission reduction strategy.
		Satisfactory: The elected members and executive management team have agreed the need for a carbon emission reduction strategy and in principle are supportive and engaged. Continued effort and encouragement will be required to ensure the required level of active support is developed and maintained.

		Requires Improvement: Although it is generally recognised that the service requires a carbon emission reduction strategy, there is currently little active engagement by elected members and the executive management team.
		Poor: There is currently no active engagement or support by elected members and/or the executive management team.
107	**Carbon Reduction Staff Training and Awareness**	**Excellent:** Staff understand the carbon reduction objectives of the service and are encouraged and supported to be actively involved and innovative in reducing carbon emissions for all their respective work-related activities and responsibilities.
	An assessment of the extent to which staff understand the carbon reduction objectives of the service and are encouraged to be innovative and actively involved.	**Good:** Staff understand the carbon emission reduction objectives of the service and are encouraged to be actively involved and innovative in reducing carbon emissions across the service.
		Satisfactory: Overall, staff are aware of the importance of reducing carbon emissions within the service and are encouraged to identify possible solutions. However, more structure and awareness training could be introduced to further encourage staff to become actively involved.
		Requires Improvement: Staff could be made more aware of the importance of reducing carbon emissions within the service and encouraged to take a more active role through better staff training and awareness initiatives.
		Poor: Currently staff are not actively encouraged to take a role in reducing carbon emissions. No staff training and awareness initiatives are planned.
108	**Carbon Reduction Innovation Effectiveness**	**Excellent:** The service has a defined and proven process for identifying, developing and testing innovations and initiatives for reducing carbon emissions. The service works with other authorities and the wider sector to identify, test and share the outcomes of innovations and initiatives. There is documented evidence as to the success of this process.
	An assessment of the effectiveness of the structures, policies and support in place to identify, develop, and implement carbon reducing initiatives.	**Good:** The service has a defined and agreed process for identifying, developing and testing innovations and initiatives for reducing carbon emissions. The service monitors the outcomes of initiatives and innovations tested by the other authorities and the wider sector.
		Satisfactory: Although staff/partners are encouraged to identify carbon emission reducing initiatives, there is no formal process for evaluation and testing of such innovations.
		Requires Improvement: More could be done to encourage staff/partners to identify carbon emission reducing initiatives, supported by a defined process for evaluation and testing.
		Poor: There is currently no process for the identification, evaluation and testing of carbon emission reducing initiatives.
109	**Carbon Reduction Asset Management Planning**	**Excellent:** The requirement to reduce carbon emissions is included in all areas of asset management planning and delivery and is fully aligned to the service /authority carbon reduction strategy and associated targets. There is tangible evidence of the outcomes from this focus within asset management planning.
	An assessment of the extent to which carbon emission reduction considerations are embedded within asset management policies, strategies and plans.	**Good:** The requirement to reduce carbon emissions has been considered within the asset management plan and is aligned to the service /authority carbon reduction strategy and associated targets.
		Satisfactory: There is some consideration of the requirement to reduce carbon emissions within the asset management plan, however more specific carbon reduction activities and targets could be included.
		Requires Improvement: The requirement to reduce carbon emissions has not been sufficiently considered within the current asset management plan.

		Poor: The requirement to reduce carbon emissions does not form part of the current asset management plan.
110	**Carbon Reduction Cost and Performance Impact and Risk Assessment**	**Excellent:** All carbon emission reducing initiatives are assessed in detail against the cost and likely impact on service performance. A balanced trade-off between cost, performance and carbon impact is achieved and can be evidenced.
	An assessment of how robustly the potential carbon reduction of new initiatives is assessed against the related cost and impact on service performance.	**Good:** All carbon emission reducing initiatives are assessed against the cost and likely impact on service performance. A balanced trade-off between cost, performance and carbon impact is generally achieved
		Satisfactory: The cost and likely performance impact of any specific carbon emission initiatives are broadly considered before implementation. The subsequent monitoring of actual cost and performance could be improved.
		Requires Improvement: There is insufficient consideration of cost and likely performance impact of any specific carbon emission initiatives before implementation. No subsequent monitoring of cost and /or performance takes place.
		Poor: There is no consideration of cost and likely performance impact of any specific carbon emission initiatives before implementation. No subsequent monitoring of cost and /or performance takes place.

11.2 Purchased Goods & Services / Provider Management

ID	Factor	Scoring Guidance
200	**Purchased Goods and Services / Provider Management Carbon Reduction**	
201	**Providers - Carbon Hotspots**	**Excellent:** A detailed carbon emission assessment of all externally provided services has been completed. A prioritisation schedule and plan for focused emission reduction has been produced and agreed with each relevant provider and is currently being implemented.
	An assessment of the extent to which the service understands which providers generate the largest carbon and has been able to prioritise and focus on critical carbon outputs	**Good:** An assessment has been completed to identify those externally provided services that have a significant carbon emission profile. A prioritisation schedule and plan for focused emission reduction has been produced and agreed with each relevant provider and is currently being implemented.
		Satisfactory: A high-level review has been completed to confirm those externally provided services that it is considered have a significant carbon emission profile. A high-level plan for focused emission reduction has been / is being developed.
		Requires Improvement: The service has only a limited understanding of those externally provided services that are likely to have a significant carbon profile. This will need to be confirmed by a more detailed review and analysis.
		Poor: The service has no useful understanding of those externally provided services that are likely to have a significant carbon profile. There are no plans to undertake a more detailed review.
202	**Carbon Reduction in Provider Selection & Procurement**	**Excellent:** Carbon emission reduction activity and targets is an important criterion in the selection of external providers for major contracts **(primary provider of a key service/ function)**. All providers selected on this basis are closely monitored for actual carbon emission reduction performance.

	An assessment of the extent to which the service prioritises carbon reduction in provider selection.	**Good:** Carbon emission reduction activity and targets is an important consideration in the selection of external providers for major contracts. There is some ongoing monitoring of carbon emission reduction performance.
		Satisfactory: Carbon emission reduction activity is a consideration in the selection of external providers for major contracts. There is occasional monitoring of carbon emission reduction performance.
		Requires Improvement: Carbon emission reduction activity is a minor consideration in the selection of external providers for major contracts.
		Poor: Carbon emission reduction activity is not considered in the selection of external providers for major contracts.
203	**Contracts – Carbon Baseline and Reduction Targets**	**Excellent:** Carbon emission reduction targets are set for all new contracts and existing major contracts. The service seeks to establish a detailed baseline carbon emission position for each contract and monitors performance against agreed targets over the term of the contract. The approach is aligned to the X29 NEC4 clause.
	An assessment of the extent to which carbon baseline and reduction targets are set and monitored for all new contracts.	**Good:** Carbon emission reduction targets are set for all major new contracts. The service seeks to establish a high-level baseline carbon emission position at the start of the contract and monitors performance against agreed targets over the term of the contract.
		Satisfactory: Carbon emission reduction is a performance indicator for major new contracts. However, baseline positions and/or associated reduction targets are only agreed for specific contracts. There is limited monitoring of performance.
		Requires Improvement: The requirement to reduce carbon emission is a high-level objective of any major contract. No baseline positions are established, targets are rarely agreed and performance is not actively monitored.
		Poor: The requirement to reduce carbon emission is not included in any contract.
204	**Provider Support and Commitment for Service Carbon Reduction**	**Excellent:** All major suppliers are committed to working with the authority to achieve the relevant carbon emission reduction targets. There is documented evidence that the providers / service are successfully progressing towards the agreed targets.
	An assessment of the extent to providers are committed to support the service's objectives for carbon reduction.	**Good**: The majority of major suppliers are committed to working with the authority to achieve the relevant carbon emission reduction targets. There is active collaboration and some tangible progress.
		Satisfactory: The majority of major suppliers state they are committed to working with the authority to achieve the relevant carbon emission reduction targets. However, more active collaboration and visible progress could be demonstrated.
		Requires Improvement: Although major suppliers state they are committed to working with the authority to achieve the relevant carbon emission reduction targets, there is little active collaboration and tangible progress to date.
		Poor: There is little / no support or commitment by suppliers to work with the authority to achieve any carbon emission reduction targets.
205	**Quality, Availability and Timeliness of Carbon Data**	**Excellent:** All major suppliers provide accurate, complete and timely carbon emission data. This includes real-time activity carbon data provided by operational systems. The data provided is regularly audited and challenged if there are any concerns.

	An assessment of the quality, availability and timeliness of carbon data provided and the underlying systems, e.g. the use of a real-time carbon emission reporting system.	**Good:** The majority of major suppliers can provide accurate, complete and timely carbon emission data on request. The data provided is reviewed and challenged if there are any concerns.
		Satisfactory: The majority of major suppliers can provide current carbon emission data on request. However, the accuracy and completeness of the data provided cannot always be verified.
		Requires Improvement: The majority of suppliers find it difficult or are unwilling to provide accurate and current emission data.
		Poor: No suppliers currently provide accurate and/or current carbon emission data.
206	**Availability and Accuracy of Product Emission Factors (Tiers 1 & 2)**	**Excellent:** Product emission data for high volume use materials is requested and must be provided by suppliers. EPD data is assessed and any queries as to accuracy and completeness are taken and resolved with the supplier.
	An assessment of the availability and accuracy of product EPD's and the systems in place to ensure they are requested and checked.	**Good:** Product emission data, for high volume use materials, is requested and generally provided by suppliers. Overall, EPD data is assessed as accurate and complete.
		Satisfactory: Product emission data, for high volume use materials, is sometimes requested and generally provided by suppliers. Generally, it has not always been possible to confirm that the data provided is accurate and complete.
		Requires Improvement: Product emission data, for high volume use materials, is rarely requested and/or provided by suppliers. It has not been possible to confirm that any data provided is accurate and complete.
		Poor: Product emission data is never requested and/or provided by suppliers.
207	**Carbon Management of Sub-Contractors**	**Excellent:** All primary contractors have discussed and where possible agreed, carbon emission reduction strategies and reduction targets with their key suppliers. Carbon emission policy is a key consideration in their selection process. The carbon reduction performance of key suppliers (subcontractors) is monitored by the primary contractor.
	An assessment of how robustly primary contractors challenge and manage the carbon output of their sub-contractors, including the agreement of carbon reduction targets.	**Good:** The majority of primary contractors have discussed, and where possible agreed, carbon emission reduction strategies and reduction targets with their key suppliers.
		Satisfactory: Primary contractors have stated that they are working with their key suppliers to try and reduce carbon emissions. However, no formal plans or targets have been agreed.
		Requires Improvement: Primary contractors have had only limited discussions with their key suppliers to try and reduce carbon emissions.
		Poor: Primary contractors have had no discussions with their key suppliers to try and reduce carbon emissions.
208	**Partner Collaboration - Carbon Reducing Innovation**	**Excellent:** All providers are actively encouraged to collaborate with the authority in identifying carbon emission reduction innovations. Many innovations have been developed, implemented and monitored. There is evidence that some collaborations have resulted in a reduction in carbon emissions.
	An assessment of extent to which significant, long-term providers collaborate in identifying, testing	**Good:** All major providers are actively encouraged to collaborate with the authority in identifying carbon emission reduction innovations. A number of innovations have been developed, implemented and monitored.

