

ANNEX 2: SPECIFICATION

Contract Specification for the Provision of Services to Generate an Optimised Digital Twin and Integrate Data into West London Waste Reporting Systems

1. INTRODUCTION

- 1.1. This specification details the requirements of the Digital Twin Programme which West London Waste Authority (WLWA) began in April 2023. WLWA are seeking to procure support services for the creation of a 'digital twin' version of various collection and cleansing services in the following west London boroughs:
 - LB of Harrow;
 - LB of Hillingdon; and
 - LB of Hounslow
- 1.2. In addition to the creation of a Digital Twin, WLWA also require the Contractor to evaluate the potential for improvements to these services through a service optimisation exercise. Further to this, WLWA will require the service data to be integrated with existing reporting structures including PowerBI for live reporting.
- 1.3. A Digital Twin can be described as an exact electronic copy/true reflection of the extent and performance of services provided by our Borough partners. Ultimately WLWA are seeking to utilise this data to generate accurate, live reporting, monitor performance/efficiency and make informed operational improvements and target limited resources where they are most effective.

2. BACKGROUND

- 2.1. West London Waste has produced a digital twin for many of Hillingdon's services, and then completed rerouting for efficiencies.
- 2.2. At present there is low transparency/availability of round performance data. Collected waste is not recorded by round and there is no automated way to collect/link this information for reporting. In many cases collection rounds are unchanged for several years and do not consider operational changes or the increase in housing stock of the population that they service. This leads to uneven and in many cases inefficient use of resources.
- 2.3. Recording of round-based performance metrics such as kg/hh/wk and capture rates of recyclables are not at present possible and where work has been completed to provide figures, it is limited in value as it is only a snapshot in time. This lack of data contributes to less than optimal operational decisions and minimal understanding of geographical waste flow.
- 2.4. In anticipation of forthcoming changes to national legislation WLWA and our partner boroughs want to ensure collection service data is accessible and as accurate as possible.

3. OUR VISION

- 3.1. The creation of a digital twin for our borough partners is just the first step towards WLWA's 'Smart City' vision.

- 3.2. The WLWA Smart Cities vision is that by 2030 west London service provision for residual waste, recyclables and materials will be efficient, dynamic, fully utilised and generating income where possible. Residents will be fully aware of their local services and engage with them correctly because they're easy to use, they can identify the materials for separating and they understand the benefit to them and others participating.

4. OBJECTIVES OF THE CONTRACT

- 4.1. WLWA is inviting Tenders for the provision of services to generate an optimised Digital Twin and assist with integrating data into WLWA reporting systems.
- 4.2. In April 2023 WLWA launched the Digital Twin Programme, to deliver a fully operational reporting tool (currently PowerBI) that will allow for live data to be utilised for live reporting by the end of March 2026. This contract will address the outputs of year one of the Programme which are:
- 4.2.1. A digital version of the kerbside services, communal services, street cleansing and trade services routes for 3 west London boroughs including details of the service provided to each 'UPRN'.
- 4.2.2. Service optimisation of existing services across Harrow, Hillingdon and Hounslow. See section 8 and 9 for more detail.

5. SCOPE OF SERVICES

- 5.1. For the purpose of clarity, it is useful to define the roles that the three main stakeholders will play in the delivery of the Contract. It is also important that the stakeholders are viewed as a partnership as it is only through partnership that the Contract Objectives can be delivered. The Partner Boroughs can all be considered 'on-board' and willing 'participants'. This is demonstrated by the Service Level Agreement held between WLWA and Borough Partners.
- 5.2. The three main stakeholders and key roles in the Contract:
- 5.2.1. West London Waste Authority (Customer/End user/Partner):
- Project Management
 - Governance
 - Liaison point between Contractor and Borough Partner
 - Feedback
- 5.2.2. Borough Partners (End user/Partner)
- Supplier of service data
 - Clarifications regarding existing and proposed future services
 - Support round polishing
 - Feedback
- 5.2.3. The Contractor (Project Delivery/Partner)
- Delivery on Project Work Packages according to agreed timeline
 - Reporting progress to Partners
 - Raising issues/concerns throughout the process
 - Provision of data templates
 - Provision of training to Senior Project Manager on routing software
- 5.3. The Contract will be between West London Waste Authority and the Contractor, with WLWA acting on behalf of the Borough Partners. If for any reason during the process, there is insufficient data for the delivery of individual Work Packages or sub Work Packages, WLWA reserve the right to cancel or postpone

Work Packages/Sub Work Packages from the Contract Requirements. Work should only commence on a Work Package/Sub Package once sufficient data has been supplied and all Partners agree this to be the case.

