Decarbonising the Local Authority Fleet

Fleet Management System Guidance

CCMA
Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

LGMA
Local Government Management Agency

CARO

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Disclaimer

This guidance and accompanying annex has been prepared in good faith based on the research within the local government sector regarding their fleet management systems.

The document is not intended as a step-by-step guide for local authorities in the procurement of their fleet management system, but should provide useful information and recommendations when considering appropriate approaches to tendering for a new system or augmenting an existing one. Professional assistance should be employed when making decisions concerning the installation and connection of fleet management systems. The information was accurate and up to date at the time of issue.

Contents

Introduction

This Fleet Management System Guidance document was developed by the Decarbonising the Local Authority Fleet working group, which was established under the Climate Action, Transport, Circular Economy and Networks Committee (CATCEN) of the County and City Management Association (CCMA). The working group's remit is to build on the assistance already developed by the CCMA to help and guide individual local authorities to realise emission reduction and energy efficiency targets for their fleets[1].This guidance will illustrate how a fleet management system (FMS) can assist local authorities in the context of decarbonisation.

Context

Local authorities (LA) have committed to a 51% reduction in greenhouse gas emissions by 2030 and net zero by 2050. Adherence to these legally defined targets is set out in climate legislation[2]. Vehicles are significant contributors to carbon dioxide (CO_2) emissions and so LA's must commit to making the transition to more sustainable mobility by replacing internal combustion engines with electric vehicles and alternative fuelled vehicles.

As part of the process, LA's are modernising their FMS to ensure renewable fuelled vehicles become an integral component of fleet and the day-to-day vehicle operations are as efficient as possible to continue meeting service delivery requirements. This approach further supports the *Avoid | Shift | Improve* approach advocated in the CCMA *LA Fleet Strategy to Decarbonisation*, where the need to travel should be reduced or avoided; a shift should be made to alternative modes of transport where possible; and increased vehicle efficiency is to be sought through improved vehicle and fuel technologies.

The existing fleet within LA's tends to be managed by multiple systems at present, both manual and electronic, which include vehicle and maintenance registry, vehicle tracking, fuel monitoring and financial/invoicing management systems. By implementing a FMS that provides for carbon emissions, it is envisaged that future systems will bring together key elements for co-ordinated decision-making, to assist in meeting the climate targets.

[1] This guidance builds upon and should be read in conjunction with the two previous publications by the CCMA: LA Re-imagining Transport – Early Interventions (2022): Available at: local-authority-reimagining-transport-early-interventions-june-2022.pdf (lgma.ie) LA Fleet Strategy to Decarbonisation (2023): Available at: New strategy to decarbonise local authority vehicle fleets - LGMA.

[2] Oireachtas 2021: Climate Action and Low Carbon Development (Amendment) Act 2021. Available at: Climate Action and Low Carbon Development (Amendment) Act 2021 (irishstatutebook.ie)

Purpose

The purpose of this document is to specify the functional requirements for a FMS, informed by stringent emission reduction obligations. It aims to assist LA's to tailor a system suitable to meet their needs in identifying baseline emissions sources and data, managing and monitoring emission reductions and supporting the integration of carbon considerations in decision making processes for the future management and procurement of fleet.

The wide range of factors to be considered by LA's include:

- Emissions' monitoring
- Asset management and maintenance
- Tracking of vehicles
- Fuel monitoring and type
- Compliance and health & safety
- Cost savings and re-investment

LA's will have varying requirements from a FMS, depending on the size of their fleet and the structures in place to manage and operate it. The requirements from a FMS will therefore not be consistent across the sector. Annex 1: *Specification of Requirements*, supports LA's in considerations for tendering a climate informed, coordinated and robust FMS.

Whether LA's decide to adapt current fleet management set ups by adding on other systems to those currently in place or to procure a new FMS, there are some main elements recommended for incorporation. However LA's choose to configure their FMS, it is critical that systems are in place to gather and monitor vehicle emissions to enable them to provide evidence of their climate action achievements in the decarbonisation of their fleet. A list of these key elements to form part of a FMS is provided below.

Appreciation is extended to South Dublin County Council for their contribution to the specification of requirements on elements required for a FMS.

Key elements of a FMS

As LA's begin to decarbonise their fleet and incorporate new technologies, a suitable FMS will aid in monitoring, fuel consumption and other operational practices to ensure a fleet that is compliant with evolving emission regulations.