	and implementing carbon reduction innovations.	**Satisfactory**: All major providers are encouraged to collaborate with the authority in identifying carbon emission reduction innovations. However, to date a limited number of innovations have been developed and implemented.
		Requires Improvement: More effective collaboration could take place between the service and its major providers to identify and implement carbon emission reduction innovations.
		Poor: No/minimal collaboration occurs between the service and its providers to identify and implement carbon emission reduction innovations.
209	**Partner Carbon Management of Waste**	**Excellent:** Primary providers have an established and proven process for disposal and treatment that minimises the level of waste and associated transport costs. This includes the recycling and reuse of materials used. This policy extends to any sub-contractors. The provider can evidence the impact of successful waste management. The providers are encouraged to continually explore opportunities to improve waste management.
	An assessment of extent to which providers' policies for the disposal and treatment of waste, and recycling and reuse of materials align with those of the service and minimise the level of waste and transportation costs.	**Good:** Primary providers have an established and proven process for disposal and treatment that minimises the level of waste and associated transport costs. Where possible, primary providers also aim to recycle and reuse the materials used. The waste management activities are in alignment with the waste management policy of the authority.
		Satisfactory: Primary providers have an established process for disposal and treatment that aims to minimise the level of waste and associated transport costs. Where possible, primary providers also aim to recycle and reuse the materials used. The success of provider waste management is not monitored.
		Requires Improvement: Primary providers could do more to minimise the level of waste, reduce transport costs, and where possible recycle or reuse materials used. Or the waste management policies and processes of primary providers are not fully understood.
		Poor: Primary providers do very little or nothing to minimise the level of waste, reduce transport costs, and where possible recycle or reuse materials used.

11.3 Premises & Sites Carbon Reduction

ID	Factor	Scoring Guidance
300	**Premises & Sites Carbon Reduction**	
301	**Premises Optimisation**	**Excellent:** The service has undertaken a comprehensive analysis to determine the number and location of premises necessary to achieve optimal operational efficiency and effectiveness and maximise utilisation. A robust estates strategy is in place to deliver this configuration and ensure the condition of all premises is of a standard that minimises carbon. Milestones and targets for delivery of the strategy are all being met.
	An assessment of whether the location, number, condition and utilisation of premises is optimal to minimise carbon.	**Good:** The service has undertaken a comprehensive analysis to determine the number and location of premises necessary to achieve optimal operational efficiency and effectiveness and maximise utilisation. An estates strategy is in place to deliver this configuration and ensure the condition of all premises is of a standard that minimises carbon. Milestones and targets for delivery of the strategy are mostly being met.
		Satisfactory: The service is in the process of undertaking the analysis required to determine the number and location of premises necessary to achieve good operational efficiency and effectiveness and maximise

		utilisation. Or the service has completed the assessment but has yet to make the necessary changes to its premises configuration.
		Requires Improvement: The service has limited plans in place to undertake the analysis required to determine the number and location of premises necessary to achieve good operational efficiency and effectiveness. Or the analysis has been completed but there are no plans to make the necessary changes to its premises configuration.
		Poor: The service has no plans in place to undertake the analysis required to determine the number and location of premises necessary to achieve operational efficiency and effectiveness or to make any changes to its premises configuration.
302	**Purchase of Green Energy Sources**	**Excellent:** The service has undertaken a comprehensive review to determine the full potential to source electricity, gas and oil from green sources (including green electricity and biofuels). The necessary strategy and plan is in place to adopt these greener sources, and milestones and targets to deliver the strategy are all being met.
	An assessment of the extent to which electricity, gas and oil are sourced from greener sources, including green electricity and biofuels	**Good:** The service has undertaken a review to determine the full potential to source electricity, gas and oil from green sources (including green electricity and biofuels). Where appropriate, a strategy and plan is in place to adopt these greener sources, and milestones and targets to deliver the strategy are mostly being met.
		Satisfactory: The service has commenced a review to determine the full potential to source electricity, gas and oil from green sources (including green electricity and biofuels). Where appropriate, a plan with associated targets is being developed to adopt these greener sources.
		Requires Improvement: The service has yet to fully explore the potential to source electricity, gas and oil from green sources (including green electricity and biofuels) and to develop any subsequent implementation plans.
		Poor: The service has no current plans to explore the potential to source electricity, gas and oil from greener sources.
304	**Replacement of Gas Boilers (Heat Pumps)**	**Excellent:** The service has undertaken a comprehensive review to determine the full potential to replace gas boilers with heat pumps or other low carbon technologies and has a robust strategy in place to deliver the opportunities identified. Milestones and targets to deliver the strategy are all being met.
	An assessment of the extent of replacement of gas boilers with heat pumps, or other low carbon alternatives.	**Good:** The service has undertaken a review to determine the full potential to replace gas boilers with heat pumps or other low carbon technologies and has a strategy in place to deliver the opportunities identified. Milestones and targets to deliver the strategy are mostly being met.
		Satisfactory: The service has commenced a review to determine the potential of replacing gas boilers with heat pumps or other low carbon technologies. A strategy, with associated targets, will be completed to deliver any opportunities identified.
		Requires Improvement: The service has yet to undertake a review to determine the potential in replacing gas boilers with heat pumps or other low carbon technologies. A strategy, with associated targets, will be produced to deliver any opportunities identified.
		Poor: The service has no plans to undertake a review of the potential in replacing gas boilers with heat pumps or other low carbon technologies.
305	**Installation and Use of Solar Panels**	**Excellent:** The service has undertaken a comprehensive review to determine the full potential to utilise on-site solar panels as an energy source and has a robust strategy in place to deliver the opportunities identified. Milestones and targets to deliver the strategy are all being met.
		Good: The service has undertaken a review to determine the potential to utilise on-site solar panels as an energy source and has a strategy in place

	An assessment of the scale of any on-site installation and use of solar panels as an energy source.	to deliver the opportunities identified. Milestones and targets to deliver the strategy are mostly being met.
		Satisfactory: The service has commenced a review to determine the potential in utilising on-site solar panels as an energy source. A strategy, with associated targets will be completed to deliver any opportunities identified.
		Requires Improvement: The service has plans but is yet to undertake a review to determine the potential in utilising on-site solar panels as an energy source. A strategy, with associated targets will be completed to deliver any opportunities identified.
		Poor: The service has no plans to undertake a review of the potential in utilising on-site solar panels as an energy source.
306	**Installation and Use of Wind Power**	**Excellent:** The service has undertaken a comprehensive review to determine the full potential to utilise on-site wind power as an energy source and has a robust strategy in place to deliver the opportunities identified. Milestones and targets to deliver the strategy are all being met.
	An assessment of the scale of on-site installation and use of wind power as an energy source.	**Good:** The service has undertaken a review to determine the potential to utilise on-site wind power as an energy source and has a robust strategy in place to deliver the opportunities identified. Milestones and targets to deliver the strategy are mostly being met.
		Satisfactory: The service has commenced a review to determine the potential in utilising on-site wind power as an energy source. A strategy, with associated targets, will be completed to implement any opportunities identified.
		Requires Improvement: The service has plans but is yet to undertake a review to determine the potential in utilising on-site wind power as an energy source. strategy, with associated targets, will be produced to implement any opportunities identified.
		Poor: The service has no plans to undertake a review of the potential in utilising on-site wind power as an energy source.
307	**Air conditioning Low Carbon Alternatives**	**Excellent:** The service has undertaken a comprehensive review to determine the full potential to adopt low carbon air conditioning alternatives and has a robust strategy in place to deliver the opportunities identified. Milestones and targets to deliver the strategy are all being met.
	An assessment of the extent of installation and use of low carbon air conditioning alternatives.	**Good:** The service has undertaken a review to determine the potential to adopt low carbon air conditioning alternatives and has a robust strategy in place to deliver the opportunities identified. Milestones and targets to deliver the strategy are mostly being met.
		Satisfactory: The service is undertaking a review to determine the potential to adopt low carbon air conditioning alternatives. A strategy with associated targets, will be completed to deliver any opportunities identified.
		Requires Improvement: The service has plans but is yet to undertake a review to determine the potential in adopting low carbon alternatives as an energy source. A strategy with associated targets, will be produced to deliver any opportunities identified.
		Poor: The service has no plans to undertake a review of the potential in adopting low carbon air conditioning alternatives.
308	**Premises Insulation**	**Excellent:** The service has undertaken a comprehensive review to determine the level and effectiveness of current building insulation and has a robust strategy in place to deliver the opportunities identified. Milestones and targets to deliver the strategy are all being met.
	An assessment of the level and effectiveness of any building insulation.	**Good:** The service has undertaken a review to determine the level and effectiveness of current building insulation and has a strategy in place to optimise this. Milestones and targets to deliver the strategy are mostly being met.