- 5.4. WLWA cannot commit to all Work Packages/Sub Work Packages where insufficient data is available.
- 5.5. A Sub Package can be considered a component deliverable of a Work Package e.g. WP1: A1 – Kerbside General Waste (Harrow).
- 5.6. For the purpose of creation of digital twin, the information listed in section 5.7 will be made available as a minimum. If there are any additional data requirements, these should be addressed in the method statement. It should be noted that partner boroughs will have entered into a Memorandum of Understanding with WLWA before work starts, to guarantee that required data is supplied.

5.7. Collection round data for each material stream including the following detail:

- List of each household serviced by each collection round. The detail provided includes:
 - UPRN – Parent and child also supplied for blocks of flats
 - Longitude in decimal format: e.g. -0.47892 – Location of the property and the collection point
 - Latitude in decimal format: e.g. 51.58774 – Location of the property and the collection point
 - House/flat number
 - Street name
 - Post code
- Collection day
- Collection frequency
- Collection maps
- Crew numbers – Including driver and collection operatives
- Shift patterns
- Receptacle(s) used, including volume
- Crew costs
- Depot and tipping locations
- Weighbridge data
- Vehicle registration numbers that can be linked to weighbridge data. What vehicle collected on which day – This will be used to match weighbridge data to the rounds
- Number of vehicles
- Tip times (average)
- Tipping locations opening times
- Tipping locations
- Full base maps via WLWA Ordnance Survey Account

5.8 Further data that may be available:

- Electronic records of where single sided collections take place. In the absence of electronic records, physical maps can provide this info
- Electronic records detailing where assisted collections are required
- Vehicle tracking data – Please specify in your method statement the format that this information is required
- Round mileage records
- Fuel usage including miles per gallon (MPG), consumption etc. for calculation of cost/carbon savings

6. SERVICE COMMENCEMENT AND TERM

- 6.1. The works required by this Contract will deliver Work Packages One to Six with completion required by an agreed date, after commencement. The Programme is time critical, meaning that all contracted works must be completed within an agreed time as soon as possible, given all data is ready. The Contractor would be expected to provide a timeline within their bid. The consultancy contract is expected to run for a 12 month period.

7. CONTRACT REQUIREMENTS

- 7.1. Bidders are required to have experience of the following key requirements in order to deliver this project and will be required to submit evidence (see Annex 9) of these key elements for their bid to be evaluated:
- a) Efficiency analysis on waste services and rerouting work for a UK urban council
 - b) Ability to complete work on all required borough waste services
- 7.2. This section details the work that is required from the Contractor. It should be noted that all bidders will be expected to include details of the preferred mapping/optimisation software required, including if known the costs of the software and licences. Bidders are also asked to state whether they will be including the provision of a view only version to view work being carried out by the Contractor. If needed, WLWA will be purchasing the software in a separate procurement, but we will need to fully understand the functionality of the Contractor's preferred software.
- 7.3. Dependent on Bidder's tender of how many, if any, licences are required, WLWA will procure maximum two user licences, one for the Contractor and one for WLWA.
- 7.4. Details of the mapping software to be utilised must be included in the bid so that its suitability for the Programme can be assessed. WLWA will seek to utilise the preferred software. WLWA will be using the software for the purpose of review, contract and data management. The Senior Project Manager will need to be fully trained by the Contractor to utilise the software following the commencement of the Contract.
- 7.5. All borough data supplied for this Contract is confidential and not to be utilised for any purpose other than to deliver this Contract. All data provided and generated remains the property of WLWA and their borough partners only. This includes Design Files.

Work Package	Description
1	Create a digital twin of Harrow street cleansing and collection services
2	Create a digital twin of Hounslow street cleansing and collection services
3	Create a digital twin of Hillingdon Communal/FAS (Flats Above Shops)/Trade collection services
4	Service optimisation of Harrow street cleansing and collection services
5	Service optimisation of Hounslow street cleansing and collection services
6	Service optimisation of Hillingdon communal /FAS/Trade collection services

- 7.5. All WLWA (including all borough data) will need to be deleted from the contractors' files within one month from completion of the last work package, which will include the transfer of all data to WLWA. WLWA will require written confirmation that data has been deleted by the Contractor.

