# FRAMEWORK SCHEDULE 1 (SPECIFICATION)

* 1. This Schedule sets out the scope of Deliverables required
  2. The Supplier must only provide the Deliverables for the Lots to which they have been appointed.
  3. For all Lots and/or Deliverables, the Supplier must support Buyers to include best practice and follow industry leading Standards where appropriate for the Deliverables requested.
  4. The Deliverables and any Standards set out in this Schedule may be refined (to the extent permitted and set out in the Order Form) by a Buyer during a Competitive Selection Procedure to reflect its Statement of Requirements for entering a particular Call-Off Contract.
  5. Suppliers who are successful on any Lot will also be able to list offers on our Digital Platform
  6. If a requirement does not specify a Lot it applies to, or is not listed within a Lot description directly, that requirement may be applied to any requirement by a Buyer at their sole discretion.

**Document Sections:**

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# FRAMEWORK REQUIREMENTS

The below sections outline supplier responsibilities to the Contracting Authority (CCS) and to the Buyer, these include;

## GENERAL

* + 1. Entering Call-Off Contracts for the Deliverables from Buyers;
    2. Accurately invoice for Deliverables rendered as agreed upon within a Call-Off Contract.
    3. Undertaking tomeet all Buyer requirements as agreed;
    4. Establish and deliver processes that deal with all Buyer enquiries and issues relevant to the applicable Call-Off Contract.

## PERFORMANCE

* + 1. Suppliers must comply with;
       1. The requirements articulated in Framework Schedule 4 - Framework Management;
       2. Framework Management Schedule 7 - Call-Off Award Procedure
       3. Call-Off Contract performance indicators, Call-Off Schedule 14 (Service Levels), Call-Off Schedule 15 (Call-Off Contract Management) and any other elements incorporated by the Buyer
       4. any reporting requirements of performance indicators implemented via the Framework, or any Call-Off Contract;
    2. the “[Supplier Code of Conduct](https://assets.publishing.service.gov.uk/media/648c3ab5b32b9e000ca968c3/Supplier_Code_of_Conduct_v3.pdf)” and any subsequent amendment or versions.
    3. Suppliers must identify, manage, mitigate and communicate risk to the Delivery of the Deliverables to the Buyer;
    4. Where required by the Buyer, the Supplier must maintain an appropriate risks and issues log;

## CHARGES

* + 1. Complying with the CCS Management Information requirements detailed within Framework Schedule 5 (Management Charges and Information);
    2. Support and maintenance Charges are to include all updates for changes to the taxation regime applied by HMRC, changes to Law by legislators and changes in regulation by regulatory bodies. If a Supplier believes that an extraordinary Charge is required to cover the cost for any changes this may only be issued to Buyers with the Approval of CCS;

## CONTINUOUS IMPROVEMENT – BEST PRACTICE/STANDARDS

* + 1. Complying with the requirements detailed within Call-Off Schedule 3 (Continuous Improvement);

## CUSTOMER SERVICE

* + 1. Where relevant in a Call-Off contract and requested by the Buyer, the Supplier commits to reference and measure their processes and procedures against the [Government Service Standard](https://www.gov.uk/service-manual/service-standard)
    2. The Supplier must ensure there is evidence that relevant processes and reporting are in place against the [Government Service Standard](https://www.gov.uk/service-manual/service-standard)

# STANDARDS

* 1. The Supplier must evidence attainment of certification against recognised Standards where required by any Buyer, either to a standard published by an official standardisation body (such as BSI, CEN or ISO), or provide evidence to demonstrate that quality standard processes and reporting are in place.
  2. Standards Buyers may apply Conditions of Participation to include but not limited to the contents of [Annex 1 - Lot specific specifications](#_heading=h.mf71q5dnnofv)

## OPEN STANDARDS

* + 1. Suppliers shall provide Deliverables which are either based on open Standards, or have the ability to support open Standards (such as open source software) to aid Buyers in adhering to the [Government Open Standards Policy](https://www.gov.uk/government/publications/open-standards-principles).
    2. These standards include but are not limited to:
       1. [Public Sector Networks](https://www.gov.uk/public-services-network#psn-standards)
       2. [Greening Government ICT Strategy](https://www.gov.uk/government/publications/greening-government-ict-strategy)
       3. [Open Source, Open Standards, and Reuse](https://www.gov.uk/government/publications/open-source-open-standards-and-re-use-government-action-plan)
       4. [Surveillance Camera Code of Practice](https://www.gov.uk/government/publications/surveillance-camera-code-of-practice)
       5. [Waste Electrical and Electronic Equipment regulations](https://www.gov.uk/guidance/regulations-waste-electrical-and-electronic-equipment)
       6. [The Port Services Regulation 2019](https://www.legislation.gov.uk/uksi/2019/575/contents/made)
       7. [Unmanned Aircraft System Operations in UK Airspace](https://publicapps.caa.co.uk/docs/33/CAP722%20Edition8(p).pdf)
       8. [Secure by Design](https://www.gov.uk/government/collections/secure-by-design) - Management of threats posed by poorly secured consumer connectable products

## BASELINE SECURITY AND CYBER SECURITY

* + 1. Suppliers shall ensure that Deliverables comply with [Procurement Policy Note 014](https://www.gov.uk/government/publications/ppn-014-cyber-essentials-scheme).

## GOVERNMENT PERSONNEL VETTING (SECURITY POLICY)

* + 1. The supplier commits to ensuring that Deliverables are in line with the [Government Security Policy Framework](https://www.gov.uk/government/publications/security-policy-framework) standard where required by the Buyer;

## HEALTH AND SAFETY STANDARDS

* + 1. Where required by a Buyer, Suppliers must evidence attainment of certification against recognised health and safety Standards either to an official standardisation such as ISO, or provide evidence to demonstrate that processes and reporting are in place;
    2. The Supplier must provide any demonstration of adherence to Health and Safety best practice as required by the Buyer during any Call-Off Contract;
    3. The Supplier must comply with [The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013](https://www.legislation.gov.uk/uksi/2013/1471/contents/made), or replacement;

## PROJECT MANAGEMENT

* + 1. Suppliers must ensure that the Deliverables are managed effectively to ensure delivery on-time, on-budget and to the required Specification of the Buyer;
    2. Suppliers must ensure that project based Deliverables are delivered via a recognised project management methodology to the agreement of the Buyer
  1. **THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015**
     1. Where they apply, Buyers and Suppliers must take the CDM Regulations or any equivalent into consideration in their procurement and tender, to confirm respective roles under the regulations, and manage any project in accordance with those regulations.

# PRICE

## FRAMEWORK PRICING

* + 1. Framework pricing is to be managed in accordance with Framework Schedule 3 (Framework Pricing);
    2. Prices provided at the Framework agreement are maximum rates and maximum markup. Competitive pricing shall be applied within a Call-Off competition.

## SUBMITTING A RESPONSE

* + 1. When responding to a Competitive Selection Procedure, or adding items to the Digital Platform, the Supplier shall provide a Charges Breakdown as required by the Buyer in the format the Buyer requires.
    2. The response shall enable the Buyer to understand the total Charges of the Supplier’s offer, and provide detail that enables assessment of value for money against each Deliverable of the Call-Off Contract. Suppliers must provide all quotations in a manner that clearly demonstrates to the Buyers the Charges that apply to;
       1. Goods;
       2. Software;
       3. Services;
       4. On-going support and maintenance and;
       5. any other costs and any limitations or assumptions that have been made in arriving at the proposed pricing, such as overhead costs for research and development or other functions;
       6. Applications of markup against the contract;
  1. **CALL-OFF ELIGIBILITY**
     1. Suppliers must meet minimum framework requirements to be eligible to be awarded work via a Competitive Selection procedure, these are;
        1. Cyber Security Essentials as set out in Framework Schedule 9 (Cyber Essentials Scheme)
        2. Carbon Reduction Plan as set out in Joint Schedule 5 (Sustainability)
        3. Renewed Insurances as set out in Joint Schedule 3 (Insurance Requirements)
     2. Suppliers who do not meet these minimum requirements will be considered to be suspended and will be notified by the Contracting Authority;
     3. Entering into call-off contracts in a suspended state will be considered a material default and will result in removal from the Framework.

# SOCIAL VALUE, ENVIRONMENT & SUSTAINABILITY

* 1. Social Value priorities are delivered under PPN 002. These, and any future iterations or replacements of them will apply to this Framework.
  2. Crown Commercial Service publishes a [Carbon Net Zero and Smart Solutions glossary of terms](https://assets.crowncommercial.gov.uk/wp-content/uploads/Glossary-of-terms_-Carbon-Net-Zero-and-Smart-Solutions-.pdf) to standardise definitions and meaning across sustainability.
  3. Crown Commercial Service published a [Buyer Greener Technology in the UK](https://www.crowncommercial.gov.uk/social-value/carbon-net-zero/buying-greener-technology-download-our-guide?utm_campaign=brand&utm_content=januarynl&utm_medium=email&utm_source=newsletter) in collaboration with PUBLIC

## ENVIRONMENTAL SUSTAINABILITY

* + 1. Suppliers shall contribute towards the public sector’s goal of improving the sustainability of public procurements and the operation of Deliverables supplied to Buyers under this Framework Contract.
    2. Suppliers are required to consider the impacts of their business processes on the environment and take measures to reduce such impact including by supporting where possible the [Government’s Environmental Policy and Sustainable Development Plan](https://www.gov.uk/government/sustainable-development.)