Fleet management involves the optimal planning, supervision, and control of fleet operations using available resources while considering internal and external factors. It focuses on integrating organisational processes with information systems. **Key aspects of fleet management include vehicle tracking, health and safety monitoring, fuel and speed management, route planning, and driver management.** The fleet management process involves continuous monitoring, surveying, implementing improvements, analysing data, making proposals and implementing them. Fleet managers are supported in the management of their fleet with an efficient and multifunctional FMS. **To demonstrate high levels of climate responsibility, a FMS will become increasingly significant.**

As a minimum, it is strongly encouraged that LA's engage and operate a FMS that is responsive with:

- The capability of tracking and monitoring the key aspects of vehicle and plant operations and compliance. This includes specific aspects for alternatively fuelled vehicles and plant.
- Providing actionable insight that contributes towards improving fleet efficiencies and safety.
- Allowing a fleet operator to choose the level of functionality required.

FMS recommended main characteristics

Emissions monitoring:
Ability to monitor fossil and alternative fuels, including zero emission-based ones.

Usability and reporting:
User friendly dashboard interface, with system manuals and online training videos, enabling fleet data collection and reporting requirements to be easily accessible.

Asset management:
Capacity to ensure good oversight of vehicle assets (including external hire) - maintenance, legislation compliance and utilisation of the fleet in accordance with policy and guidelines. Will include vehicle benchmarking and be capable of cost control and budgeting of the total life cycle of the fleet.

Integration of systems:
Interact with the LA's critical systems, including procurement and financial management, to streamline processes and make informed decisions e.g. raising purchase orders, approvals, and payments, as well as linkage to the vehicle and parts purchasing system.

Enhanced Global Positioning System Units (GPS) tracking:
Provide an approach to overseeing vehicle operations, route optimisation, peak efficiency, as well as health and safety.

Strategic fuel management:
Offer real time monitoring enabling managers to track fuel levels, consumption patterns and identify inefficiencies.

Optimising driver behaviour:
Investment into the human element of the fleet, providing insights into driver activities, health and safety management, including training and accident monitoring.

Digital documentation management:
Streamlining e-docs to allow for the recording of driver critical data for compliance purposes, daily vehicle checks, maintenance requests, the recording of fleet maintenance activities including the completion of job cards and inspections.

Next steps

At c.6,500 vehicles, the local government sector collectively owns the largest fleet in Ireland. As part of the national climate obligations and regulatory requirements, each LA is required to report and account for its own progress in meeting decarbonisation targets, which includes the emissions and energy usage of all vehicles, whether owned, leased or hired.

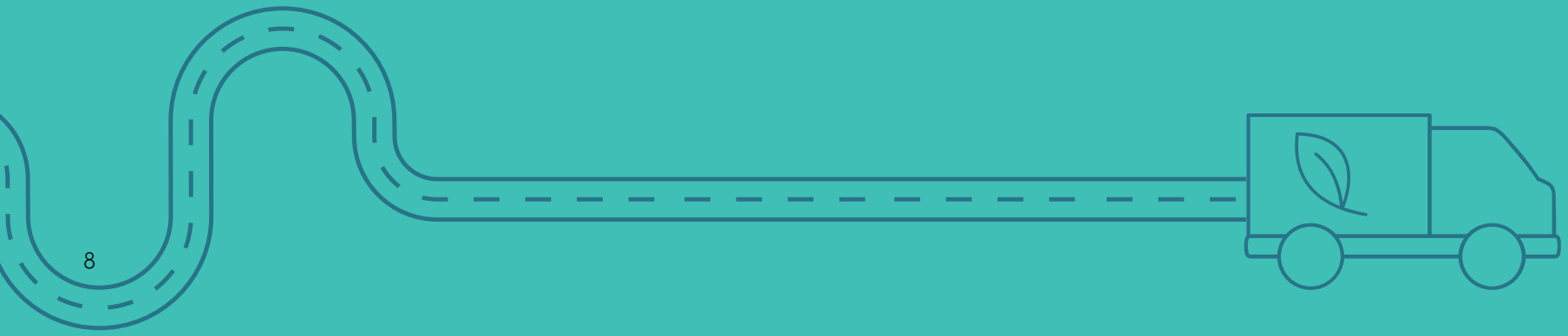
The FMS is an important tool for short, medium and long term tactics on the pathway to net zero by 2050. It assists in identifying key considerations to lowering emissions and energy use, it supports the capacity of the human resources and is at its best when aligned with procurement, financial management and other critical business systems. The data it collects and collates can also champion the work of the LA in its decarbonising initiatives and reduction of greenhouse gases.