		Satisfactory: The service is undertaking a comprehensive analysis to determine the level and effectiveness of current building insulation and will complete a robust strategy with associated targets to optimise this.
		Requires Improvement: The service has plans but is yet to commence a review to determine the level and effectiveness of current building insulation.
		Poor: The service has no plans to undertake a review to determine the level and effectiveness of current building insulation.
309	**Energy Usage Reduction**	**Excellent:** The service has undertaken a comprehensive review to determine opportunities to reduce energy usage and has a robust strategy in place to deliver these. Milestones and targets to deliver the strategy are all being met.
	An assessment of the level of analysis, planning and subsequent activity to reduce energy usage.	**Good:** The service has undertaken a review to determine opportunities to reduce energy usage and has a strategy in place to deliver these. Milestones and targets to deliver the strategy are mostly being met.
		Satisfactory: The service is undertaking a review to determine opportunities to reduce energy usage and is developing a strategy with associated targets deliver these.
		Requires Improvement: The service has plans but has yet to undertake a review to determine opportunities to reduce energy usage.
		Poor: The service has no plans in place to undertake a review to determine opportunities to reduce energy usage.
310	**Estates Carbon Capture and Storage**	**Excellent:** The service has undertaken a comprehensive review to determine opportunities to maximise carbon capture and has a robust strategy in place to deliver these. Milestones and targets to deliver the strategy are all being met.
	An assessment of the level of analysis, planning and subsequent activity to reduce energy usage.	**Good:** The service has undertaken a review to determine opportunities to maximise carbon capture and has a strategy in place to deliver these. Milestones and targets to deliver the strategy are mostly being met.
		Satisfactory: The service is currently undertaking a review to determine opportunities to maximise carbon capture and is developing a strategy with associated targets to deliver these.
		Requires Improvement: The service has plans but has yet to undertake a review to determine opportunities to maximise carbon capture.
		Poor: The service has no robust plans in place to undertake a comprehensive analysis to determine opportunities to maximise carbon capture.

11.4 Staff & Contractor Carbon Reduction

ID	Factor	Scoring Guidance
400	**Staff & Contractors Carbon Reduction**	
401	**Staff Incentives – Use of EV Vehicles**	**Excellent:** The service has analysed the factors that would encourage staff to use EV or hybrid cars for travel to and from work and has developed and implemented policies to facilitate this, e.g. through provision of EV pool cars, free charging points and other initiatives. The service monitors the impact of its policies and is achieving the majority of targets and milestones set for increasing the number of home-to-work journeys undertaken in EV/hybrid vehicles.
	An assessment of the extent and success of incentives to encourage staff to use EV / Hybrid vehicles to travel to or from work. (e.g.	**Good:** The service has analysed the factors that would encourage staff to use EV or hybrid cars for travel to and from work and has developed and implemented policies to facilitate this, e.g. through provision of EV pool cars, free charging points and other initiatives. The service monitors the

	provision of EV pool cars, free charging points).	impact of its policies and is starting to achieve some of the targets and milestones set for increasing the number of home to work journeys undertaken in EV/hybrid vehicles.
		Satisfactory: The service has started to analyse the factors that would encourage staff to use EV or hybrid cars for travel to and from work and is developing policies to facilitate this, e.g. through provision of EV pool cars, free charging points and other initiatives. The service is also developing targets for increasing the number of home to work journeys undertaken in EV/hybrid vehicles.
		Requires Improvement: The service has not yet started to analyse the factors that would encourage staff to use EV or hybrid cars for travel to and from work, e.g. through provision of EV pool cars, free charging points and other initiatives, but has robust plans in place to do this and to develop the appropriate policies and associated targets.
		Poor: The service has no plans to analyse the factors that would encourage staff to use EV or hybrid cars for travel to and from work, e.g. through provision of EV pool cars, free charging points and other initiatives, or to develop the appropriate policies and associated targets to facilitate this.
402	**Staff Incentives – Non-Car Modes of Travel**	**Excellent:** The service has analysed the factors that would encourage staff to use non-car modes of travel to and from work and has developed and implemented the policies necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options. The service monitors the impact of its policies and is achieving the majority of targets and milestones set for increasing the use of non-car modes of travel.
	An assessment of the extent and success of incentives for staff to use non-car modes of transport (walking, public transport, bicycles, car sharing).	**Good:** The service has analysed the factors that would encourage staff to use non-car modes of travel to and from work and has developed and implemented the policies necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options. The service monitors the impact of its policies and is starting to achieve some of the targets and milestones set for increasing the use of non-car modes of travel.
		Satisfactory: The service has started to analyse the factors that would encourage staff to use non-car modes of travel to and from work and is developing the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.
		Requires Improvement: The service has plans but is yet to analyse the factors that would encourage staff to use non-car modes of travel to and from work and develop the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.
		Poor: The service has no plans to analyse the factors that would encourage staff to use non-car modes of travel to and from work or to develop the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.
403	**Staff Incentives – Virtual Working**	**Excellent:** The service has developed and implemented policies for home and hybrid working that balance business need and operational efficiency with carbon reduction goals. The systems and initiatives necessary to facilitate home working have been put in place. The service monitors the impact of its policies and is achieving the majority of targets and milestones set.
	An assessment of the extent and success of initiatives such as virtual teams meetings to reduce carbon by encouraging home and hybrid working where appropriate	**Good:** The service has developed and implemented policies for home and hybrid working that balance business need and operational efficiency with carbon reduction goals. The systems and initiatives necessary to facilitate home working have been put in place. The service monitors the impact of its policies and is achieving some of the targets and milestones set.
		Satisfactory: The service has started to analyse the factors that would encourage staff to use non-car modes of travel to and from work and is

		developing the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.
		Requires Improvement: The service has plans to analyse the factors that would encourage staff to use non-car modes of travel to and from work and develop the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.
		Poor: The service has no plans to analyse the factors that would encourage staff to use non-car modes of travel to and from work or to develop the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.
404	**Non-Essential Business Travel**	**Excellent:** The service has developed and implemented policies to minimise non-essential business travel. The service monitors the impact of these policies and is achieving the majority of targets and milestones set.
	An assessment of the extent and effectiveness of the policies in place to minimise non-essential business travel.	**Good:** The service has developed and implemented policies to minimise non-essential business travel. The service monitors the impact of these policies and is achieving some of the targets and milestones set.
		Satisfactory: The service has started to analyse the factors that would encourage staff to use non-car modes of travel to and from work and is developing the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.
		Requires Improvement: The service has plans to analyse the factors that would encourage staff to use non-car modes of travel to and from work and develop the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.
		Poor: The service has no plans in place to analyse the factors that would encourage staff to use non-car modes of travel to and from work or to develop the policies and targets necessary to facilitate this, e.g. through better enabling walking, cycling, public transport and car sharing options.

11.5 Carbon Reduction Management of Vehicles and Plant

ID	Factor	Scoring Guidance
500	**Carbon Reduction Management of Vehicles and Plant**	
501	**Use of EV's (Light Vehicles)**	**Excellent:** The policy by the service /authority is to replace all CE light vehicles with EV's. All milestones and targets are being met.
	An assessment of the extent and success of policies for increasing the deployment of EV light vehicles.	**Good:** The service has completed a review of its light fleet and has produced and implemented the business case and policy for CE to EV vehicle replacement. Subject to the respective business case, all new light vehicle purchases will be EV.
		Satisfactory: EVs form an increasing part of the service light fleet and there is a general consensus that where possible, the service should migrate to an EV light vehicle fleet. However, currently CE vehicles are still purchased. An accelerated programme for migration (with associated business case) will be considered.
		Requires Improvement: EVs form a small part of the service light fleet. The majority of light vehicles still purchased are CE. There is no agreed policy to migrate to an EV light fleet.
		Poor: The service has no EVs and will continue to purchase only CE light vehicles.

502	**Use of HVO /GTO and Biofuels (Plant and Heavy Fleet)**	**Excellent:** The policy of the service /authority is to convert all plant and heavy fleet to HVO/GTO and/or Biofuels. The majority of plant and heavy fleet currently use HVO/GTO and/or Biofuels.
	An assessment of the extent and success of policies for increasing the deployment of HVO/GTO heavy fleet vehicles.	**Good:** The service has completed a review of its plant heavy fleet and has produced a business case and policy for the use of HVO/GTO and Biofuels. Subject to the business case and availability, plant and heavy fleet do/ will use HVO/GTO and/or Biofuels.
		Satisfactory: HVO/GTO and Biofuels are used for some of the plant and heavy fleet. There is a consensus that subject to availability and cost, the service should increase its use of HVO/GTO and Biofuels.
		Requires Improvement: HVO/GTO and Biofuels are not currently used for plant of heavy fleet. However, moving forward, it is proposed to explore the performance, cost and availability of these fuels.
		Poor: The service does not and will not, be using HVO/GTO and Biofuels for the foreseeable future.
503	**Use of Electric/Battery Powered Plant and Equipment**	**Excellent:** The policy of the service /authority is that all plant and equipment will be electric or battery powered, subject to a viable product being available. All milestones and targets are being met.
	An assessment of the extent and success of policies for increasing the use of electric and battery powered options for plant and equipment.	**Good:** Subject to the cost, performance and availability of the respective product, the policy of the service/authority is that all plant and equipment purchased will be electric or battery powered. Most milestones are being met.
		Satisfactory: The service has increased its purchase and use of electric/ battery powered plant and equipment. The service is currently developing an agreed policy to encourage and enforce deployment across the service.
		Requires Improvement: The service makes limited use of use of electric/ battery powered plant and equipment with no agreed policy to significantly increase usage. The service has acknowledged the need to develop a robust policy going forward.
		Poor: Other than the occasional item, the service does not, and will not, make use of electric/ battery powered plant and equipment for the foreseeable future.
504	**Telemetry Tracking and Analysis**	**Excellent:** Telemetry is used to ensure all vehicles are tracked and their movements analysed to minimise carbon emission output. This includes driving styles, speeding and idle times. The service has compared its performance with peer authorities and is satisfied it is doing all it can to minimise journeys and optimise routes.
	An assessment of the extent to which telemetry is used to ensure all vehicles are tracked and their movements analysed to reduce unnecessary journeys and optimise the routes taken.	**Good:** Telemetry is used to ensure all vehicles are tracked and their movements analysed to reduce unnecessary journeys, optimise the routes taken and improve driving styles, thereby reducing carbon emissions.
		Satisfactory: Telemetry is used on the majority of vehicles. Some analysis is undertaken to reduce necessary journeys, optimise the routes taken and improve driving styles, however this could be improved and extended to all vehicles.
		Requires Improvement: Telemetry is used on certain vehicles. Limited analysis is undertaken to reduce unnecessary journeys and optimise the routes taken and this could be improved and extended to all vehicles.
		Poor: Telemetry is used on a limited number of vehicles with little useful analysis to reduce unnecessary journeys and optimise the routes taken.