## ENERGY EFFICIENCY

* + 1. Suppliers must where requested by Buyers, measure, document and provide evidence of energy efficiency of all Deliverables, and provide appropriate solutions and advice to result in reduction of energy use, including but not limited to [Sustainability in information and communication technology (ICT): a DEFRA guide](https://www.gov.uk/government/publications/sustainability-in-information-and-communication-technology-ict-a-defra-guide)

## ‘CARBON FOOTPRINT’ MEASUREMENT

* + 1. Suppliers must where requested by Buyers provide information in their Call-Off tender on all relevant Deliverables to assist the Buyer in the task of calculating their total carbon footprint:
       1. [DEFRA Small Business User Guide](https://assets.publishing.service.gov.uk/media/5a798993ed915d07d35b6487/pb13310-ghg-small-business-guide.pdf)
       2. [PAS 2060 - Carbon Neutrality](https://www.bsigroup.com/en-GB/products-and-services/standards/pas-2060-carbon-neutrality/) - Carbon neutrality verification provides a recognized method of substantiating genuine claims so you can achieve these ambitions.
       3. [Carbon Neutral Britain](https://carbonneutralbritain.org/pages/become-a-carbon-neutral-business?kw=measuring-carbon-footprint-exact&utm_source=google&utm_medium=cpc&utm_campaign=novi---carbon-neutral-britain---carbon-advisory---exact&utm_term=measuring-carbon-footprint&gad_source=1&gclid=CjwKCAiArva5BhBiEiwA-oTnXcIyNKiZaHO37gPwVWbapPrTKE2vtZuf80Zsh1XIAxoxhYVUbEV2exoCnxcQAvD_BwE)
       4. [Carbon Trust SME Carbon Footprint Calculator](https://www.carbontrust.com/our-work-and-impact/guides-reports-and-tools/sme-carbon-footprint-calculator)
       5. [Biodiversity calculation support](https://eco-act.com/blog/calculate-company-biodiversity-footprint/), [Biodiversity footprint calculator](https://biodiversity-footprint-8fb367ed1296.herokuapp.com/#/calculator)
       6. Buyers are able to implement their own methodology into any call-off contract;

## WASTE MANAGEMENT

* + 1. Suppliers shall ensure that they have adequate waste management solutions for waste created in the course of their Deliverables, which details prevention, preparation for re-use, recycling, other recovery (energy) and disposal of waste.
    2. Suppliers must consider the life-cycle of their products and their design, on the overall impacts of the generation and management of the waste.
    3. Suppliers are responsible for ensuring that they deliver interoperable solutions, but where not possible, such that hardware with useful life remaining is replaced due to lack of interoperability, that hardware is offered to be returned to the Buyer, sold, with the value of which is released and returned to the Buyer, or disposed of responsibility.
    4. When considering impacts of the Deliverables and waste management, Suppliers shall consider environmental protection, sustainability, technical feasibility and economic viability of waste management, the protection of resources and the overall environmental, human health, economic and social impacts, and where requested evidence this to a Buyer
    5. Suppliers shall where requested provide Buyers with a waste management strategy for the Deliverables detailing;
       1. Other considerations regarding waste are;
          1. [WEEE Directive](http://www.environment-agency.gov.uk/business/topics/waste/32084.aspx)
          2. [RoHS Regulations](https://www.gov.uk/guidance/rohs-compliance-and-guidance)

## SUPPLIER ACCESSIBILITY RESPONSIBILITIES

* + 1. Where required by Buyers, Suppliers shall provide suitable hardware and software to meet the diverse user needs. This may include individuals with a visual, auditory, physical, speech, cognitive, language, learning, behavioural or neurological impairment, as well multiple languages for users for whom English is not their first language
    2. Suppliers shall assist Buyers in fulfilling Buyers legal obligations with regards to accessibility, by offering help and guidance on how the Services can either support or be tailored to the Customer’s needs
    3. Where required by a Buyer, the Supplier shall provide an accessibility statement for Services provided under a Call-Off Contract
    4. The Supplier shall where relevant maintain an accessibility policy, and identify (and where requested provide the details to Buyers) a role or department within their organisations with responsibility for the policy
    5. Buyers may require Suppliers to be able to deliver bilingual services within their services

## MODERN SLAVERY

* + 1. The Suppliers shall at all times be compliant with the provisions of the [Modern Slavery Act 2015](http://www.legislation.gov.uk/ukpga/2015/30/contents/enacted).
    2. Suppliers in scope of the act shall annually complete the [modern slavery assessment tool](https://supplierregistration.cabinetoffice.gov.uk/msat) as directed by CCS.
    3. The Suppliers shall make the outcomes of their modern slavery assessment available to Buyer once completed.
    4. The Suppliers shall use the outputs of the modern slavery assessment within their Continuous Improvement Plan to show active, demonstrable contributions it makes towards any necessary improvements.

# SUPPLY CHAIN AND SUBCONTRACTOR MANAGEMENT

* 1. Suppliers shall be responsible for the management of any Suppliers, Key-Subcontractors or Subcontractors they employ in the Delivery of the Buyer’s requirements;
  2. Suppliers will maintain effective processes for establishing, managing, maintaining, reviewing and delivering an effective, efficient supply chain to enable the provision of the Deliverables;
  3. Suppliers will provide flexibility in the supply chain, ensuring that the ongoing requirements of the Buyer can be met (for example if the Buyer wishes to add a local provider to the supply chain);
  4. Suppliers shall when requested by a Buyer, provide benchmarked data of their contracted supply chain against wider market rates to ensure value for money for the Deliverables over a contract term;
  5. Suppliers shall maintain effective processes for establishing and managing Subcontractors/partners to enable the provision of the Goods and/or Services;
  6. Suppliers will manage the process of risk transfer to their Subcontractors in project development and delivery.

1. **COLLABORATION**
   1. Suppliers must deliver in accordance with clause 3.1.3 of General Terms - Collaborative Working Principles where required by the Buyer
2. **CONTRACT MANAGEMENT**
   1. Suppliers shall effectively manage Call-Off Contracts throughout their respective terms including but not limited to
      1. Ensuring that the Buyer remains informed of key areas which may include Contract status, issues, performance and timescales;
      2. Where requested providing the Buyer with a schedule of expected Buyer obligations;
      3. Any change to a Call-Off contract shall be processed as set out in the Variation Procedure in Joint Schedule 2 - Variation Form
      4. Ensure you add continuous value throughout the lifetime of the contract.