A FMS is key to accelerating the informed transition to a more sustainable and renewable fleet. LA's are strongly encouraged to utilise a FMS to its optimum functionality as part of the decarbonisation process.

Recommendations

- **If you do not have a FMS** – understand the accountability reporting requirements and then identify what your LA needs to meet those in respect of decarbonization interventions, emission monitoring, budgeting, reporting etc.
- **If you have a FMS** – what systems is it integrated with? What do you need to consider in terms of identifying the necessary data you require for reporting and making informed decisions?

Fleet decarbonisation action is required across the whole of each LA, it is not just restricted to the Fleet Manager. Consult and collaborate with Senior Management, Finance, Human Resources, Energy Performance Officer, Climate Action Team and Fleet Drivers so there is awareness of the potential of the FMS and any unforeseen potential difficulties can be avoided.



Annex 1: Specification of requirements

General Specifications

The FMS will have to meet the following general requirements:

Details from the draft specification of requirements below may inform the development of tender documentation for a FMS. It elaborates on the characteristics and requirements referred to in the main part of this guidance to consider as specific elements to be included in your fleet management system, as well as additional features for potential future use.

It takes into account the reporting obligations of LA's in regard to complying with legislation, reporting on emissions, budgeting, health and safety etc. There is also consideration of how the tool can contribute to the efficiency of the local authority in the management and maintenance of their fleet, owned or leased and alignment with critical business systems.

- **Integration:** an integrated computer system is required together with related support/maintenance, and training/ consultancy services to effectively deal with the business functionality associated with the LA's Mechanical Services function.
- **ICT vision:** the FMS must support the LA's strategic Information and Communication Technology (ICT) vision of enabling smarter local government though its ICT mission of providing best in class secure solutions.
- **Implementation timeline:** there is an expectation of a maximum project implementation timeline of three (3) calendar months duration.
- **Design philosophy:** a modern computer system is required with "digital first" as its design philosophy for back office and with "mobile first" as its design philosophy for staff access, contractor, and remote working.
- **Functionality:** The system should feature core functionality, which addresses the functional specifications listed below with appropriate facilities for staff, council, mobile and third party/contractor use. Any proposed solution must offer comprehensive functionality for each of the functional requirements listed.
- **Current and future use:** the system must be scalable and support the current mechanical activities.

Essential ● Optional ●

Functional specifications

● Fleet Inventory data capture

Include vehicle, plant and external hire and the vehicle identification number (VIN). Storage of fleet data sheets and Owner Manuals.

● Compliance monitoring

Incorporating workflows with all the steps in the compliance monitoring requirements under the current council's policy and current legislation, as well as the ability to update if legislative changes occur. Including the legal proceedings process in accordance with legislation. Comprising of but not limited to:

- driver licensing
- digital daily walk-around checks
- motor tax
- motor insurance
- roadworthy tests
- CVRT tests
- periodic inspections
- hoist and lifting inspections.

● Management and maintenance scheduling

Ability to take on line repair request; inbuilt schedule of rates, with material and labour element; workflows incorporating all steps within response maintenance repair process, including automatic and semi-automatic referral to contractor or tradesman, real time tracking of repair status; initial repair diagnostics; referral to insurance; interface with out of hours service; ability to record when repair is completed, parts used and any follow up actions needed via mobile working.

Workflows to include scheduling inspections/stock surveys; mobile working for real time inspection data; ability to analyse inspection results; refer to contractor and track progress in real time; auto send information to sections and track queries; track budget; track completion sign off, completion certs by mechanics, store updated certs and attributes against fleet.

Set reminders for next planned maintenance. Ability to include maintenance and job records. Capacity to produce report from all the above data for reporting to Director and Departments as required.

● Provision of Driver App

To include walk around checks, accident reports etc.

● Fuel monitoring

For fossil and alternative fuels as and when they are included in the fleet. Including monitoring of electrical vehicle charging capacities. Fuel card integration.