8. WORK PACKAGES ONE to THREE: DIGITAL TWIN

Training on the routing software is to be provided to the Senior Project Manager at WLWA either before the work packages begin, or simultaneously throughout work packages one to three.

- 8.1. All data to be supplied by our Borough partners with the process managed by WLWA. There is a Memorandum of Understanding (MOU), which will be in place with each of the Boroughs to provide data in a timely manner and provide any reasonable support as supplied. The Senior Project Manager at WLWA will be responsible for liaison with our borough partners and to ensure that the MOU is followed.
- 8.2. All data generated during Work Packages one to three will remain the property of WLWA and borough partners and must be shared with WLWA and borough partners in an agreed format. At the end of the contract all WLWA (and borough partner) data must be deleted by the Contractor.

Work Package 1 and Sub Work Packages – Create a digital twin of Harrow street cleansing and collection services

WP1	Create a digital twin of the following Harrow collection services
WP1:A1	Kerbside general waste
WP1:A2	Kerbside dry recycling
WP1:A3	Kerbside food
WP1:A4	Kerbside green waste
WP1:B1	Communal/FAS (Flats Above Shops) general waste
WP1:B2	Communal/FAS/Trade dry recycling
WP1:B3	Communal/FAS/Trade food (collected on same vehicle)
WP1:C1	Trade general (collected with kerbside general waste)
WP1:D1	Street Cleansing

Work Package 2 and Sub Work Packages – Create a digital twin of Hounslow street cleansing and collection services

WP2	Create a digital twin of the following Hounslow collection services
WP2:A1	Kerbside general waste
WP2:A2	Kerbside dry recycling (kerbside sort) and food waste
WP2:A3	Kerbside green waste (subscription only)
WP2:B1	Communal general waste
WP2:B2	Communal cardboard
WP2:B3	Communal plastics
WP2:B4	Communal glass, paper, cans
WP2:B5	Communal food waste (bin swap service)
WP2:C1	FAS general waste
WP2:D1	Trade fibre
WP2:D2	Trade food
WP2:D3	Trade glass
WP2:D4	Trade general
WP2:E1	Street Cleansing

Work Package 3 and Sub Work Packages – Create a digital twin of Hillingdon Communal/FAS/Trade collection services

WP3	Create a digital twin of the following Hillingdon collection services
WP3:A1	Communal/Trade general waste
WP3:A2	Communal/FAS/Trade dry recycling

9. WORK PACKAGE FOUR TO SIX SERVICE OPTIMISATION

Once the initial ‘digital twin’ has been created for each borough, then an analysis of the data will be carried out by the Contractor in conjunction with WLWA to understand how the service could benefit from optimisation. At present

our borough partners are open-minded to suggestions on what service/operational changes could be made and any decision to change will be made on a cost benefit basis.

9.1 During work package four to seven the Contractor will be required to:

- Carry out a high-level evaluation/benchmarking exercise analysing current service performance. Part of the findings must include some sort of efficiency rating vs services provided in similar areas
- Carry out a high level options appraisal to understand what efficiencies can be created by a range of operations improvements suggested by the Contractor. If a highly disruptive service change is suggested such as a day change a more detailed business case will be required
- Only carry out work which has been agreed after findings have been discussed between WLWA and borough partner, whereby a decision will be made on what level of service optimisation is required. To ensure all parties agree the scope of the work.
- Provide sufficient resource to manage the process, ensure agreed rerouting services are delivered and assist with forecast savings. This will include:
 - a. Digital polishing of data to an agreed level before implementation.
 - b. Support mobilisation and implementation of new collection rounds, working closely with WLWA and borough partner to polish routes to an agreed level.
- Share all data generated during work packages four to six with WLWA and borough partners in an agreed format. All data will remain the property of WLWA and borough partners. At the end of the contract all WLWA (and borough partner) data must be deleted by the Contractor.
- Work closely with WLWA’s Management Information (MI) Team to help understand how to integrate the (optimised) digital twin information into WLWA’s data reporting system (currently PowerBI). WLWA and all Borough Partners have full access to this system. The aim is to achieve a ‘live’ data reporting system where currently ‘live’ would represent ability to report data no more than seven days old. This will include:
 - a) Liaise with WLWA MI Team to understand what format data is required in;
 - b) MI Team and Contractor to create a data template for this purpose;
 - c) Contractor to supply data from Digital Twin/Route Optimisation to MI Team for upload;
 - d) Discussion/input from Contractor to help MI Team formulate a solution/process that will allow weighbridges to record round numbers against tips. This may start off as a manual approach.