# LOT 1 – Transport Professional Services

* 1. Lot 1 is based around Transport related professional services, consultancy, and project management. Buyers can award a contract via completion of a Competitive Selection procedure, or source defined solutions from the Digital Platform.
  2. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
  3. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel Lot 1
  4. Where requested by the Buyer, Suppliers shall provide a range of Services which may include but are not limited to:
  5. **Scope & Feasibility assessment** - Activity to support the Public Sector in improving public services, delivering efficiency, safety and sustainability. Includes general transport strategy, planning and economic forecasting advice and research. This may include but is not limited to;
     1. Scoping, consultation, and professional services to examine and define project objectives, requirements and constraints. This includes the development of specifications and implementation support
        1. Transport mode investment strategy support
        2. Business case and benefits realisation support
     2. Studies and audits to measure aspects of a proposed project or the effectiveness of an existing service to evaluate, outcomes include opportunities to improve current transport activity;
        1. value for money,
        2. lifecycle value,
        3. sustainability,
        4. environmental impact
        5. road and rail and other transport safety performance
        6. transport accident investigation to inform safety improvement
     3. Public consultation and stakeholder engagement services
     4. Transport research projects covering policy, alternative products and solutions, behavioural insights, testing and experimentation and more;
     5. Electrical grid management to assess, identify, control and optimise grid demand across the transport sector
     6. Package-specific bid transport requirement evaluation support
  6. **Training, education, and behavioural insights**  - Activities to underpin and support education, awareness raising, behavioural insights and its application in problem solving relating to all transport modes. This may include but is not limited to;
     1. Active Travel training and support, such as cycle training for schools and community engagement
     2. Transport safety initiatives including speed awareness & speed reduction as an outcome of enforcement action and traffic regulatory orders
     3. Training, education, marketing and support for the transition to electric, hydrogen and other alternative means of transport
     4. Vehicle testing and licensing, such as theory testing for cars, or services to manage training of fleet operators (MOD HGV licensing etc)
  7. **Mobility Services** - Professional Services to support organisations to develop their approach to integration of transport related services and multi-modal transport as a service. This list is not exhaustive, and may include;
     1. Journey accessibility in consideration of characteristics like, physical, geographical, economic, technological, social and cultural, and temporal accessibility criteria
     2. Active Travel enablement review and studies to assess infrastructure and access for active travel.
     3. Demand Responsive Transport assessments
     4. Review of Public-private partnerships in the MaaS ecosystem
     5. Setting up local Codes of Conduct for governing mobility services
     6. Alignment to local or national policy
     7. User experience reviews
  8. **Project, Design and Technical consultancy** - The detailed assessment,planning and strategy of transport technology, infrastructure and systems. Including user research, development of specifications, and support for phases of development. Includes specialist third party support, technical and commercial advisory services. This may include but is not limited to;
     1. testing and development of software and hardware solutions as proof of concept or trialling capabilities;
     2. User research, for study of needs, behaviours and experience;
     3. research and development consultancy services;
     4. Site surveys and geographical information surveys;
     5. Asset identification and inspection services;
     6. Development of outcomes against design standards and specifications;
     7. business and management consultancy services;
     8. Structural design, engineering design, and system architecture design, all including assurance services in accordance with Buyer standards;
     9. Transport location design to include estate layout, consideration of logistic requirements, amenities, facilities and passenger/pedestrian movement
     10. Built environment digital twin, digital twin approach and methodology application, incorporating insights, decisions, interventions and outcomes
     11. Design of traffic infrastructure location and layouts;
     12. Quantity Surveying and build cost estimation;
     13. New innovation tools to support evaluation and development of transport projects, such as Virtual Reality or Artificial Intelligence
     14. Support for discovery, alpha and beta phases of development
  9. **Type Approval, assurance, testing and evaluation** - Service providers supporting navigation of policies and procedures that enable approval of vehicles and systems and components. Includes capabilities of organisations to test against the standards and procedures set out by in-scope organisations
     1. Home Office Type Approval services
     2. Vehicle and component Type Approval services
     3. Product testing, compliance and evaluation services
     4. product, service, system and process assurance across the transport sector

# LOT 2 – Transport Data Services

* 1. Lot 2 is based around Transport related data services for Transport. Capabilities include the software development of data and the collection, processing, analysis and dissemination of data relating to Transport Systems. This pertains to data such as traffic flow, vehicle movement, public transit schedules, energy consumption, passenger counting solutions including those on vehicles, cycles and pedestrians, and infrastructure utilisation. This includes data for the movement of people and not just vehicles. For example, walking, wheeling and cycling.
  2. Suppliers are required to assure data privacy and security and ensure open data standards as a default. Systems deployed must be able to scale to meet increased demand.
  3. Supplier Deliverables must ensure data portability., as required under GDPR and the [Information Commissioners Office](https://ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/individual-rights/individual-rights/right-to-data-portability/), and any future requirements as set forth in Data (Use and Access) Bill
  4. Buyers can award a contract via completion of a Competitive Selection procedure, or source defined solutions from the Digital Platform.
  5. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
  6. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel
  7. Where requested by the Buyer, Suppliers shall provide a range of Services which may include but are not limited to:
  8. **Data acquisition** - Services that support the purchase and/or collection of data.
     1. Use of desktop review of available data sources
     2. Deployment of temporary data capturing technologies, such as sensors, cameras and other devices to capture real time data
     3. Supply of transport data and insight
     4. Asset survey (Location, condition, survey, physical inspection using Lidar, ground penetrating radar, high resolution photography
     5. Survey design and delivery
     6. Geographical Information Surveys (GIS)
     7. Consumer and demographic data
     8. [OpRa](https://transmodel-cen.eu/index.php/opra/), the identification of Public Transport raw data to be exchanged, gathered and stored in order to support Study and Control of Public Transport Service.
     9. Development of application programming interface and other tools to acquire data from other systems
  9. **Data Analytics** - Services that support the analysis and use of data.
     1. Use of software, platforms and other means to interpret available data to inform conclusions
     2. Enablement of simulation models to understand patterns, trends and insights
     3. Presenting data via dashboards or reporting tools to make it understandable
     4. Data and system forensics
  10. **Transport Data uses -**  Use of Transport data can be used for requirements such as
      1. Traffic Data, public transport data, freight and logistics data,
      2. Smart Data, where explicitly assigned by contract, that includes named access data, including transaction data, ticket data, journey information and concessionary data
      3. Condition surveys (Road or structure condition),
      4. Environmental data
      5. Transport modelling services (virtualisation and simulation);
      6. Transit analytics;
      7. Transport survey, data capture and processing
      8. Machine Learning and AI training based on data
      9. Real time passenger / vehicle data
      10. Road Safety data & reporting
      11. Demand management data
      12. Use of data from Body worn video feeds
      13. Real time monitoring, exception alerts, predictive outcomes
  11. **Quality Assurance Testing & Assurance** - Testing procedures to ensure that outcomes meet the required standards, specifications and/or performance criteria throughout their lifecycle.

# LOT 3 – Parking Management

* 1. Lot 3 is based around the Parking sector, bringing capabilities from service providers for delivery of requirements for on-street or off-street Parking, sustainable car parking, and end to end parking solutions
  2. Buyers can award a contract via completion of a Competitive Selection procedure, or source defined solutions from the Digital Platform.Capabilities for each solution may include some or all of; supply of equipment, Ongoing and configuration, integration with existing systems, validation and calibration, ongoing technical support, any specialist technical training for delivered solutions, and term service maintenance.
  3. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
  4. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel
  5. Where requested by the Buyer, Suppliers will provide a range of Deliverables which may include but are not limited to:
  6. **Parking Professional Services** - provision of Deliverables containing advice, knowledge and consultancy with respect to parking design and development. Includes;
     1. Design services for built environment and system outcomes;
     2. Supporting management of Digital Traffic Management Orders (TMO) / Traffic Regulation Orders (TRO);
     3. Project Management of development of parking solutions, from feasibility, planning and execution;
     4. Services to support customer services actions regarding Penalty Charge Notice (PCN) processing;
  7. **Parking Enforcement Services** - Services within this lot include personnel, fleet and enforcement activity as a service, to enable enforcement and management of kerb space, car parks and other enforceable locations. The scope of these requirements should also include integration and deployment of technology to aid enforcement;
     1. Supply of services that include personnel such as Civil Enforcement Officers (CEOs) to manage enforcement
     2. Management of enforcement and removal of abandoned vehicles, their storage and release. Includes Services for the removal and relocation of vehicles in violation of parking enforcement restrictions, including abandoned and untaxed vehicles
     3. Vehicle disposal procedures which may include;
        1. DVLA searches, managing contact with the registered keeper, local authorities, police and other stakeholders;
        2. Fleet management for safe removal of vehicles
        3. Assessment on whether a vehicle is abandoned
        4. Supporting claims for removal, storage and disposal
     4. Implementation of vehicle enforcement capabilities, including any hardware or software necessary, such as ANPR solutions, handheld devices, In-Vehicle technology, Handheld devices, body-worn cameras and communication equipment
     5. Supply of stationary and other materials necessary for an authority to properly administer a penalty charge or other enforcement notice.
  8. For Parking Enforcement Services, additional legislative adherence, technical standards or professional capability requirements Buyers may request compliance for a project as a part of their Conditions of Participation for their contract. This list is not exhaustive and Buyers may include standards or requirements not listed;
     1. British Parking Association City & Guilds assured awards
     2. [**Vehicle Certification Agency Approved Civil Traffic Enforcement hardware**](https://www.vehicle-certification-agency.gov.uk/other-certification/civil-traffic-enforcement-in-the-uk-england/)
     3. [**Vehicle Certification**](https://www.vehicle-certification-agency.gov.uk/other-certification/civil-traffic-enforcement-in-wales/) [**Agency Approved**](https://www.vehicle-certification-agency.gov.uk/other-certification/civil-traffic-enforcement-in-the-uk-england/) [**Civil Traffic Enforcement hardware (Wales)**](https://www.vehicle-certification-agency.gov.uk/other-certification/civil-traffic-enforcement-in-wales/)
     4. [**Solutions in alignment with the Traffic Management Act 2004**](https://www.legislation.gov.uk/ukpga/2004/18/contents)
  9. **Back office platforms & Applications** - Software, applications and systems that enable operation of Parking systems and associated components, including but not limited to;
     1. Digital Payment, payment applications, supporting back office systems, payment acceptance solutions and others;
     2. Management of dispensation or suspensions of parking restrictions;
     3. Real time monitoring and management of parking spaces;
     4. Enforcement Officer device applications that enable the management of enforcement actions, including issuance of charge notices, removal of vehicles;
     5. Citizen facing applications to enable purchase of parking or payment of Penalty Charge Notices;
     6. Digital Traffic Regulation Order solutions;
  10. **Operational Management -** Services that support daily use of the facilities to ensure its proper function and operation, services may include some or all of the below;
      1. Service contracts to deploy and manage Parking enforcement services, including processing of Penalty Charge Notices, Debt Recovery and other aspects;
      2. Management services for providing staffing and on-site management of parking facilities;
      3. User assistance capabilities, including parking user complaints, payment and enquiry support;
      4. Handling and management of cash from pay and display machines
      5. Maintenance, cleaning and identification of upgrades required to meet standards of the Buyer;
  11. **Infrastructure, ancillaries and technologies**
      1. Access Control infrastructure, including but not limited to; barriers, gates, bollards, access technologies eg Biometrics, RFID access etc
      2. Parking Safety & Security infrastructure including but not limited to; lighting, CCTV, Signage, traffic control measures, emergency call-points, fire safety, accessibility features, intercoms
      3. Car park bay marking and wayfinding services
      4. Pay and Display equipment including but not limited to; multiple payment methods, accessibility features, ticket printing, indoor and outdoor systems
      5. Space counting and bay monitoring systems
      6. Passive infrastructure, including but not limited to; railings, gates, fencing, furniture
      7. Car Park Signage including but not limited to; wayfinding, instructions, terms and conditions, disability bay signage, digital space counting infrastructure
      8. Supply of Uniform or PPE required to safely undertake the works, for personnel directly employed or contracted by the authority for the purposes of managing Parking and enforcement thereof;