Essential ● Optional ●

● Camera/Dashcam systems

Camera/Dashcam systems, including the provision of hardware, installation, deinstallation of devices, maintenance, training, and ongoing support. To be linked to the fleet tracking system and must provide a secure mechanism to record and send data from vehicles and plant during their operational use. Ensure this requirement is available as future legislation may dictate use.

● Accident monitoring

Incorporating workflows for all steps within the accident monitoring process, including accident sign off and reporting and all steps in the claims process including interaction with external parties, real time tracking via mobile working with photo upload and GPS, ability to receive real time information from external parties, ability to track costs and repair attributes, utility set up, as well as to initiate/prompt payment process and report on all aspects of accidents.

Full assessment and report functionality, tracking and monitoring of cases, ability to produce reports for external agencies in specified formats, ability to refer cases to other sections with only necessary information, a high level of security around all information stored.

Ability to also store information on queries received and actions taken.

● Maintenance – Procurement of Materials

In-built schedule of rates, with material and labour element. Ability to manage stock levels centrally and mobile units including future planned mobile van repair units, through pre-set minimum stock levels, with reminders when levels are low and auto generation of list of stocks needed and semi-automatic email generated to contracted supplier. Tracking of each item of stock taken from the stores, with that item of stock assigned to the fleet item it has been installed in, with details of the tradesman who took out the stock. Ability to track all items ordered and delivered from suppliers, and facilitate stock takes.

● Manage Total Cost of Ownership (TIC)

Fleet acquisitions, vehicle benchmarking, disposal of fleet, idling and emissions. Incorporating workflows for all steps within the acquisition and procurement process, including, fleet replacement requests, additional fleet requests, inspection, valuation, all approvals, all payments, referrals for approval, payments etc to other departments. Application form available to complete on-line, including mandatory field, document upload, initial eligibility checks, etc., and ability for applicant to check status. Disposal of Fleet and recording of Auction details and updating the fleet inventory.

● Access to online workshop application

To allow access to technical vehicle data, specifications, diagnostics, and repairs for vehicles.

● Future functionality capabilities

Provider must be open to further development of the system to address organisational needs and maximise the use of emerging technologies.

Essential ● Optional ●

GPS Data Solution

● Vehicle tracking

Vehicle tracking including the provision of hardware (Global Positioning System Units), installation and de-installation of devices, maintenance, training, and ongoing support. The fleet tracking system must provide a secure mechanism to record and send data from vehicles during their operational use.

It should include the following processes: recording vehicle journey information both real time and historic, including details of vehicle start/finish times and exact locations to street level. Journey distance, duration, average speed, fuel/oil economy, operational costs.

● Other activity (e.g. road sweeping, jetting of drainage lines, grass cutting, bin lifts, salt spreading, bitumen spraying and patching) – locations, times, durations. Driving, idling and stationary time. Driver ID. Maintenance/servicing reminders based on mileage, time and/or engine hours. Exception alerts via email and/or SMS texts. Management information. System queries. Comprehensive reporting to satisfy both management and operational requirements, including exception reporting, fleet performance analysis, monthly reports from supplier on driver ID use, vehicle inactivity, idling, and support requests. System control and maintenance (i.e. upgrades, backups etc). Auditing of system use.

● Installation of new/replacement tracking systems

Each system must come with a GPS tracker unit and a driver ID system complete with Audible Warning Device (System operator should have the ability to turn off the AWD). The AWD must emit a loud perceptible noise if the vehicle is operated without the presentation of a driver ID key (System operator should have the ability to manage the AWD).

All new/replacement tracker units must be installed within the vehicle, in a discreet and secure location, which cannot be easily accessed by the driver/operative. A photograph must be taken of new/replacement units in their installed location. All new/replacement tracker units must be fitted with some mechanism (e.g. tamper proof sticker) to identify on inspection if the unit has been tampered with.

All electrical connections must be soldered and insulated. All excess wiring must be tidied away in an acceptable fashion. The driver ID receiver must be positioned in a convenient location. Following initial fleet installation, any additional new units must be installed within five working days, following request. All defective units must be repaired/replaced within five working days of the defect being reported.

Essential ● Optional ●

● Removal of tracking system

All requests to disable/remove units must be completed within five working days.

● Off road vehicles/plant

It is also required to have the GPS data available from the off-road vehicles/plant items for the purposes of using/managing the data in GIS mapping software applications. Therefore, the supplier must indicate the accuracy of the GPS positioning system. The raw data must be available in a standard 'off the shelf' format (e.g. excel) and be available in real time.