505	**Optimisation of Plant & Equipment Usage**	**Excellent:** Plant and equipment usage is closely monitored to ensure maximum value is derived. (e.g. minimise duplication, plant purchased but not fully used, plant left running). Prompt action is taken to reduce wastage and improve utilisation. New plant or equipment is only purchased with strong business justification,
	An assessment of how effectively the usage of plant is monitored to ensure the maximum value is derived (i.e. to identify plant that is not running or not fully utilised).	**Good:** Plant and equipment usage is monitored to ensure good value is derived. (e.g. minimise duplication, plant purchased but not fully used, plant left running). Action is taken to reduce wastage and improve utilisation.
		Satisfactory: Plant and equipment usage is periodically reviewed to ensure good value is derived. (e.g. minimise duplication, plant purchased but not fully used, plant left running). Subsequent action is taken to reduce wastage and improve utilisation, but this could be more regularly reviewed and enforced.
		Requires Improvement: Plant and equipment usage is occasionally reviewed to ensure good value is derived. (e.g. minimise duplication, plant purchased but not fully used, plant left running). Limited action is taken to reduce wastage and improve utilisation.
		Poor: Plant and equipment usage is rarely / never reviewed to ensure to that good value is derived. (e.g. minimise duplication, plant purchased but not fully used, plant left running). No action is taken to reduce wastage and improve utilisation.
506	**EV Infrastructure**	**Excellent:** The infrastructure is/will be in place to fully support successful migration to a low-carbon fleet (vehicles and plant), e.g. the ease, efficiency and availability of recharging locations. This includes additional capacity for any future growth in low carbon fleet beyond current plans.
	An assessment of whether the infrastructure in place is optimal to support the successful migration to a low-carbon fleet, e.g. the ease, efficiency and availability of recharging locations.	**Good:** The infrastructure is/will be in place to support successful migration to a low-carbon fleet (vehicles and plant), e.g. the ease, efficiency and availability of recharging locations.
		Satisfactory: Some of the required infrastructure is in place to support successful migration to a low-carbon fleet (vehicles and plant), e.g. the ease, efficiency and availability of recharging locations. However, the service needs to the review the infrastructure provision and identify and address any critical gaps. It is recognised that this may require financial investment.
		Requires Improvement: Overall, the current infrastructure will not support the full successful migration to a low-carbon fleet (vehicles and plant). A detailed infrastructure review and plan is required to support the low carbon fleet ambitions of the service, including an analysis of the required financial investment.
		Poor: The current infrastructure will not support the successful migration to a low-carbon fleet (vehicles and plant). It is unlikely that the authority will be able to afford the required investment.
507	**Service Life Extension Programme**	**Excellent:** The service has an established policy and proven record of maximising the service life of its vehicles and plant to reduce the need for replacement. The purchase of quality used (second-hand) plant and vehicles is also encouraged.
	An assessment of the extent of success with development and implementation of a service life extension programme for all vehicles and plant.	**Good:** The service aims to maximise the service life of its vehicles and plant based on assessed cost-effectiveness. The purchase of quality used (second-hand) plant and vehicles is also a consideration for replacement.
		Satisfactory: The service sometimes extends the agreed service life of its vehicles and plant based on assessed cost-effectiveness. Occasionally, the service considers the purchase of used (second-hand) plant and vehicles. The policy could be extended and better enforced.

		Requires Improvement: The service rarely extends the agreed service life of its vehicles and plant and/or considers the purchase of used (second-hand) plant and vehicles. The service has acknowledged the need to extend its replacement policy.
		Poor: The service no agreed policy to ensure it maximises the service life of all vehicles and plant. This is unlikely to change for the foreseeable future.
508	**EV Pool Cars for Business Travel**	**Excellent:** The service pool car fleet (for business travel) is all comprised of EV's.
	An assessment of the availability and use of EV pool cars for business travel.	**Good:** An assessment of the viability of purchasing EV vehicles for the pool car fleet (business travel) has been undertaken and implemented. The services pool fleet includes an increasing proportion of EV's.
		Satisfactory: The service pool fleet includes some EV's. The policy for increasing the purchasing of replacement vehicles is ad-hoc and could be better defined and enforced.
		Requires Improvement: The service pool fleet has small number of EV's. There is no policy or plan to significantly increase the proportion of EV's.
		Poor: The service pool fleet has no EV's. There is no policy or plan to purchase any EV's.
509	**Vehicle and Plant Disposal**	**Excellent:** The vehicle and plant disposal procedures ensure all waste is minimised and any recycling opportunities are identified and realised. Measures are in place and monitored regularly to ensure compliance.
	An assessment of the extent to which the policy for all vehicle and plant disposal ensures waste minimisation and consideration of any recycling opportunities.	**Good:** The vehicle and plant disposal policy aims to ensure waste minimisation and considers any recycling opportunities.
		Satisfactory: Waste minimisation is usually considered when disposing of vehicles or plant. Recycling opportunities are not typically considered. The policy will be reviewed with improved enforcement.
		Requires Improvement: Waste minimisation is occasionally considered when disposing of vehicles or plant. Recycling opportunities are not typically considered. A policy needs to be developed and enforced.
		Poor: Waste minimisation is never/rarely considered when disposing of vehicles or plant. Recycling opportunities are not explored. It is unlikely the policy will change in the foreseeable future.

11.6 Functions & Activities Carbon Reduction

ID	Factor	Scoring Guidance
600	**Functions & Activities Carbon Reduction**	
602	**Optimum Number of Repairs Completed**	**Excellent:** The service has in place a comprehensive job scheduling system that ensures the optimum volume of high-quality repairs are completed during an average shift across both internally delivered and commissioned services. The service monitors performance and takes prompt remedial action where necessary.
	An assessment of the extent to which work scheduling ensures the optimal number of repairs (volume and quality) are completed in an	**Good:** The service has in place a comprehensive job scheduling system that ensures the optimum volume of high-quality repairs are completed during an average shift across both internally delivered and commissioned services.

	average shift for both internally delivered and commissioned services.	**Satisfactory:** The service has in place a job scheduling system that ensures a satisfactory volume of high-quality repairs are usually completed during an average shift across both internally delivered and commissioned services. There is some scope to improve job scheduling further and the service has plans in robust place to do this. **Requires Improvement:** The service does not currently have a job scheduling system to ensure a satisfactory volume of high-quality repairs are completed during an average shift across both internally delivered and commissioned services. There are plans in place to address this. **Poor:** The service does not currently have a job scheduling system to ensure a satisfactory volume of quality repairs are completed during an average shift across both internally delivered and commissioned services. There are no plans in place to address this.
603	**Distance Travelled by Staff**	**Excellent:** The work scheduling system has been configured to minimise staff travel to and from depots for both internally delivered and commissioned services. Metrics to ensure this are in place and monitored regularly.
	An assessment of the extent to which work scheduling minimises the extent of staff travel to and from depots for both internally delivered and commissioned services.	**Good:** The work scheduling system has been configured to minimise staff travel to and from depots for both internally delivered and commissioned services. **Satisfactory:** The work scheduling system goes some way towards minimising staff travel to and from depots for both internally delivered and commissioned services, however, the service acknowledges that more could be achieved in this area and has robust plans in place to reduce staff travel further. **Requires Improvement:** There is no effective work scheduling system in place or the system in place is ineffectual in minimising staff travel to and from depots for both internally delivered and/or commissioned services. There are plans in place to address this. **Poor:** There is no effective work scheduling system in place or the system in place is ineffectual in minimising staff travel to and from depots for internally delivered and/or commissioned services. There are no plans in place to address this.
604	**Vehicle Load**	**Excellent:** The service has systems in place to ensure vehicles are at full capacity to minimise the number of trips whilst maintaining optimal operational efficiency. Metrics are in place to measure performance and are monitored regularly.
	An assessment of the extent to which vehicle loads are at full capacity to minimise the number of trips.	**Good:** The service has systems in place to ensure vehicles are at full capacity to minimise the number of trips whilst maintaining optimal operational efficiency. **Satisfactory:** There are systems in place which go some way towards ensuring vehicles are at full capacity to minimise the number of trips, however the service acknowledges that more could be achieved in this area and has robust plans in place to improve performance. **Requires Improvement:** There are no systems in place to ensure vehicles are at full capacity to minimise the number of trips, or the systems in place are ineffectual. There are plans in place to address this. **Poor:** There are no systems in place to ensure vehicles are at full capacity to minimise the number of trips, or the systems in place are ineffectual. There are no plans in place to address this.
605	**Optimal Inspection Intervals**	**Excellent:** The service has a comprehensive understanding of the age and condition of **all** assets and has set inspection intervals that reflect this.
	An assessment of the extent to which inspection intervals have	**Good:** The service has a comprehensive understanding of the age and condition of **most** assets and has set inspection intervals that reflect this.