# LOT 4 – Environmental Monitoring & Climate Resilience

* 1. Lot 4 is for Technology deployed across transport networks and in rural and urban areas to understand and address issues that affect the environment and sustainability of our ecosystem. Outdoor systems that provide insight and data regarding the environment and climate.
  2. Technology deployed across transport networks and in rural and urban areas to understand and address issues that affect the environment. It includes sensors that measure and monitor air quality, noise, and temperature.
  3. Buyers can award a contract via completion of a Competitive Selection procedure, or source defined solutions from the Digital Platform.Capabilities for each solution may include some or all of; supply of equipment, system installation and configuration, integration with existing systems, validation and calibration, ongoing technical support, any specialist technical training for delivered solutions, and term service maintenance.
  4. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
  5. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel
  6. Where requested by the Buyer, Suppliers will provide a range of Deliverables which may include but are not limited to:
  7. **Environmental Professional Services** - Access to advice, knowledge and consultancy regarding environmental monitoring and climate resilience.
     1. Support on regulatory based monitoring, reporting and compliance;
     2. business case development, impact and environmental risk assessments;
     3. strategy development for improving sustainability, environmental outcomes and decarbonisation
     4. Research and insight into fluvial flooding and how this affects infrastructure resilience, emergency response, and national security
     5. Environmental risk analysis and assessment on infrastructure for long term and short term risk profiles
     6. Integrating environmental data into transport network planning and management
     7. Services to support identification and measurement and reporting of [GHG Protocol](https://ghgprotocol.org/) Scope 1, 2 and 3 emissions
     8. Training and scenario testing for response to environmental
     9. Animal, ecology and geotechnical surveys and support
     10. Support for developing control and monitoring of emissions
  8. **Data and Software Services** - Services that support the purchase, collection, processing, analysis and/or dissemination of data and insights regarding environmental monitoring and climate resilience
     1. Data analysis to support research projects
     2. API to support consumption of data from external sources
     3. software platforms to support management and analysis of data from goods solutions
     4. Remote Sensing utilising satellite imagery, UAVs and drones sensors, photography and GIS systems to analyse environmental features and changes
     5. Incident response capabilities from systems
     6. Real-time data processing and analysis
     7. Quality Assured & Quality Controlled data set support
     8. Weather forecasting software, services and solutions
  9. **Environmental Monitoring solutions -** Solutions for the observance of the environment. Capabilities for each solution may include some or all of; supply of instruments, system installation and configuration, integration with existing systems, results validation and calibration, testing, monitoring and management services, ongoing system technical support, term service maintenance and intervention or mitigation measures.
     1. All Deliverables may be delivered as a permanent fixed, semi-permanent or mobile temporary solution to meet the needs of the Buyer
     2. **Weather Monitoring**
        1. Fixed installations with instruments such as but not limited to; thermometers, barometers, anemometers, hygrometers, rain gauges and pyranometers
        2. Radar solutions to detect rainfall and movement of weather systems
        3. Satellite systems for broadscale observation
        4. Automated Weather observation systems (AWOS)
        5. Road or Track side monitoring and warning systems (flood, Ice, landslip)
     3. **Air quality monitoring**
        1. Monitoring of outdoor air quality to detect pollutants such as volatile organic compounds, carbon monoxide, ozone and nitrogen dioxide
        2. Applications covering air quality, public spaces including co-location with infrastructure
        3. transport emission monitoring
        4. Interventions - dust suppression
        5. Air quality readings from drones
     4. **Ambient light monitoring**
        1. Sensors to measure the level and quality of light in an environment
        2. Ambient Light Sensors (ALS) to detect intensity of light in the environment
        3. Systems to enable automated switch on of lights to improve energy efficiency
     5. **Water Monitoring**
        1. Data and insight into hydrology, water quality, water usage and sustainability
        2. Weather buoys to measure sea temperature, wave characteristics and other elements
        3. Water quality monitoring and assessment of physical properties, temperature, turbidity, colour and odour.
        4. Chemical testing of water to determine presence of bacteria, pathogens, heavy metals and other contaminants
     6. **Noise, Dust and Vibration Monitoring**
        1. Measurement of noise, dust and vibration (NDV) levels within an environment
        2. Workplace safety system to ensure safe working levels, or adherence to local regulations
        3. Noise monitoring response mechanisms
        4. Use of data to inform project planning
        5. Solutions to reduce noise
     7. **Animal, Pest and Ecological technologies**
        1. Fenceline monitoring
        2. Species detection methods (computer vision, acoustic monitoring, radar, and molecular methods)
        3. Ecological survey toolkits and equipment

# LOT 5 – Enforcement, Security, Compliance

* 1. Lot 5 is based around Enforcement, Security, Compliance and emergency service technologies and services.  [The lot delivers enforcement technologies as described in the National Police Chief’s Council guide](https://library.college.police.uk/docs/NPCC/NPCC-(2016)-Speed-Red-light-Enforcement-Technology-Guide-v1-2-1-July2016.pdf) and any future replacement, technology systems and services to prevent trespass, property damage and theft, anti-social behaviour and enhance security. Technologies for incident safety, or for emergency response. Professional Services to include design services for the design of enforcement schemes.
  2. Buyers can award a contract via completion of a Competitive Selection procedure, or source defined solutions from the Digital Platform.Capabilities for each solution may include some or all of; supply of equipment, system installation and configuration, integration with existing systems, validation and calibration, ongoing technical support, any specialist technical training for delivered solutions, and term service maintenance.
  3. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
  4. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel
  5. Where requested by the Buyer, Suppliers will provide a range of Deliverables which may include but are not limited to:
  6. **Enforcement Professional Services**
     1. Research and strategy development for;
        1. threat posed by technologies and development of strategies, tools and policy to counteract them
        2. test hypotheses, technologies, or behaviours relevant to national security.
        3. public perception of security measures
     2. Statistical support helps ensure data integrity, model accuracy, and evidence-based decision-making.
     3. Operational Trainingincluding;
        1. controlled experiments, test screening a documented,
        2. Health and safety training, to ensure safe operation of enforcement devices and equipment
        3. robust audit trail to support rebuttal of challenges to operator competence
     4. Security risk analysis and assessment of infrastructure for long term or short term risk parameters
     5. Screening and inspection services for detection of threat, hazard or contraband
     6. Calibration and testing services for enforcement devices to support sight alignment, speed accuracy and other requirements
  7. **Vehicle monitoring technologies;**
     1. Solutions, hardware and technologies that support the enforcement of offenses under the Road Traffic Regulation Act 1984, Road Traffic Act 1988, Vehicle Excise and Registration Act 1994, Vehicle Drivers (Certificates of Professional Competence) Regulations 2007 and other statutory legislation
     2. **Type-Approved vehicle enforcement classifications** - temporarily deployed, permanent or hand-held devices for enforcement, which may include but are not limited to;
        1. Attended actively operated systems, set up and actively operated by a trained user
        2. Automatic operation, to record imagery of speeding vehicles and provides auditable data
        3. Unattended automatic operation, such as roadside loop operated speedmeters
        4. Supervised automatic operation,such as portable roadside radar speedmeter
        5. **In-car devices**
           1. Speedometer fitted vehicle (“follow check”)
           2. Automatic and in-car distance / time devices
           3. Chronometers
     3. **Type-Approved vehicle operator enforcement technologies** - which may include but are not limited to;
        1. Evidential breath-alcohol analysis instruments
        2. Mobile preliminary drug-testing devices
        3. Drug-testing devices
        4. Tachograph / Driver hours enforcement technologies
     4. **Vehicle compliance systems and equipment** - Technologies and services to enable compliance assessment of commercial vehicles which may include but are not limited to;
        1. Commercial vehicle operations compliance systems and equipment
        2. Weigh-in-Motion System (WIMS) systems and equipment;
        3. Overheight detection systems
        4. Vehicle acoustic measuring systems at the point of emission
     5. **Moving traffic offences** - Services to support detection, management and enforcement of moving traffic offences, including any notices or other actions as a result of. Solutions may include but are not limited to;
        1. Driving through red traffic lights / Highway Red X
        2. Incorrect lane use, for example incorrect use of Cycle Lanes / Bus Lanes
        3. Failure to adhere to signalled Highway Code Information signs
     6. **Road Traffic Offences** **-** Services to support detection, management and enforcement of road traffic offences, solutions may include but are not limited to;
        1. Dangerous driving detection
        2. Impaired driving detection
        3. Seatbelt wearing detection
        4. Distracted driving
        5. Handheld mobile phone use
        6. Excessive noise detection
  8. **Personnel safety and protection -** Goods and/or services that provide protection and safety to the user
     1. **Emergency service safety technology** - solutions may include but are not limited to;
        1. Body Worn Cameras
        2. Torches
        3. Emergency Service Radios
        4. Two way radio
        5. Equipment storage solutions
  9. **Theft, nuisance, trespass and crime prevention;**
     1. **Threat Detection -** Technologies to support detection of threats
        1. Explosive, chemical or weaponry detection
        2. deployment, effectiveness measurement, and integration of sensors for detecting threats
     2. **Behavioural technologies** - Supporting systems designed to enhance current security and safety systems. Solutions may include but are not limited to;
        1. Unauthorised access / trespass warning systems
        2. Damage, theft and graffiti detection
        3. Loitering detection