● The following features must be included as a minimum:

- Alarms/alerts for unauthorised use, out of hours use, unexpected changes in fuel levels/usage, excessive period of engine idling, harsh acceleration and harsh braking. The alarms/alerts set up for each vehicle must be configurable for individual local authority areas/depots to allow for regional variations.
- Url link to access fleet telematics information for each item from fleet system.
- Geofence – Circular, Polygonal and Route.
- Notifications within the system.
- Recording of auxiliary equipment/PTO is on or off.
- Fuel card integration.
- Driver identification key fob and readers.

● Additional desirable functionality for the system features would include:

System features in addition to the minimum features which can be demonstrated to provide enhanced safety or increased fleet security and efficiency.

Essential ● Optional ●

Website and mobile device solution

Customer portal

The system must provide a mobile first customer portal featuring responsive design. Customer self-service functionality is to be provided in the portal and should be complemented by mobile phone apps on both Apple and Android platforms at minimum.

Access to the portal

Must be secure and should be opt-in in its design. Both the portal and mobile apps should have comprehensive customer self-service and notification functionality enabling service requests, reminders, enquiries, and updates to be made on all functional requirements as listed.

Job progress monitoring

For example real time information on status of repair and inspection works, via mobile working with GPS and photo up-load.

Appointments scheduling

Such as repair and inspection appointments to enable efficient and effective use of Council resources, this should have the option for department section self-service and include the provision of functionality to handle cancellations/reschedule or otherwise manage a service appointment or booking should deviations from schedules be required.

SMS text messaging/customer interaction

Staff portal and mobile app, as well as automatic and semi-automatic SMS messaging, and web chat.

Lone worker and mobile working

Incorporating safety features for lone working with GPS and alerts, and the ability to securely access the system off site over the internet.

Essential ● Optional ●

Reporting solution

● Fleet management dashboard

User-friendly capabilities to provide real time information that can be streamlined to the individual's requirements including data capture, reports, budgets, KPIs etc. as required. Ability to generate bespoke reporting. Must be capable of producing graphical reports.

● Energy performance and decarbonisation data

Telematics system to extract live vehicle performance information data directly from the on-board diagnostics (OBD) of the vehicle or plant via the OBD II port where possible. Data collected to provide real-time information related to climate action targets. Information extracted to include live fuel tank levels and in the case of EVs, battery charge levels. Criteria that should be used in assessing this should include how frequently desired data points are captured and transmitted and what makes and models of vehicle the supplier can extract this information for.

Additional information available to extract from the OBD to be outlined for reports and alerts including vehicle health information and to ensure the operation of the vehicle or plant in a safe manner (e.g. correct use of lifting equipment, seat belt, weight of load). Where it may not be possible to extract information from the OBD, the supplier should offer an alternate solution to track fuel consumption and energy performance.

● Assets record and valuations of fleet

Full record of all fleet, allowing for reconciliations to fixed asset register in accounting system, including total cost of ownership, link to databases for updating when fleet changes.

● KPIs

Ability to set up easy editable reports on KPIs .

● Statistical reporting

Statistical information that needs to be periodically submitted as part of statutory reporting.

● Data and statistics capture, and reporting

Able to capture, store and easily report on all data; as well as delete and partial delete of records as required. Ability to set rules in relation to automatic deletion.

● Sample reports

The tenderer must supply sample reports as part of the tender proposal/submission to demonstrate compliance with the specification. Reports outlining the achievement of project objectives from existing reference sites/systems must also be included as part of the tender proposal.

● Additional desirable reporting functions would include

A solution that offers reports which could be used as part of a structured programme for improving driver behaviour is desirable. The supplier should display evidence of this reporting system used on existing fleets.

Essential ● Optional ●

Technical requirements

● General requirements

- The preference is for a commercial-off-the-shelf solution, which may be customised to meet the specific needs of the local authority.
- The solution must be hosted within the EEA.
- The solution must be mobile friendly and provide optimal viewing experience and usability across multiple device types including smartphone and tablet computers.
- A mobile application for Android and IOS is desirable.
- The platform must be compatible with Microsoft Edge as the standard browser within the local government sector.
- Should be compatible with Windows 10/Windows 11 Operating systems.
- Must work seamlessly in a hybrid work environment.