	been optimised to reflect the age and condition of assets.	**Satisfactory:** The service has a comprehensive understanding of the age and condition of **some** assets and has set inspection intervals that reflect this. Robust plans are in place to gather age and condition data for all assets where this is not held currently. **Requires Improvement:** The service lacks a comprehensive understanding of the age and condition of many assets and is unable, therefore, to optimise inspection intervals. And / or, the service possesses good data on asset age and condition but has not set inspection intervals that reflect this. Plans are in place to address this. **Poor:** The service lacks a comprehensive understanding of the age and condition of many assets and is unable, therefore, to optimise inspection intervals. There are no plans in place to address this.
606	**Quality of Workmanship**	**Excellent:** 95%+ of repairs are error free and do not need replacing within the period specified by the service for 'right first time.'
	An assessment of the percentage of repairs (potholes / resurfacing) that are error free i.e. do not need revisiting within a specified period.	**Good:** 90%+ of repairs are error free and do not need replacing within the period specified by the service for 'right first time.' **Satisfactory:** 85%+ of repairs are error free and do not need replacing within the period specified by the service for 'right first time.' The service has robust plans in place to achieve a consistent 90%+ within the next 12 months. **Requires Improvement:** Less than 85% of repairs are error free and do not need replacing within the period specified by the service for 'right first time.' The service has plans in place to achieve a consistent 85%+ within the next 12 months. **Poor:** Less than 85% of repairs are error free and do not need replacing within the period specified by the service for 'right first time.' There are no plans in place to improve this.
607	**Longevity of Repairs**	**Excellent:** The service has and applies a comprehensive asset management strategy that is underpinned by a full analysis of the optimum mix of resurfacing, surface dressing, patching and choice of materials to minimise cost and carbon for all assets over their whole lifecycle.
	An assessment of the impact of the asset management strategy, e.g. patching versus surface dressing versus resurfacing and choice of materials in minimising carbon over the whole lifecycle of asset	**Good:** The service has and applies a comprehensive asset management strategy that is underpinned by a full analysis of the optimum mix of resurfacing, surface dressing, patching and choice of materials to minimise cost and carbon for most assets over their whole lifecycle. **Satisfactory:** The service has and applies an asset management strategy that goes some way towards optimising the mix of resurfacing, surface dressing, patching and choice of materials to minimise cost and carbon over the whole lifecycle of assets. The service recognises that more could be done to reduce cost and/or carbon over the asset lifecycle and has robust plans in place to achieve this. **Requires Improvement:** The service does not have an asset management strategy that optimises the mix of resurfacing, surface dressing, patching and choice of materials to minimise cost and carbon over the whole lifecycle of assets. Plans are in place to address this. **Poor:** The service does not have an asset management strategy that optimises the mix of resurfacing, surface dressing, patching and choice of materials to minimise cost and carbon over the whole lifecycle of assets. There are no plans in place to address this.
609	**Low Carbon Materials**	**Excellent:** The service always uses low carbon materials and processes where possible. The impact of climate change is always a primary consideration the selection process.

	An assessment of the scale of use and performance of low carbon materials, including whether the impact of climate change has been considered in materials selection.	**Good:** The service regularly uses low carbon materials and processes that have been evaluated against cost and performance (durability). The impact of climate change is almost always considered in materials selection. **Satisfactory:** The service implements ad hoc initiatives to increase the use low carbon materials and processes. There are plans in place to adopt a more focused approach. The impact of climate change is sometimes but not always considered in materials selection. **Requires Improvement**: The service only occasionally implements initiatives to increase the use of low carbon materials and processes and does not consider the impact of climate change in materials selection. There are plans in place to improve practices. **Poor:** The service rarely uses low carbon materials and processes and does not consider the impact of climate change in materials selection. There are no plans to improve practices.
610	**Carbon Reducing Technologies e.g. Drones / AI**	**Excellent:** The service regularly assesses the scale of use and performance of drones, AI and other emerging technologies to reduce carbon and has strategies in place for continuous improvement.
	An assessment of the scale of use and performance of emerging technologies to reduce carbon.	**Good:** The service undertakes occasional reviews of the scale of use and performance of drones, AI and other emerging technologies to reduce carbon and has strategies in place for continuous improvement. **Satisfactory:** The service implements ad hoc initiatives to increase the scale of use of emerging technologies to reduce carbon but does not have a robust strategy for continuous improvement. There are plans in place to adopt a more systematic approach. **Requires Improvement:** The service rarely if ever implements initiatives to increase the scale of use and emerging technologies to reduce carbon. There are plans in place to address this. **Poor:** The service rarely if ever implements initiatives to increase the scale of use and emerging technologies to reduce carbon. There are no plans in place to address this.
612	**Disposal and Treatment of Waste**	**Excellent:** The service has a comprehensive strategy for the disposal and treatment of waste, including minimising both waste production and transport costs. Relevant metrics are monitored regularly, and milestones and all targets are being achieved.
	An assessment of extent to which providers' policies for the disposal and treatment of waste, and recycling and reuse of materials align with those of the service and minimise the level of waste and transportation costs.	**Good:** The service has a comprehensive strategy for the disposal and treatment of waste, including minimising both waste production and transport costs. Relevant metrics are monitored and most milestones and targets are being achieved. **Satisfactory:** The service has a high-level strategy in place for the disposal and treatment of waste, including minimising both waste production and transport costs, and some milestones and targets are being achieved. The service recognises however that more could be done in this area and has robust plans in place to achieve this. **Requires Improvement:** The service has no effective strategies in place for the disposal and treatment of waste. There are plans in place to address this. **Poor:** The service has no effective strategies in place for the disposal and treatment of waste. There are no plans in place to address this.
613	**Recycling and Reuse of Materials /Waste**	**Excellent:** The service has a comprehensive strategy for maximising the recycling and re-use of materials. Relevant metrics are monitored regularly, and milestones and targets are all being achieved.

	An assessment of the extent and performance of strategies to maximise the recycling and re-use of materials.	**Good:** The service has a comprehensive strategy for maximising the recycling and re-use of materials. Relevant metrics are monitored, and most milestones and targets are being achieved. **Satisfactory:** The service has a high-level strategy in place for maximising the recycling and re-use of materials, and some milestones and targets are being achieved. The service recognises however that more could be done in this area and has robust plans in place to achieve this. **Requires Improvement:** The service has no effective strategies in place for the recycling and re-use of materials. There are robust plans in place to address this. **Poor:** The service has no effective strategies in place for the recycling and re-use of materials. There are no robust plans in place to address this.
615	**Use of LED's**	**Excellent:** The service has a comprehensive strategy for the conversion of streetlighting to LED and other low carbon technologies. Relevant metrics are monitored regularly, and all milestones and targets are being achieved.
	An assessment of the extent to which LED and other low carbon technologies have been deployed for street lighting.	**Good:** The service has a comprehensive strategy for the conversion of streetlighting to LED and other low carbon technologies. Relevant metrics are monitored, and most milestones and targets are being achieved. **Satisfactory:** The service is making some progress towards the conversion of streetlighting to LED and other low carbon technologies, and some milestones and targets are being achieved. The service recognises however that more could be done in this area and has robust plans in place to achieve this. **Requires Improvement:** The service has no effective strategy in place for the conversion of streetlighting to LED and other low carbon technologies. There are plans in place to address this. **Poor:** The service has no plan in place for the conversion of streetlighting to LED and other low carbon technologies. There are no plans in place to address this.
616	**Lighting Hours and Brightness**	**Excellent:** The service has a comprehensive strategy for reducing lighting hours and utilisation of dimming. Relevant metrics are monitored regularly, and all milestones and targets are being achieved.
	An assessment of the extent and impact of policies to reduce lighting hours and or introduce dimming.	**Good:** The service has a comprehensive strategy for reducing lighting hours and utilisation of dimming. Relevant metrics are monitored, and most milestones and targets are being achieved. **Satisfactory:** The service is making some progress towards the introduction of reduced lighting hours and dimming, and some milestones and targets are being achieved. The service recognises however that more could be done in this area and has robust plans in place to achieve this. **Requires Improvement:** The service has no effective strategy in place for the introduction of reduced lighting hours and dimming. There are plans in place to address this. **Poor:** The service has no effective strategy in place for the introduction of reduced lighting hours and dimming. There are no plans in place to address this.

11.7 Construction (Major Schemes) Carbon Reduction

ID	Factor	Scoring Guidance
700	**Construction (Major Schemes) Carbon Reduction**	
701	**Schemes Options Analysis & Selection**	**Excellent:** Carbon emission reduction/minimisation are the primary consideration for defining and evaluating the options available for construction (major works) schemes.
	An assessment of the extent to which carbon emission reduction / minimisation is a key criterion in the identification, evaluation and selection of options for construction (major works) projects.	**Good:** Carbon emission reduction/minimisation are an important consideration for defining and evaluating the options available for construction (major works) schemes.
		Satisfactory: Carbon emission reduction/minimisation are a consideration for defining and evaluating the options available for construction (major works) schemes. There is some scope to increase the importance if this criteria in the options evaluation and selection process.
		Requires Improvement: Carbon emission reduction/minimisation are a minor consideration for defining and evaluating the options available for construction (major works) schemes.
		Poor: Carbon emission reduction/minimisation is not a consideration for defining and evaluating the options available for construction (major works) schemes.
703	**Inclusion / Enabling of Carbon Reducing Initiatives**	**Excellent:** The ability to enable and support carbon reduction initiatives is the primary consideration when designing a scheme.
	An assessment of the extent to which the proposed schemes support carbon reducing initiatives such as reduced congestion, improved travel times, active transport options and EV infrastructure.	**Good:** The ability to enable and support carbon reduction initiatives is an important consideration when designing a scheme.
		Satisfactory: The ability to enable and support carbon reduction initiatives is a consideration when designing a scheme. There are plans to raise the importance and consider in more in detail the facilitation of such initiatives.
		Requires Improvement: The ability to enable and support carbon reduction initiatives is a minor consideration when designing a scheme. The importance and facilitation of such initiatives could be explored more fully.
		Poor: Carbon reducing initiatives are not / rarely considered when designing a scheme.
704	**Construction Methods & Policies**	**Excellent:** Construction Schemes always use low carbon materials and processes where possible. The impact of climate change is always a primary consideration the selection process.
	An assessment of the extent to which low carbon materials, processes and transportation are used for construction projects.	**Good:** Construction schemes regularly use low carbon materials and processes that have been evaluated against cost and performance (durability). The impact of climate change is an important consideration in materials selection.
		Satisfactory: Construction schemes implement ad hoc initiatives to increase the use low carbon materials and processes. There are plans in place to adopt a more focused approach. The impact of climate change is sometimes but not always considered in materials selection.
		Requires Improvement: Construction schemes only occasionally implements initiatives to increase the use of low carbon materials and processes and does not consider the impact of climate change in materials selection. There are plans in place to improve practices.
		Poor: Construction schemes rarely use low carbon materials and processes and generally do not consider the impact of climate change in materials selection. There are no plans to improve practices.