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# LOT 6 – Zero emission vehicle infrastructure

* 1. Lot 6 is for Low or Zero emission vehicle charging and fuelling Infrastructure and enabling systems. Buyers can award a contract via completion of a Competitive Selection procedure, or source defined solutions from the Digital Platform.Where requested by the Buyer, Suppliers can provide a range of Deliverables from the scope
  2. Capabilities for each solution may include some or all of; supply of equipment including ancillaries, system installation and configuration, integration with existing systems, physical and cyber security solutions, installation and decommissioning Services, Servicing and Maintenance Services, site management services, ongoing technical support, any specialist technical training for delivered solutions, and term service maintenance
  3. This lot covers a range of cost model solutions, including Charging as a service (CaaS), subscription-based models, revenue share models, fully funded buyer options, and mixed contracts.
  4. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
  5. At contract exit and where required in the buyers requirements Suppliers must provide all learning and knowledge of system and/or design, operation, maintenance methodologies and as-built information as part of a contract, to support and enable a third party to continue operation of the service on behalf of the Buyer and their personnel
  6. Where requested by the Buyer, Suppliers will provide a range of Deliverables which may include but are not limited to:
  7. **Zero Emission Vehicle Professional Services -** Access to services to support the development and delivery of low or zero emission vehicle infrastructure, including but not limited to:
     1. project management and project support,
     2. consultancy and design services,
     3. economic viability studies,
     4. site surveys including site load monitoring pre-installation and through service life
     5. engagement and management of requirements with Distribution Network Operators (DNO / Independent DNO) and
     6. energy management solutions
     7. cyber security solutions related to hardware and software
     8. licensing and street works access and activities
  8. **Electric Vehicle Charging points -** Charge Point equipment and associated services inclusive of installation and grid connection (including feeder pillar, transformers), and back office systems where necessary, including but not limited to:
     1. **Fixed charging points**
        1. AC and DC charging devices across categories widely recognised in the market of standard, fast, rapid and ultra-rapid, or any future technology advancements;
        2. inductive ‘wireless’ chargers (static and ‘in motion);
        3. bi-directional charging
        4. Lamppost or Wall charging capabilities
        5. Bollard charging
        6. Flush fitting charging technology
     2. **Mobile Charging points and related ancillaries**
        1. Hardware solutions
        2. Operational services
     3. **Energy Generation & Storage**
        1. Energy generation for fixed and mobile charging points, including those powered by alternative fuels
        2. Energy storage solutions
        3. Energy Management Systems
        4. Solar power supply, or canopies to support other systems
  9. **Back office platforms & applications -** Software, applications and systems that enable operation of Environmental Systems and associated components, including but not limited to;
     1. Vehicle Charging Payment Solutions, access and Payment solutions (e.g. RFID, PAYG, fuel and charge card, membership);
     2. Managed Back Office Solutions, Charge Point Management Systems (CPMS);
     3. Self Managed Service Back Office Solutions
     4. EV Bay monitoring systems
  10. **Infrastructure & Ancillaries**
      1. Hydrogen solutions for mobile charging or refuelling
      2. Required Cabling and charging cable gullies
      3. Grid connectivity, upgrades and associated works required
      4. Infrastructure, including bay markings, safety equipment, CCTV, bollards, and other requirements for safe design and use
  11. **Charge Point Operational management & maintenance services -**  .
      1. **Operational Management:**
         1. Monitoring charge point performance and availability.
         2. Managing user access, billing, and payments.
         3. Ensuring compliance with industry regulations.
         4. Data analysis to optimise efficiency and usage.
      2. **Maintenance Services:**
         1. Routine inspections and preventive maintenance.
         2. Troubleshooting and repairing hardware or software issues.
         3. Upgrading firmware and security patches.
         4. Replacing faulty components to minimise downtime.

# LOT 7 – Systems and Platforms

* 1. **Lot 7a is for Transport System Integration**. This involves Deliverables available from other Lots on this agreement, project management, and technical capabilities to integrate systems and processes. The Buyer can award a Call-Off Contract via completion of a Competitive Selection Procedure.
     1. Core systems, combining capabilities from multiple lots, include but not limited to:
        1. Multi-modal network management;
        2. Intelligent Transport Systems & Services;
        3. Integration of Intelligent asset management;
        4. Road user charging and other tolling mechanisms;
     2. Capabilities for each solution must include some or all of; supply and development of software, supply of software and a service, system integration and connectivity of various systems, project management, system implementation and configuration, testing and validation and calibration, ongoing technical support, any specialist technical training for delivered solutions, and term service maintenance
     3. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
     4. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel
     5. Where requested by the Buyer, Suppliers will provide a range of Deliverables which may include but are not limited to:
        1. **System design -** design and planning of transport systems
        2. **System Development -** Development of Application Programming Interfaces’s to integrate systems, and creation of new apps or platforms. Includes support for discovery, alpha and beta phases of development and deployment
        3. **System Integration** - Interfacing various transport systems, ensuring they operate efficiently and enable outcomes. Capability to integrate data from multiple sources, enabling sharing and analysis to support operational efficiency and improve decision making. Includes common database integration.
        4. **Project Management** - Overseeing implementation of complex systems, coordinating stakeholders and other contractors.
        5. **Configuration** - Capabilities to customise and configure systems to meet the needs of the contracting authority, compliant with standards.
        6. **Testing and Validation** - Capabilities to test, validate and demonstrate the integrated systems operate reliably and efficiently.
        7. **Optimisation and Monitoring -** optimisation of systems and/or their desired outputs
        8. **Maintenance and Support** - On-going maintenance and support services to troubleshoot, fault find and fix and provide regular routine updates
        9. **Security and Compliance** - Ensure all integrated systems and data streams comply with any relevant security standards and regulations.
  2. **Lot 7b is for Smart Ticketing** capabilities. This involves Deliverables available from other Lots on this agreement, project managed by outsourced capability. This lot covers various ticketing types, such as Ticketing Printing, ITSO (previously Integrated Transport Smartcard Organisation), QR Code Barcode readers, Contactless Ticketing Systems (cEMV), and Mobile / API solutions.
     1. Buyers do not need to specify all of the below requirements, and can design outcome based solutions to suit their needs. The Buyer can award a Call-Off Contract via completion of a Competitive Selection Procedure, or source defined solutions from the Digital Platform
     2. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
     3. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel
     4. Capabilities for each solution may include some or all of; supply of hardware equipment, hardware connectivity, system implementation and configuration, integration with existing systems, validation and calibration, ongoing technical support,and term service maintenance.
        1. **System Integration and End to End provider**
           1. Outsourced end to end adoption of Smart Ticketing capabilities to incorporate some or all of the capabilities described in this Lot
        2. **Professional and Data Services -** Consultancy and professional services to support Smart Ticketing
           1. Ticketing Management and policy guidance
           2. Ticketing revenue and economic guidance, including revenue modelling, protection and forecasting services
           3. Passenger communication and connectivity
           4. Timetabling, route map diagramming, rostering support
           5. Service provider performance, key performance indicators and on-time measurement
           6. Service optimisation data and analytics
           7. Ticketing managed services, including customer account management and other system services
           8. [OpRa](https://transmodel-cen.eu/index.php/opra/), the identification of Public Transport raw data to be exchanged, gathered and stored in order to support Study and Control of Public Transport Service.
        3. **Payment Systems and Fare collection solutions -** Services for technology-driven payment and fare collection solutions to support transaction management;
           1. Merchant Acquiring services
           2. Principal Service Providers (PSPs)
           3. Fares Engines
           4. Account based ticketing
           5. Electronic driver ticketing system
        4. **Travel associated hardware for on-vehicle or operational environments -** Services, software and hardware to support delivery of transport ticketing services within vehicles, such as busses, trams, trains or other requirements
           1. Multi Application Driver Terminal, connected vehicle interfaces to support driver control
           2. Vehicle networking devices
           3. Digital displays
           4. Announcement or tannoy solutions
           5. Automated Passenger counting
           6. Closed Circuit Tele-Vision (CCTV) solutions
           7. Connected vehicle solutions (Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I);
           8. Driver behaviour measurement tools, Eco driving and other telematics solutions
        5. **Back Office Tools -** Software, applications and systems that enable operation of ticketing systems and associated components, including but not limited to;
           1. Travel data systems to enable