● Hosting

- Provide for a concurrently maintainable site infrastructure with expected availability of 99.99%.
- Provide for high availability and effective load balancing to ensure that there is a consistency in terms of performance, throughput, minimisation of response times and increased reliability through redundancy.
- The hosting infrastructure should be patched and upgraded to ensure that it is continuously protected against known vulnerabilities and exploits.

● Integration

The system should incorporate open Application Programme Interface (APIs) that facilitate integration with a variety of back-office applications to encompass such technologies as:

- Office 365
- Microsoft .net
- RDBMS (Microsoft SQL Server)
- Various CRM systems (Microsoft Dynamics CRM, Sugar, bespoke CRM system)
- Spatial Databases (inc. ESRI Geodatabase feature class).

● The system must interface with external systems - such as fuel, GPS telematics, SCADA, lifting inspections systems etc via open API or standard data upload, etc. If these are not possible, Robotic Processing Software would be required.

● The system should interface with financial management systems such as Agresso Accounting System and other internal systems as required.

● The system should provide secure and efficient data transfer to enable bi-directional exchange.

Essential ● Optional ●

● User access/authentication

- Staff accessing the system must do so securely. Capability to integrate with Microsoft Entra ID is expected.
- Two-factor authentication must be mandatory for administrative users and optional for all users with Microsoft Authenticator (Android/iPhone) and SMS.

● Data management/storage

- All data must be backed up with (tested) restoration procedures in place.
- Data must be encrypted at rest and in transit.
- The system must have an interface capable of taking on existing data from other sources such as the LA's legacy systems.
- The solution must provide data and file storage with the options to apply tagging, search, indexing, categorisation, retention management etc.
- The LA will retain the rights to all data in the system.
- As per the Government Open Data policy, the platform must have the capability of automatically exporting data in machine readable format.

● Accessibility

The proposed solution must adhere to the relevant parts of the harmonised European standard EN 301 549 V2.1.2 (2018-08). This is the same as meeting all the Level AA Success Criteria from the international guidelines WCAG 2.1.

● Support/service levels

- The LA requires support during core working hours which are Monday – Friday, 9:00am to 5:00pm, excluding ROI public and bank holidays.
- Uptime/Availability Service Level - the proposed solution should provide for at least 99.9% uptime in any 30-day period.
- Full-Service Level arrangements for the support of the system must be outlined as part of the solution.

● Release management and maintenance

- Nominated council staff should receive notification and release notes prior to any software upgrades.
- Details on change management processes and product release cycles should be provided.
- Maintenance arrangements in respect of on-going system development and resolution of system issues must be outlined.

● Exit plan

- The data must be portable and made available to the local authority in Machine Readable Format.
- Upon completion of/exit from the agreement, the supplier must ensure data is provided to the LA in format which can be used by another system.

Essential ● Optional ●

Technical merit of team proposed

● A supplier should provide comprehensive information on the team proposed, clearly indicating each team member's contribution to the project, their precise roles and responsibilities and time commitment. In addition, comprehensive CVs must be provided demonstrating each team member's expertise for the role proposed. Details of the project team (by name), certification of the respondent, and range of skills and experience of the respondent's personnel.

Training proposal

● A supplier must provide a training proposal that includes the following mandatory requirements as a minimum:

- The supplier must include 'workshop' information and training sessions on the system for the local authority personnel.
- The training must be 'train the trainer' type training sessions for the local authority personnel at not less than 10 local authority depots / offices.
- The supplier must provide an approved syllabus and certificates for all trained personnel.
- It will provide a user-friendly interface with, how to use the system manuals and online training videos.
- The cost for the Training Proposal should be included in any Pricing Schedule.

Performance management solution

● Delivery schedule outlining key dates for the FMS to be operational, including integrated global positioning systems.

The performance of the contract will be monitored periodically, beginning with the implementation and integration phase.

Warranty proposal

● The hardware installed must have a minimum of 4 years' manufacture warranty with the option for increased warranty from the vendor.

Green Public Procurement

● Any supplier shall outline its environmental processes and procedures, plans and targets in regard to its policy towards environmental sustainability.

Successful demonstration of the solution

● Suppliers must provide an end-to-end demonstration of the FMS, against the specification. They will also provide a demonstration of the system including innovation to address possible additional functionality requirements.

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