705	**Re-use and Repurpose Considerations (Circular Economy)**	**Excellent:** All schemes adopt proven circular economy principles (the reuse and repurpose of materials) at every opportunity during construction.
	An assessment of the extent to which the construction scheme deploys circular economy principles such as reusing and repurposing materials to reduce consumption, transportation and carbon emissions.	**Good:** All schemes adopt proven circular economy principles (the reuse and repurpose of materials) during construction, subject to cost, timescales and performance.
		Satisfactory: Circular economy principles (the reuse and repurpose of materials) are considered for construction schemes but could be more widely deployed. The potential benefits, including cost reduction and operational efficiency could be more fully explored.
		Requires Improvement: Circular economy principles (the reuse and repurpose of materials) are occasionally considered for construction schemes. The potential benefits, including cost reduction and operational efficiency could be more fully explored.
		Poor: The reuse and repurposing of materials is rarely a consideration when undertaking construction projects.
706	**Future Decarbonisation Initiatives**	**Excellent:** All construction schemes are designed with the scope and flexibility to take advantage of future decarbonisation initiatives (as known at the time of design).
	An assessment of the extent to which schemes are been designed to incorporate future technologies that will support further carbon emission reductions. E.g. Drones, Use of AI, Transport Modal Shifts.	**Good:** Construction schemes are generally designed with some scope and flexibility to take advantage of future decarbonisation initiatives, subject to cost and proven performance. (As known at the time of design).
		Satisfactory: Future decarbonisation initiatives, as known at the time of design, are a high-level consideration when designing a construction scheme. This criterion is gaining importance in the design and selection process.
		Requires Improvement: Future decarbonisation initiatives, as known at the time of design, are occasionally a consideration when designing a construction scheme. It is recognised that this criterion will need to be more fully considered.
		Poor: Future decarbonisation initiatives are never/ very rarely considered when designing a scheme. There are no plans to change this approach.
707	**Partner Selection**	**Excellent:** Carbon emission reduction policy, activity and targets is an important criterion in the selection of external providers for major construction contracts. All providers selected on this basis are closely monitored for actual carbon emission reduction performance.
	An assessment of the extent to which the service prioritises carbon emission minimisation in scheme design and construction as a criterion for provider selection.	**Good:** Carbon emission reduction policy, activity and targets is an important consideration in the selection of external providers for major construction contracts. There is some ongoing monitoring of carbon emission reduction performance.
		Satisfactory: Carbon emission reduction policy and activity is a consideration in the selection of external providers for major construction contracts. There is occasional monitoring of carbon emission reduction performance.
		Requires Improvement: Carbon emission reduction policy and activity is a minor consideration in the selection of external providers for major construction contracts.
		Poor: Carbon emission reduction policy and activity is not considered in the selection of external providers for major construction contracts.
708	**Scheme Carbon Management - Performance Targets & Measures**	**Excellent:** Detailed carbon emission targets with measures are agreed and set for all construction schemes.

	An assessment of the extent to which carbon emission targets are set and measured for all construction (major works) schemes.	**Good:** Carbon emission targets with clear measures are agreed and set for the majority of construction schemes. This requirement is becoming an important criterion of scheme management.
		Satisfactory: High level carbon targets are agreed and set for some construction schemes. This is recognition that this requirement needs to become a more important criteria of scheme management.
		Requires Improvement: High level carbon targets are occasionally set for some construction schemes. This is limited recognition that this requirement needs to become a more important criteria of scheme management.
		Poor: No carbon emission targets are set and measured for construction plans. There are no plans to change this policy.
709	**Scheme Carbon Monitoring, Reporting & Corrective Measures**	**Excellent:** Carbon emissions from construction schemes are constantly monitored and reported. Prompt action is taken to try and reduce emissions when targets are exceeded.
	An assessment of the extent to which carbon emissions are monitored and reported against targets, with corrective actions agreed if targets are not achieved.	**Good:** Carbon emissions from construction schemes are monitored and reported upon annually. Some action is taken during the life of the construction scheme to reduce carbon emissions when targets are exceeded.
		Satisfactory: Carbon emissions from construction schemes are monitored and reported at a high level, typically annually. Limited action is taken during the life of the construction scheme to reduce carbon emissions when targets are exceeded.
		Requires Improvement: Carbon emissions from construction schemes are rarely monitored and reported upon. This is limited recognition that this requirement needs to become a more important criteria of scheme management.
		Poor: Carbon emissions from construction schemes are not monitored and reported upon. There are no plans to change this policy.

12 Appendix D: Carbon Reporting Boundary

- **Carbon Overheads**
  - Premises & Sites
    - Gas, electricity, and fuel oil.
    - A/C and cooling equipment fugitive emissions.
    - Water and sewerage.
    - Local green energy generation.
  - Staff & Contractors
    - Home working emissions.
    - Commuting emissions.
    - Business travel emissions.
  - Vehicles & Plant
    - Owned / controlled fleet (HGV, LGV, and car) emissions.
    - Analysis by fuel type (diesel, petrol, hybrid, and electric).
    - Additional and alternative fuels for plant items.
- **Highways Maintenance**
  - Planned Maintenance
    - Resurfacing (carriageways and footways).
    - Micro asphalt surfacing.
    - Carriageway surface dressing and rejuvenation.
    - Footway slurry sealing.
    - Retexturing.
  - Reactive Maintenance
    - Potholes and patching.
    - Emergency tree cuts.
  - Electrical Assets
    - Signals
    - Controls.
  - Street Signs
    - Standard.
    - Illuminated.
  - Cyclical Maintenance
    - Gully emptying.
    - Grass cutting.
  - Lining
    - By weight or length.
  - Street Lighting
    - Quantity by quantity, primary material, and height.
    - LED upgrades.
  - Bridges, Structures & Geotechnical Assets (added 25 Aug 2025)
    - Total expenditure, or total carbon (from carbon statements).
  - External Inspections
    - FTE days and mileage.
  - Winter Maintenance
    - Salt volumes and transportation.
    - Winter treatments: distances and staff.
  - Waste & Recycling
    - Green waste to landfill.
    - Green waste to incineration.
    - Construction waste to landfill.
    - Recycled asphalt.
    - Recycled aggregates.
    - Recycled plastics.
    - Recycled iron and steel.
- **Construction**
  - Major schemes and capital works.

13 Appendix E: Carbon Footprint Guidance

1.01: How many highways services related sites does the authority own or control?
Please include all the offices, depots, storage sites, and marshalling yards, used for highways related services. Only include sites where there are GHG emissions. "Dark sites" without power, gas or water can be omitted.
1.02: What is the total of mains gas used in 2024/25 (kWh Gross CV)?
This is the total mains gas usage across all sites. Use a pro rata figure for shared sites using the following formula: [Total Usage] * ([Highways Staff On Site] / [Total Site Staff]).
1.03: What is the total of heating oil used in 2024/25 (kWh Gross CV)?
This is the total fuel oil usage across all sites. Use a pro rata figure for shared sites using the following formula: [Total Usage] * ([Highways Staff On Site] / [Total Site Staff]).
1.04: What is the total of mains electricity used in 2024/25 (kWh Gross CV)?
This is the total electricity usage across all sites. Use a pro rata figure for shared sites using the following formula: [Total Usage] * ([Highways Staff On Site] / [Total Site Staff]). Street lighting energy is usually accounted for separately and should be added here.
1.05: What percentage of this electricity was used for street lighting in 2024/25 (%)?
What % of the total electricity purchased was used for street lighting. This % may include the electricity used for all electrical assets (e.g. traffic signals).
1.06: What is the total water usage in 2024/25 (m3, EF includes waste treatment)?
This is the total mains or locally extracted water usage across all sites. The emission factor includes sewerage. Use a pro rata figure for shared sites using the following formula: [Total Usage] * ([Highways Staff On Site] / [Total Site Staff]).
1.07: How much top-up coolant was used for A/C equipment in 2024/25 (litres)?
This is the total A/C coolant usage across all sites for mains-powered A/C units. Exclude portable and vehicle-based coolant top-ups.
1.08: How much green energy was generated in 2024/25 (kWh Gross CV)?
This requires a quantity and an emission factor. The emission factor can be obtained from your energy provider or your energy export agreement.
2.01: How many staff and contractors worked for the service in 2024/25 (count)?
This should include all directly employed staff and all full-time agency workers and contractor-supplier staff. Exclude temporary or casual workers as these will be included in the analysis of maintenance activities.
2.02: On average, how many working days for each staff member in 2024/25 (count)?
This is the average total for all staff and permanently assigned contractors. Please include part-time and full-time staff. Use 247 as the default working days.
2.03: Average percentage of home working days in 2024/25 (%)?
This is the average percentage of working days spent working from home. This does not include days at other authority sites.
2.04: Average commute round-trip distance (miles)?
Enter the average commute distance for staff and contractors.
2.12: What was the total of reclaimed miles using private vehicles in 2024/25?
The total mileage is typically available from the HR or Finance teams with the authority. The total emissions are calculated based on the relative use of transport modes.
3.01: Total HGV (for all HGV classes) in 2024/25?
This is the total fuel use (litres or miles) for HGVs. The appropriate emission factor is applied by selecting the Unit of Measure.
3.02: Total LGV / Van (for all LGV classes) in 2024/25?
This is the total fuel use (litres or miles) for LGVs and Vans. The appropriate emission factor is applied by selecting the Unit Of Measure.
3.03: Total Car (for all car types) in 2024/25?
This is the total fuel use (litres or miles) for cars. The appropriate emission factor is applied by selecting the Unit Of Measure.
3.04: Total LGV / Van (for all LGV classes) in 2024/25?
This is the total fuel use (litres or miles) for HGVs. The appropriate emission factor is applied by selecting the Unit of Measure.
3.05: Total Hybrid LGV / Van (for all LGV classes) in 2024/25?
This is the total fuel use (litres or miles) for LGVs and Vans. The appropriate emission factor is applied by selecting the Unit Of Measure.
3.06: Total Car (for all car types) in 2024/25?
This is the total fuel use (litres or miles) for cars. The appropriate emission factor is applied by selecting the Unit Of Measure.
3.07: Total Plug-In Hybrid Car (for all car types) in 2024/25?

This is the total fuel use (litres or miles) for plug-in hybrid cars. The appropriate emission factor is applied by selecting the Unit Of Measure.