data management systems,

journey planning,

disruption management,

* + - * 1. ITSO Host Operator Processing Systems (HOPS)
        2. Customer Relationship Management Systems
        3. Token Generation (Ticketing Capability)
        4. Financial reporting & other tools
        5. Model-based transport demand prediction
      1. **Ticketing Solutions and hardware -** Services, software and hardware to support delivery of ticketing
         1. Fare capping
         2. Tap-in / Tap-Out and Tap and Go solutions
         3. Ticketing Hardware and supporting systems

Cashless systems

electronic ticketing machines

point of sale hardware validators

handheld devices, including retail and inspection

ticketing gates

* + - * 1. Flexible ticketing capabilities
        2. Multi-operator and Multi-modal ticketing
  1. **LOT 7c – Transport Network Solutions** covers back office requirements within Transport. This involves intelligent asset management capabilities, system packages, software and services to support network operation and management.
     1. Capabilities for each solution may include some or all of; supply of hardware to support systems, hardware connectivity, system implementation and configuration, integration with existing systems, validation and calibration, ongoing technical support,and term service maintenance.
     2. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection. This list is not exhaustive and Buyers may include standards or requirements not listed.
     3. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel
     4. Where requested by the Buyer, Suppliers will provide a range of Deliverables which may include but are not limited to:
        1. **Intelligent Asset Management -** Development and deployment of digital technologies, hardware and services to support the delivery of whole life asset management. Coordinated activity to realise value from physical assets, and reduce safety risk. Services to support systems of safe operation and maintenance of transport infrastructure through advanced analytics and predictive modelling.
           1. Identification and inventory - cataloguing assets and their condition via asset surveying
           2. advice and research, including asset management, acceptance, planning, leasing advice for buyer determined critical assets
           3. Data management - Collecting, storing and analysing data on the assets to inform decision making
           4. Lifecycle Management - Management of assets across their lifecycle from design to disposal / replacement
           5. energy monitoring, carbon footprint measurement and emissions analysis through collection of historical and real time data from smart meters, sensors and/or IOT devices to support energy consumption monitoring and reduction
           6. Building Information Management - generating and managing digital representations of a physical transport assets
           7. Transport technology asset management, fault management and diagnostics;
           8. Highway infrastructure asset management systems and platforms
           9. Predictive maintenance - collection of real time data from sensors and IOT devices to support condition monitoring and proactive maintenance
        2. **Transport Management Systems** - Software platforms that support operation and optimisation of the network, and control safety and incident response following the input of data from operational sources, such as;
           1. coordination of maintenance works
           2. Deploying roadspace planning & works management
           3. Implementing Traffic Regulation Orders
           4. Planning and scheduling

timetabling solutions

Optimisation of timetables

rostering and dispatching

* + - * 1. control of tunnel and bridge systems
        2. response to incident or congestion
        3. management of traffic flow (Contra-flow)
        4. fleet management and tracking solutions
        5. Urban Traffic Control (UTC) and other signal control systems
      1. **System Advice, Warnings and Guidance** - Back-office systems to optimise and manage traffic in urban areas. Aiming to reduce congestion, improve safety and make the network more efficient.
         1. Co-operative ITS - Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) connected and autonomous vehicle systems;
         2. Transport prioritisation systems including green light coordination
         3. Back-office traffic monitoring systems
         4. Control Centre technologies for operator control
         5. Incident detection and response systems
         6. Traveller information systems
         7. Intermodal Coordination
      2. **Supervisory Control and Data Acquisition (SCADA)** - used for real-time monitoring and control of complex networks.
         1. Operator interfaces
         2. Data sources (outstations)
         3. Communication & network infrastructure
         4. Logic programming and decision control
         5. Common Database Integration
         6. Database management
         7. Enterprise Asset Management - Management lifecycle of assets
         8. Geographical Information Systems - spatial data, mapping and visualisation software
      3. **Technology driven transport service providers** - Technology led capabilities for suppliers to deliver managed service for transport for employees, students or vulnerable users. Suppliers may include private transport providers for the public sector or active travel capabilities of bikes, eBikes, scooters or other transport services. Transport Service Providers should not include purchase or ownership of fleet vehicles like cars but may provide ownership of active travel assets (bikes, scooters etc). These capabilities should not deliver travel arrangements such as hotel bookings, or train ticket bookings.
         1. User / passenger support on gaining access to the service, including any payment, software applications or ticketing requirements
         2. Back office solutions and applications to support acquisition of data to support reporting and metrics of the service provided. Journey monitoring and usage statistics
         3. Safeguarding reporting and information for users, or families of users of the service
         4. account management and customer service support for Buyers and their users
         5. Supply chain management of transport companies providing the vehicles and arrangements
         6. Service optimisation for the user, improving journey times, route efficiency and/or coverage based on buyer requirements
         7. Supporting the buyer with service marketing, training and information on the service