3.08: Total Self-Charging Hybrid Car (for all car types) in 2024/25?

This is the total fuel use (litres or miles) for self-charging hybrid cars. The appropriate emission factor is applied by selecting the Unit Of Measure.

3.09: Total LGV / Van (for all LGV classes) in 2024/25?

This is the total fuel use (kWh or miles) for electric LGVs and vans. The appropriate emission factor is applied by selecting the Unit Of Measure.

3.10: Total Car (for all car types) in 2024/25?

This is the total fuel use (kWh or miles) for electric cars. The appropriate emission factor is applied by selecting the Unit Of Measure.

4.02: How much standard bitumen was used in 2024/25 (tonnes)?

Straight run bitumen is the basic, unmodified form obtained directly from the distillation of crude oil. There are 970 litres per tonne. Only include bitumen that is not included in other treatments.

4.03: How much PMB was used in 2024/25 (tonnes)?

PMB (Polymer Modified Bitumen) is enhanced by adding polymers that increase elasticity, cohesion and overall resilience. There are 972 litres of PMB per tonne. Only include PMB that is not included in other treatments.

4.04: How much micro asphalting was completed in 2024/25 (m2)?

Micro asphalt is a surface treatment for roads that utilizes a slurry of small aggregates and a bitumen emulsion to seal and protect existing surfaces. It's applied over the existing road surface, acting as a preventative maintenance measure to extend the road's life, improve skid resistance, and seal out moisture. The emission factor is calculated for a m2 of micro asphalt treatment.

4.05: Total mileage of supply chain vehicles, where applicable (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

4.06: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

4.07: How much chip seal was completed in 2024/25 (m2)?

Chip seal surface dressing, also known as tar and chip surface dressing, is a cost-effective method for surfacing and resurfacing roads, footways, and other paved areas. It involves spraying a layer of hot liquid bitumen onto the existing surface and then spreading stone chippings on top, which are then rolled in to create a durable, textured surface. If used, provide the total volume in m2. Leave blank if not applicable.

4.08: How much bitumen emulsion spray (surface rejuvenation) was completed in 2024/25 (m2)?

Bitumen emulsion surface rejuvenator is used to restore and protect aged asphalt pavements by addressing issues like oxidation, moisture infiltration, and cracking, extending the life of the road surface and delaying the need for more extensive repairs. It essentially rejuvenates the asphalt by restoring the lost oils and resins, improving its flexibility and bonding properties. If used, provide the total volume in m2. Leave blank if not applicable.

4.09: How much "single layer" surface dressing was completed in 2024/25 (m2)?

Bitumen single layer surface dressing, also known as a chip seal, is a cost-effective road maintenance technique primarily used to restore and seal road surfaces, improving skidding resistance, and preventing further deterioration. It involves spraying a thin layer of bitumen binder onto the road, followed by spreading stone chippings, which are then rolled into the bitumen to form a protective layer. If used, specify the volume in m2. Leave blank if not applicable.

4.10: How much "double layer" surface dressing was completed in 2024/25 (m2)?

Bitumen double layer surface dressing is a type of road maintenance that involves applying two layers of bitumen and stone chippings to a road surface. It's used to seal the road, improve grip, and prevent further damage, especially on roads with moderate to high traffic. If used, specify the volume in m2. Leave blank if not applicable.

4.11: How much "double racked-in" surface dressing was completed in 2024/25 (m2)?

Double racked surface dressing involves applying two layers of bitumen and aggregate, typically using smaller chippings in the second layer. This method is used to enhance stability and reduce the risk of chippings being dislodged, particularly in areas with heavy or fast traffic, and to provide a more robust wearing surface. If used, specify the volume in m2. Leave blank if not applicable.

4.12: Total mileage of supply chain vehicles, where applicable (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

4.13: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

4.14: How much slurry sealing was completed in 2024/25 (m2)?

Footway slurry seal is a cost-effective treatment used to extend the life of structurally sound footways by providing a waterproof surface and sealing minor imperfections. It acts as a preventative measure, protecting the footway from water

ingress, weathering, and further deterioration. This treatment can also enhance the surface texture and improve slip resistance. If used, specify the volume in m2. Leave blank if not applicable.

4.15: Total mileage of supply chain vehicles, where applicable (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

4.16: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

4.17: How much "shotblasting" retexturing was completed in 2024/25 (m2)?

Shot blasting on pavements is primarily used for surface preparation and improvement of skid resistance. It effectively removes contaminants, old coatings, and rubber deposits, creating a cleaner and more textured surface. This process enhances adhesion for new pavement markings and coatings, and helps restore the aggregate's natural grip, improving safety. If used, specify the volume in m2. Leave blank if not applicable.

4.18: How much "water blasting" retexturing was completed in 2024/25 (m2)?

Water blasting, or hydro blasting, on pavements is primarily used for removing old road markings, paint, and other contaminants. It's a highly effective method for surface preparation, particularly on concrete and asphalt, offering minimal damage to the underlying material. If used, specify the volume in m2. Leave blank if not applicable.

4.19: Total mileage of supply chain vehicles, where applicable (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

4.20: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

4.21: What is the total budget for Planned Maintenance for 2024/25 (£)?

This is the budget for planned maintenance for highways-related activities only.

5.01: How many "Hot Rolled Asphalt (HRA)" repairs in 2024/25 (count)?

How many pothole repairs were completed using this material for the specified size. Use the Adjustment Multiplier if the average size of a pothole differs from 5M mm3. If the type of patching / pothole filling is unknown, use Hot Rolled Asphalt as the type. If this method is not used, leave the Quantity blank.

5.02: How many "Stone Mastic Asphalt (SMA)" repairs in 2024/25 (count)?

How many pothole repairs were completed using this material for the specified size. Use the Adjustment Multiplier if the average size of a pothole differs from 5M mm3. If the type of patching / pothole filling is unknown, use Hot Rolled Asphalt as the type. If this method is not used, leave the Quantity blank.

5.03: How many "warm mix asphalt" repairs in 2024/25 (count)?

How many pothole repairs were completed using this material for the specified size. Use the Adjustment Multiplier if the average size of a pothole differs from 5M mm3. If the type of patching / pothole filling is unknown, use Hot Rolled Asphalt as the type. If this method is not used, leave the Quantity blank.

5.04: How many "thermal patching" repairs in 2024/25 (count)?

How many pothole repairs were completed using this material for the specified size. Use the Adjustment Multiplier if the average size of a pothole differs from 5M mm3. If the type of patching / pothole filling is unknown, use Hot Rolled Asphalt as the type. If this method is not used, leave the Quantity blank.

5.05: How many "spray patching" repairs in 2024/25 (count)?

How many pothole repairs were completed using this material for the specified size. Use the Adjustment Multiplier if the average size of a pothole differs from 5M mm3. If the type of patching / pothole filling is unknown, use Hot Rolled Asphalt as the type. If this method is not used, leave the Quantity blank.

5.06: How many "cold applied asphalt" repairs in 2024/25 (count)?

How many pothole repairs were completed using this material for the specified size. Use the Adjustment Multiplier if the average size of a pothole differs from 5M mm3. If the type of patching / pothole filling is unknown, use Hot Rolled Asphalt as the type. If this method is not used, leave the Quantity blank.

5.07: How many "resin / cured" repairs in 2024/25 (count)?

How many pothole repairs were completed using this material for the specified size. Use the Adjustment Multiplier if the average size of a pothole differs from 5M mm3. If the type of patching / pothole filling is unknown, use Hot Rolled Asphalt as the type. If this method is not used, leave the Quantity blank.

5.08: Total mileage of supply chain vehicles, where applicable (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

5.09: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

5.10: How many emergency tree cuts / removals in 2024/25?

Emergency tree removal on local authority highways typically refers to the immediate action taken to clear a hazard, obstruction, or danger to public safety posed by trees or their branches. This might include removing a fallen tree, cutting

back branches interfering with traffic, or removing trees that are dead, diseased, or structurally unsound and pose an immediate risk.

5.11: Total mileage of supply chain vehicles, where applicable (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

5.12: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

5.13: What is the total budget for Reactive Maintenance for 2024/25 (£)?

This is the budget for reactive maintenance for highways-related activities only.

6.01: What was the total area of "cut and leave" grass cutting in 2024/25 (m2)?

"Cut and leave" grass cutting is a method used by local authorities where grass clippings are left in-situ after mowing, rather than being collected and disposed of. This approach is often preferred because it is more cost-effective and provides benefits for the grass and the environment. If undertaken, specify the volume in m2. If not undertaken, leave the Quantity blank.

6.02: What was the total area of "cut and collect" grass cutting in 2024/25 (m2)?

"Cut and collect" grass cutting is a method used by local authorities where grass clippings are collected after mowing and used for anaerobic digestion or composted. This approach is more expensive and potentially detrimental to natural the environment. If undertaken, specify the volume in m2. If not undertaken, leave the Quantity blank.

6.03: Total mileage of supply chain vehicles used for plant transportation (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

6.04: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

6.05: How many gullies were emptied in 2024/25 (count)?

Gully emptying refers to the maintenance task of cleaning out road gullies (the drains typically found at the edge of roads or in kerbs). These gullies are essential for managing surface water by collecting rainwater and directing it into underground drainage systems. If undertaken, specify as the number completed. If not undertaken, leave the Quantity blank.

6.06: Total mileage of supply chain vehicles used for plant transportation (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

6.07: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

6.08: What is the total budget for Cyclical Maintenance for 2024/25 (£)?

This is the budget for cyclical maintenance for highways-related activities only.

7.01: Total mileage of supply chain vehicles used for installations and repairs (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

7.02: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

7.03: What is the total budget for Street Lighting (Excluding Electricity) for 2024/25 (£)?

This is the budget for street lighting assets for highways-related activities only. Exclude the costs for energy.

8.01: How many single head traffic signals were installed / replaced in 2024/25 (count)?

Single head traffic signals are traffic signal units that consist of only one signal head, typically mounted on a pole or overhead structure, containing the standard red, amber (yellow), and green lights in one vertical arrangement. Specify the number installed or replaced (due to upgrades or damaged asset replacements). If none, leave the Quantity blank.

8.02: How many dual head traffic signals were installed / replaced in 2024/25 (count)?