# LOT 8 - Passive and Active Infrastructure

* 1. Lot 8 is based around technologies and services for infrastructure that has a role in enabling management of the network. Buyers can award a contract via completion of a Competitive Selection procedure, or source defined solutions from the Digital Platform.
  2. Capabilities for each solution may include some or all of; asset survey, supply of equipment and any required control systems. System installation and configuration, integration with existing systems, validation and calibration, ongoing technical support, any specialist technical training for delivered solutions, and term service maintenance, including operational reactive repair and maintenance of highway, rail and other assets. Asset design services other technical design services may be included only as an addition to the main activity
  3. A Buyer may require capabilities to deploy technologies in an operational environment as a Condition of Participation. “Technology Associated Minor Works”. These works may require relevant insurances and evidence of capability to be defined by the Buyer. This agreement is not intended for the provision of Works only contracts, and must include scope relevant to one or more technology assets.
  4. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
  5. At contract exit Suppliers must provide all learning and knowledge developed as part of a contract, to support and enable knowledge transfer to the Buyer and their personnel
  6. **Lot 8a - Networking Devices** Systems, equipment and connectivity services to support the delivery, installation, and support of wired, wireless, and mobile transport communications. Mobile data communications infrastructure to support device connectivity and communication;
     1. IoT device connectivity technologies in Transport i.e. routers, modems, mesh networks
     2. Secure and resilient device services, including Data SIMS packages for operational technologies and ITS applications
     3. In-vehicle connectivity and systems including eCall SOS
     4. Vehicular WiFi equipment;
     5. Dedicated Short Range Communications (DSRC) equipment;
  7. **Lot 8b - Cabinets, Furniture, Storage & Ancillaries -** Supply of goods, and where required, services of installation. Asset design services other associated services may be included only as an addition to the main activity;
     1. **Equipment cabinets**
        1. Electrical and Data Cabinets;
        2. Frames and security straps;
        3. Power Supply requirements;
        4. Ancillaries / Cables etc;
     2. **Furniture / Fencing / security**
        1. Seating - Various forms of seating and materials, such as stainless, concrete or wood products for benches, picnic tables, bus stop, train or other;
        2. Bus Stops and pedestrian shelters;
        3. Safety Railing, balustrade and bollards;
        4. Varioguard and other vehicle restraints
        5. Hostile Vehicle security bollards ;
        6. Planters;
        7. PAS68 compliant Hostile Vehicle security bollards;
     3. **Equipment Storage;**
        1. Smart lockers for operational equipment;
        2. Cycling storage infrastructure;
     4. **Minor Structures;**
        1. Columns, Posts;
        2. Bracketry & Consumable fixings;
     5. **Ancillaries;**
        1. Cabling;
        2. connections;
        3. PPE and uniform;
  8. **Lot 8c - Lighting and Electrical installation -** Permanently deployed lighting solutions for all transport modes and uses as defined by the Buyer.
     1. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection, listed in Annex 1 of this specification. This list is not exhaustive and Buyers may include standards or requirements not listed.
     2. **Lighting Services**
        1. Lighting control systems;
        2. Survey and Asset review;
        3. Lighting plan designs;
        4. Upgrade of existing assets to high efficiency lighting (e.g. CMS & LED);
     3. **Street and Exterior Lighting Equipment**
        1. Lighting and equipment for road signs, Bollards, Central beacons and Zebra crossings;
        2. ancillary equipment - such as street lighting consumables, cables, ambient lighting sensors and control modules
        3. columns - Various forms of columns from various materials, such as fibre reinforced polymer composite, aluminium, steel
        4. luminaires - various types of lightning technology, including Fluorescent, High pressure sodium, Light Emitting Diode (LED), Catenary lighting, Mercury vapour lamps, Metal Halide lamps, Incandescent;
        5. Switchgear - electrical disconnect switches, circuit breakers, fuses, and lightning arrestors;
     4. **Electrical connections**
        1. District Network Operator engagement
        2. Power and Data cabling (copper and fibre optic);
        3. Energy network telemetry devices
        4. Connectors;
  9. **Lot 8d - Traffic Management Technologies** - Suppliers who can deploy traffic management technologies and services. Requirements may include management of traffic during works, events, management of services to deliver Traffic Regulation Orders. Traffic management design services, and other associated services may be included only as an addition to the main activity;
     1. **Permanent Installations** - Traffic management technologies and associated systems that are permanently deployed
        1. Controlled crossings, including Zebra, Pelican, Puffin, Toucan or Pegasus crossing infrastructure
        2. Delivery of electrical, networking and other devices to enable management of the installation
     2. **Temporary Installations** - Traffic management technologies and associated systems that are permanently deployed
        1. Deployment for the purpose of trialling new configurations,
        2. Services managing traffic during works, events, managing Traffic Regulation Orders, and compliance as required by the Buyer.
        3. Temporary traffic management signs and signalling;
        4. Semi-Permanent Traffic Lights
        5. Site protection technologies, such as automated barriers, CCTV, incursion detection and alarms
        6. Temporary Variable Message signage
        7. Off-Grid power solutions
  10. **Lot 8e - Detectors, Informing and Communication Technologies -** Systems, hardware and software to support operational technology requirements in the transport sector. Includes detectors, which obtain data, information systems to display information for travellers, and emergency telephony and radio equipment for traveller safety, or infrastructure management
      1. Buyers may request additional standards or other technical compliance requirements as Conditions of Participation in a competitive selection.. This list is not exhaustive and Buyers may include standards or requirements not listed;
      2. **Detectors -** Permanently deployed technologies solutions to acquire data that inform action within transport or enforcement network management;
         1. Closed Circuit Television for non-enforcement applications
         2. Traveller Detection systems
         3. Congestion detection
         4. Priority Detection systems
         5. Incident detection, including stopped vehicles, stranded vehicles and traffic collision detection
         6. Automated footfall / traffic counting
         7. Automated condition survey
         8. Vehicle count and classification
         9. Telematics solutions
         10. Over-height vehicle detection;
         11. Rail carriage weight sensors;
      3. **Information Systems**- Permanently deployed technologies solutions to inform travellers of vital safety or journey information.
         1. Variable Message Signs
         2. Customer Information displays
         3. Automated Speed signs
         4. Tunnel Infrastructure
         5. Real Time information solutions
         6. Vehicle activated signs
         7. Signalling
      4. **Emergency Telephony & Radio -** Permanent or mobile technology solutions to enable communication with control centres or across sites for the purposes of safety and incident reporting / reaction.
         1. Emergency Roadside Telephony
         2. Tunnel safety phones
         3. Satellite phones
         4. Radio - Handheld or fixed radio technologies

# Annex 1 - Lot specific specifications

* 1. Under this agreement, Buyers are enabled to apply additional standards, certifications, accreditations or other requirements as “Conditions of Participation”. The below section provides examples of standards that may be applied by a Buyer. This list is not exhaustive and Buyers may include standards or requirements not listed.
  2. **ISO standards that can be applied to any lot**
     1. [**ISO 8000**](https://www.iso.org/standard/81745.html)- the international standard for the exchange of quality data and information
     2. [**ISO 14001:2015**](https://www.iso.org/standard/60857.html) - recognised standard for environmental management systems (EMS), or subsequent standard as updated from time to time
     3. [**ISO/IEC 20000-1 2011 “ITSM Specification for Service Management”**](https://www.iso.org/standard/70636.html) - helps IT departments ensure their processes align with business needs and international best practices
     4. ISO 22301 - Business Continuity and Disaster Recovery
     5. [**ISO 27001:2022 (security standards)**](https://www.iso.org/standard/27001)- an international standard to manage information security
     6. [**ISO 55001 - Asset Management System**](https://www.bsigroup.com/en-GB/products-and-services/standards/iso-55001-asset-management-system/)- Control risks and asset management costs most effectively
  3. **Other standards that man be applied to any lot**
     1. [**Cyber Essentials Plus**](https://www.ncsc.gov.uk/cyberessentials/resources)
  4. **Lot 1**
     1. [**Alignment with the National Digital Twin Programme**](https://www.gov.uk/government/collections/the-national-digital-twin-programme-ndtp)
     2. [**Alignment with the Gemini Principles**](https://www.cdbb.cam.ac.uk/system/files/documents/TheGeminiPrinciples.pdf)
  5. **Lot 2**
     1. [**Open Source, Open Standards, and Reuse**](https://www.gov.uk/government/publications/open-source-open-standards-and-re-use-government-action-plan) - An open source strategy for government.
     2. [**Technology Code of Practice (TCoP)**](https://www.gov.uk/guidance/the-technology-code-of-practice)- The Technology Code of Practice is a set of criteria to help government design, build and buy technology
     3. [**PAS 2161 specification for road condition monitoring (RCM)**](https://pages.bsigroup.com/l/35972/2024-09-23/3t86yvr/35972/1727087838uPbLStU3/PAS_2161.pdf) **-** Road condition monitoring (RCM) data important to understand and manage the condition of networks.
  6. **Lot 3**
     1. [**Traffic Signs Regulations and General Directions (TSRGD)**](https://www.tsrgd.co.uk/) - a regulatory document that outlines the designs and conditions of use for traffic signs and road markings in the UK
     2. [**BS 5489-1:2020 Design of road lighting. Lighting of roads and public amenity areas - code of practice**](https://www.thenbs.com/PublicationIndex/documents/details?Pub=BSI&DocId=329296)- general principles of road lighting including aesthetic, technical aspects, operation and maintenance
     3. [**The Safer Parking Scheme**](https://parkmark.co.uk/about-the-safer-parking-scheme#:~:text=The%20Safer%20Parking%20Scheme%20is,Policing%20and%20Crime%20(MOPAC)) - national standard for UK car parks that have low crime and measures in place to ensure the safety of people and vehicles
     4. [**Alliance for Parking Data Standards**](https://www.allianceforparkingdatastandards.org/) - consensus-built international standard establishing a common language for data elements and definitions in the parking, transportation, and mobility sector
     5. [**Payment Card Industry Data Security Standard (PCI DSS)**](https://www.pcisecuritystandards.org/about_us/) - development, enhancement, storage, dissemination and implementation of security standards for account data protection
     6. [**New Roads and Street Works Act 1991**](https://www.legislation.gov.uk/ukpga/1991/22/contents)
  7. **Lot 4**
     1. [**PAS 4023:2023**](https://knowledge.bsigroup.com/products/selection-deployment-and-quality-control-of-low-cost-air-quality-sensor-systems-in-outdoor-ambient-air-code-of-practice?version=standard) - Selection, deployment and quality control of low-cost air quality sensor systems in outdoor ambient air, or subsequent standard as updated from time to time
     2. [**MCERTS**](https://www.gov.uk/government/collections/monitoring-emissions-to-air-land-and-water-mcerts) **-** The Environment Agency process to approve people, instruments and laboratories, including indicative MCERTs certification.
     3. [**The Air Quality Directive (2008/50/EC)**](https://www.legislation.gov.uk/eudr/2008/50/contents) - Sets limits for pollutants that can harm human health and the environment, such as nitrogen dioxide (NO2) and particulate matter (PM10 and PM2.5)
     4. [**PAS 2060 - Carbon Neutrality**](https://www.bsigroup.com/en-GB/products-and-services/standards/pas-2060-carbon-neutrality/) **-** Carbon neutrality verification provides a recognized method of substantiating genuine claims so you can achieve these ambitions.
  8. **Lot 5**
     1. [**National ANPR Service technical specifications**](https://www.gov.uk/government/publications/national-anpr-standards/national-anpr-service-technical-specifications-accessible-version)
     2. [**Vehicle Type Approval Certification (VCA)**](https://www.vehicle-certification-agency.gov.uk/vehicle-type-approval/)
     3. [**National ANPR Standards**](https://www.gov.uk/government/publications/national-anpr-standards)
     4. [**Home Office type approval (HOTA) of road traffic law enforcement devices (RTLED)**](https://assets.publishing.service.gov.uk/media/672e1e703b601d048796ae54/HOTA+RTLED+Submission+Guidance+v3.0__2_.pdf)
  9. **Lot 6**
     1. [**Open Charge Point Protocol (OCPP)**](https://driivz.com/glossary/open-charge-point-protocol-ocpp/) - open-source communications standard that defines how charging stations and back-end EV charging management platforms exchange information
     2. [**Open Charge Point Interface protocol (OCPI)**](https://evroaming.org/ocpi/) - supports connections between eMobility Service Providers, and Charge Point Operators who manage charge stations
     3. [**PAS 1899**](https://www.bsigroup.com/en-GB/insights-and-media/insights/brochures/pas-1899-electric-vehicles-accessible-charging-specification/) - accessible electric vehicle charge points for those with diverse accessibility needs
     4. [**Electric Vehicles (Smart Charge Points) Regulations 2021**](https://www.gov.uk/guidance/regulations-electric-vehicle-smart-charge-points) - Ensure charge points have smart functionality, allowing the charging of an electric vehicle when there is less demand on the grid, or when more renewable electricity is available
     5. [**Public Charge Point Regulations 2023**](https://www.gov.uk/government/publications/the-public-charge-point-regulations-2023-guidance/public-charge-point-regulations-2023-guidance)- ensure that the experience of consumers using public charge points across the United Kingdom is consistent and positive
  10. **Lot 7a**
      1. [**Secure by Design**](https://www.gov.uk/government/collections/secure-by-design) - Management of threats posed by poorly secured consumer connectable products
      2. [**Technology Code of Practice (TCoP)**](https://www.gov.uk/guidance/the-technology-code-of-practice)- The Technology Code of Practice is a set of criteria to help government design, build and buy technology
  11. **Lot 7b**
      1. [**ITSO -**](https://www.raildeliverygroup.com/files/Publications/services/rsp/RSPS3002-02-01_ITSO_in_National_Rail_specification.pdf) The ITSO standard, or Rail Delivery Group requirements aligned to rail
      2. [**RSPS3002**](https://www.raildeliverygroup.com/files/Publications/services/rsp/RSPS3002-02-01_ITSO_in_National_Rail_specification.pdf) **-** ITSO in National Rail Specification
      3. [**RDG accreditation**](https://www.raildeliverygroup.com/our-services/retail-commercial/rdg-accreditation.html) - Rail Delivery Groups’s Ticket Issuing Systems accreditation process certifies systems that sell or issue tickets to travel on the National Rail network
      4. [**TransXchange**](https://www.gov.uk/government/publications/transxchange-downloads-and-schema) **-** the UK nationwide standard for exchanging bus schedules and related data
      5. [**General Transit Feed Specification (GTFS)**](https://gtfs.org/documentation/overview/) **-** a feed specification that defines a common format for static public transportation information
      6. [**National Public Transport Access Nodes (NaPTAN)**](https://beta-naptan.dft.gov.uk/) **-** the national dataset for uniquely identifying all public transport access points in England, Scotland and Wales
      7. [**National Public Transport Gazetteer (NPTG)**](https://beta-naptan.dft.gov.uk/) **-** geographical data for all cities, towns, villages and other localities in England, Scotland and Wales
      8. [**Bus Open Data Service (BODS)**](https://www.bus-data.dft.gov.uk/) **-** service provides timetables, bus location, and fares data for local bus services across England
      9. [**BS EN 15531**](https://landingpage.bsigroup.com/LandingPage/Series?UPI=BS%20EN%2015531) - Public transport. Service interface for real-time information relating to public transport operations
      10. [**Real Time Information Group (RTIG)**](https://www.rtig.org.uk/standards) - RTIG are a membership group develop and maintain public transport data standards, with public sector membership
      11. [**Transmodel standards**](https://transmodel-cen.eu/)
          1. **N**[**eTEx (Network Timetable Exchange)**](https://transmodel-cen.eu/index.php/netex/) **-** a CEN Technical Standard for exchanging Public Transport schedules and related data
          2. [**Service Interface for Real Time Information (SIRI)**](https://www.gov.uk/government/publications/technical-guidance-publishing-location-data-using-the-bus-open-data-service-siri-vm/technical-guidance-siri-vm) **-** a European interface standard for real-time public transport operations.
          3. [**Open Journey Planner (OJP)**](https://transmodel-cen.eu/index.php/ojp/) **-** contributes to the creation of an interoperable and seamless travel information network
      12. [**PCI DSS**](https://www.pcisecuritystandards.org/document_library/) **-** standards to help secure payment data environments
      13. [**Secure by Design**](https://www.gov.uk/government/collections/secure-by-design) - Management of threats posed by poorly secured consumer connectable products
      14. [**EMVCo (Transit)**](https://www.emvco.com/specifications/) - Europay, Mastercard and Visa Consortium. Provide a technical baseline enabling any party to develop and deploy products and solutions that support the delivery of safe, reliable payments. Covers Level 1, 2 and/or 3
  12. **Lot 7c**
      1. [**Secure by Design**](https://www.gov.uk/government/collections/secure-by-design) - Management of threats posed by poorly secured consumer connectable products
      2. [**Department for Transport Code of Practice for Mobility as a Service**](https://www.gov.uk/government/publications/mobility-as-a-service-maas-code-of-practice/mobility-as-a-service-code-of-practice)
      3. [**Urban Traffic Management Control Standards**](https://utmc.uk/) - Currently hosted on the UTMC resource portal, but will changing ownership in future
      4. [**Traffic Open Products and Specifications -**](https://topasgroup.org.uk/) Technical Procurement Standards covering traffic control and related equipment
  13. **Lot 8 - All sub-lots**
      1. **Buyers specific technical libraries;**
         1. Buyers are able to apply their own technical drawings, requirements or specification as Conditions of Participation
         2. [**Operational Specification Technical Library**](https://nationalhighways.co.uk/suppliers/design-standards-and-specifications/operational-technology-specifications-library-otsl/) **-** Requirements that National Highways require when utilising this agreement
         3. [**PADS (Parts and Drawings System)**](https://www.padsnet.co.uk/logon.aspx?ReturnUrl=%2f) - Requirements approved by Network Rail for use on their railway infrastructure
      2. [**Secure by Design**](https://www.gov.uk/government/collections/secure-by-design) - Management of threats posed by poorly secured consumer connectable products
      3. [**UK Code of Practice for Consumer IoT security**](https://www.gov.uk/government/publications/code-of-practice-for-consumer-iot-security);
      4. [**ETSI EN 303 645**](https://www.etsi.org/deliver/etsi_en/303600_303699/303645/02.01.01_60/en_303645v020101p.pdf) **-** Global standard for consumer IoT security, or any future update;
      5. [**Design Manual for Roads and Bridges (DMRB)**](https://www.standardsforhighways.co.uk/help?tab=dmrb#the-dmrb)- defines the requirements for every aspect of the road infrastructure
      6. [**Drone and Model Aircraft Code**](https://register-drones.caa.co.uk/drone-code) **-** For flying drones, model aeroplanes, model gliders, model helicopters, and other unmanned aircraft systems outdoors in the Open A1 and A3 categories
      7. **Technology Associated Minor Works -** Deployment of Infrastructure from this lot may require additional capabilities involving working procedures in active environments, such as track or road side projects. Additional capabilities may include, site visitation, site readiness and minor construction such as minor foundations or excavation, existing asset decommissioning, site and asset inspections, and capabilities to deploy and operate safe sites. Buyers may require Suppliers to demonstrate this capability, or demonstrate their outsourcing arrangements to ensure compliance with standards, regulations and specification requirements when procuring from this Framework
  14. Lot 8a
      1. Specifications and technical requirements as stipulated by a Buyer
  15. Lot 8b
      1. Specifications and technical requirements as stipulated by a Buyer
  16. Lot 8c
      1. Specifications and technical requirements as stipulated by a Buyer
      2. [**BS 5489 - Road lighting**](https://landingpage.bsigroup.com/LandingPage/Series?UPI=BS%205489)
      3. [**BS 5266-1:2016 - TC Emergency lighting - Code of practice for the emergency lighting of premises**](https://knowledge.bsigroup.com/products/emergency-lighting-code-of-practice-for-the-emergency-lighting-of-premises?version=tracked)
  17. Lot 8d
      1. Specifications and technical requirements as stipulated by a Buyer
  18. Lot 8e
      1. Specifications and technical requirements as stipulated by a Buyer