Double-headed or dual head traffic signals are traffic signal installations that feature two signal heads on a single pole or structure, with the signals either facing the same direction or in opposite directions. Each signal head includes the standard red, amber, and green aspects. Specify the number installed or replaced (due to upgrades or damaged asset replacements). If none, leave the Quantity blank.

8.03: How many Belisha beacons were installed in 2024/25 (count)?

Belisha beacons are mounted on black-and-white striped poles to mark zebra crossings. In addition to a flashing amber globe, they can also include crossing illumination lighting. Specify the number installed or replaced (due to upgrades or damaged asset replacements).

8.04: How many roadside control cabinets were installed in 2024/25 (count)?

Electrical cabinets are used to house the electronics necessary to control traffic signals or regulate power for other electrical assets. A standard cabinet is 1000mm x 500mm x 300mm. Use the Adjustment Multiplier to specify a size

different to this. For example, if a typical control cabinet is 1000mm x 1000mm x 300mm, then this cabinet is twice the standard size, so specify 2 as the Adjustment Multiplier. Specify the number installed or replaced (due to upgrades or damaged asset replacements). If none, leave the Quantity blank.

8.05: Total mileage of supply chain vehicles used for electrical assets maintenance (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

8.06: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

8.07: What is the total budget for Electrical Assets for 2024/25 (£)?

This is the budget for electrical assets for highways-related activities only.

9.01: How many triangular signs were installed in 2024/25 (count)?

Triangular street signs are warning signs. The standard size on local roads (single carriageways) are 600mm per side. These signs are typically mounted on a plastic-coated steel post. Specify the number installed. If you do not know the shapes of installed signs, specify all installs as "square".

9.02: How many square signs were installed in 2024/25 (count)?

Square or rectangular road signs are generally used for information, directions, and instructions. Their colour and design determine their specific function. The average size on local roads (single carriageways) is 450mm x 450mm. These signs are typically mounted on a plastic-coated steel post. If you do not know the shapes of installed signs, specify all installs as "square".

9.03: How many circular signs were installed in 2024/25 (count)?

Circular road signs are used for orders and regulations, such as speed limits or prohibitions. The standard diameter on local roads (single carriageways) is 600mm. These signs are typically mounted on a plastic-coated steel post. Specify the number installed. If you do not know the shapes of installed signs, specify all installs as "square".

9.04: How many mains illumination upgrades in 2024/25 (count)?

These are mains-powered upgrades to new or existing street signs. Specify the number installed. Leave the Quantity blank, if none.

9.05: How many solar illumination upgrades in 2024/25 (count)?

These are solar-powered upgrades to new or existing street signs. These include canopy or post-mounted PV panels and batteries. Specify the number installed. Leave the Quantity blank, if none.

9.06: Total mileage of supply chain vehicles used for plant transportation (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

9.07: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

9.08: What is the total budget for Street Signs for 2024/25 (£)?

This is the budget for signs for highways-related activities only.

10.01: How much thermoplastic lining was applied in 2024/25?

Thermoplastic lining is a durable, heat-applied road marking material commonly used for lines, symbols, and signs on roads, pavements, and car parks. Thermoplastic road marking material is a solid compound, typically made from synthetic resins (binders), glass beads (for reflectivity), pigments (for colour – usually white or yellow), and fillers (like calcium carbonate). Use Thermoplastic Lining if the type is unknown.

10.02: How much bio-thermoplastic lining was applied in 2024/25?

Bio thermoplastic lining is a more environmentally friendly version of standard thermoplastic road marking. It replaces some or all of the petroleum-based resins with bio-based or renewable materials, making it more sustainable. Use Thermoplastic Lining if the type is unknown.

10.03: How much cold-applied MMA lining was applied in 2024/25?

Cold-applied MMA lining refers to road and pavement markings made from Methyl Methacrylate (MMA), a type of durable, cold-curing plastic that does not require heating to apply. Use Thermoplastic Lining if the type is unknown.

10.04: How much acrylic lining was applied in 2024/25?

Acrylic lining is a type of cold-applied road marking or surface coating made from acrylic resins, known for their quick drying, durability, and environmental flexibility. It's commonly used on roads, pavements, and car parks. Use Thermoplastic Lining if the type is unknown.

10.05: How much water-based lining was applied in 2024/25?

Water-based lining refers to road and surface marking paints that use water as the main solvent rather than chemicals like solvents or resins. It is one of the most environmentally friendly and easy-to-use marking systems available. Use Thermoplastic Lining if the type is unknown.

10.06: Total mileage of supply chain vehicles used for plant transportation (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

10.07: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

10.08: What is the total budget for Lining for 2024/25 (£)?

This is the budget for lining for highways-related activities only.

11.01: What was the total maintenance spend or total carbon emissions in 2024/25?

What was either the total spend or the total carbon emissions for bridges, structures and geotechnical assets. If total emissions are selected as the unit of measure, this data may be available from supply chain partners who provide carbon statements for completed works.

11.02: Total mileage of supply chain vehicles used for plant transportation (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

11.03: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

11.04: What is the total budget for Bridges & Structures maintenance in 2024/25

This is the budget for lining for highways-related activities only.

12.01: How much salt was purchased in 2024/25 (tonnes)?

Specify the total tonnes of salt used in winter treatments.

12.02: Salt extraction related emissions (tonnes).

The total extracted is automatically calculated based on the quantity purchased / used in 11.01, above.

12.03: Total mileage of supply chain vehicles used for plant transportation (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

12.04: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

12.05: What is the total budget for Winter Maintenance for 2024/25 (£)?

This is the budget for winter maintenance.

13.01: Total mileage of supply chain vehicles used for plant transportation (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

13.02: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

13.03: What is the total budget for Inspections (External Inspectors) for 2024/25 (£)?

This is the budget for external inspections for highways-related activities only (including carriageways, footways, bridges and structures).

14.01: How much green waste was sent to landfill in 2024/25 (tonnes)?

This can be retrieved from gate receipts or transportation records.

14.02: How much green waste was incinerated in 2024/25 (tonnes)?

This can be retrieved from gate receipts or transportation records.

14.03: How much construction waste was sent to landfill in 2024/25 (tonnes)?

This can be retrieved from gate receipts or transportation records.

14.04: How much asphalt was recycled in 2024/25 (tonnes).

This is typically available from the asphalt recycling team or from recyclate management records.

14.05: How much aggregate was recycled in 2024/25 (tonnes).

This is typically available from the asphalt recycling team or from recyclate management records.

14.06: How much plastic was recycled in 2024/25 (tonnes).

This is typically available from recyclate management records.

14.07: What was the quantity of steel / iron recycled in 2024/25 (tonnes).

This is typically available from recyclate management records.

14.08: Total mileage of supply chain vehicles used for waste and recyclate transportation (miles)?

If supply chain vehicles were used, and the emissions are not declared on the Carbon Overheads tab, enter the total annual miles for this function / process.

14.09: Total number of supply chain staff days, where applicable (count)?

If supply human resources were used, and the emissions are not declared on the Carbon Overheads tab, enter the total resource days for this function / process.

14.10: What is the total budget for Waste & Recycling for 2024/25 (£)?

This is the budget for waste and recycling for highways-related activities only.

14 Appendix F: Glossary

Terms and abbreviations used in this Programme Update.

Term	Definition
ADEPT	Association of Directors of Environment, Economy, Planning & Transport.
Bill of materials	A structured list of raw materials, components and quantities required to manufacture a finished product.
CBPA	Carbon Best Practice Assessment; assessment of carbon management maturity and practices using a structured scorecard and scoring guidance.
CFA	Carbon Footprint Assessment; whole-service assessment of emissions for defined highways functions, including carbon overheads, maintenance activities and construction activities.
CCAS	Carbon Calculation & Accounting Standard; guidance for calculating carbon emissions from highways maintenance and construction activities.
CEDR	Centre for Excellence for Decarbonising Roads.
CLP	Carbon Leadership Programme; DfT-funded programme delivering standardised carbon footprint baselining and best practice assessment across English LHAs.
DfT	Department for Transport.
Environmental Product Declaration	A standardised, independently verified report that details the whole life environmental impact of a product, from raw material extraction to disposal.
FHRG	Future Highways Research Group; ADEPT's research partner network of Local Highway Authorities.
Geotechnical assets	Engineered earthworks and natural ground features such as slopes and embankments essential to infrastructure (roads) stability.
GHG	Greenhouse gas(es).
Greenwash	Misleading claims about environmental benefits, impacts, or performance of products/services.
kgCO2e	Kilograms of carbon dioxide equivalent; a common unit for reporting greenhouse gas emissions.
tCO2e	Tonnes of carbon dioxide equivalent (1,000 kgCO2e).
LHA	Local Highways Authority (English authorities responsible for local roads).
LRED	Local Roads Emissions Database; the emissions factors database used by the programme toolsets.
LCA	Life Cycle Assessment; assessment of environmental impacts across life cycle stages.
Proforma	Standardised Excel workbook used by LHAs to complete self-assessments for CFA and CBPA.
Recyclates	Raw materials obtained through waste recycling to be used again in manufacturing.
Scope 1	Direct emissions from owned/controlled sources (e.g., combusted fuels, owned vehicles/plant).
Scope 2	Indirect emissions from purchased energy (e.g., electricity).

Scope 3	Other indirect emissions in the value chain (e.g., purchased goods/services, contractor activity, materials).
Schedule of resources	Schedule of the people, equipment and resources assigned to a project.
SSD	Solid State Drive; referenced for high-performance edge storage.
Value Analyser	Excel-based toolkit used to calculate and benchmark CBPA results.
VfM	Value for Money; assessment of economy, efficiency, effectiveness and wider value, used by the FHRG benchmarking club.
Virgin materials	Natural resources or raw materials extracted directly from the earth for the first time, never having been used, processed or recycled.
Edge servers / edge storage	Distributed cloud storage used to host programme datasets and tool data close to users for performance and resilience.
Confidence score	A 0–100 indicator of the reliability/completeness of a specific data point or score (assessment-specific).
Composite emissions factor	A research-based emissions factor representing a typical 'package' of materials/processes for a common highways activity, enabling top-down quantification where supply chain data is limited.