Work Package 4 and Sub Work Packages – Service optimisation of Harrow street cleansing and collection services

WP4	Service optimisation of Harrow street cleansing and collection services
WP4:A1	High level evaluation/benchmarking of current services – How efficient are they?
WP4:A2	High level options appraisal for increased efficiency
	Decision to proceed and scope agreed
WP4:B1	Kerbside general waste
WP4:B2	Kerbside dry recycling
WP4:B3	Kerbside food
WP4:B4	Kerbside green waste
WP4:C1	Communal/FAS general waste
WP4:C2	Communal/FAS/Trade dry recycling
WP4:C3	Communal/FAS/Trade food
WP4:D1	Trade general
WP4:E1	Street Cleansing

Work Package 5 and Sub Work Packages – Service optimisation of Hounslow street cleansing and collection services

WP5	Create a digital twin of the following Hounslow collection services
WP5:A1	High level evaluation/benchmarking of current services – How efficient are they?
WP5:A2	High level options appraisal for increased efficiency
	Decision to proceed and scope agreed
WP5:B1	Kerbside general waste
WP5:B2	Kerbside dry recycling (kerbside sort) and food waste
WP5:B3	Kerbside green waste (subscription only)
WP5:C1	Communal general waste
WP5:C2	Communal cardboard
WP5:C3	Communal plastics
WP5:C4	Communal glass, paper, cans
WP5:C5	Communal food waste (bin swap service)
WP5:D1	FAS general waste
WP5:E1	Trade fibre
WP5:E2	Trade food
WP5:E3	Trade glass
WP5:E4	Trade general
WP5:F1	Street Cleansing

Work Package 6 and Sub Work Packages – Service optimisation of Hillingdon communal /FAS/Trade collection services

WP6	Create a digital twin of the following Hillingdon collection services
WP6:A1	High level evaluation/benchmarking of current services – How efficient are they?
WP6:A2	High level options appraisal for increased efficiency
	Decision to proceed and scope agreed
WP6:B1	Communal/Trade general waste
WP6:B2	Communal/FAS/Trade dry recycling

10. COMPLIANCE AND HEALTH AND SAFETY

10.1 Please include within your response the details (certification document/evidence) for your current:

1. Insurances (public and employer liability etc.);
2. Health and Safety Policy
3. Modern Slavery Policy
4. GDPR statement and procedures in place
5. Data storage and data security procedures
6. Two acceptable references from clients who have used the Contractor’s services for at least 9 months
7. Other documents you feel will benefit your submission and demonstrate legal compliance

10.2 Please confirm your system:

8. Holds all data on UK servers only
9. Holds all data encrypted to TLS 1.2 standard.
10. Has transparent system analytics and performance data

10.3 The Contractor shall:

1. Manage your business to keep your operating documents current and compliant with latest guidance, regulations and legislation.
2. Manage your work on WLWA's contract to ensure the continued health and safety of your staff and other site users.
3. Manage your business to address Modern Slavery risks. Provide details of your approach to Modern Slavery including evidence to demonstrate that specification requirements in relation to managing Modern Slavery risks are addressed. If sub-contracting, provide evidence that your supply chain will be managed to mitigate any Modern Slavery supply chain risks.

11. CONTRACT TIMELINE AND CONTINGENCY ARRANGEMENTS

11.1 Contract Timeline

1. The Contractor will supply a plan explaining how the contract deliverables (work packages 1-6) will be completed to an agreed level Please include:
 1. Details of key milestones and activities that the Contractor would undertake to ensure completion as soon as possible (assuming all data is ready to go). Include details of the key tasks, including WLWA Senior Manager software training, which would be undertaken. WLWA would like to have weekly meetings, up to the completion of work packages, or contract termination, whichever comes first. Meetings to take place virtually, unless there is a need to meet in person at either WLWA offices in West Drayton or at a specified WLWA site.
 2. Full details of the management and supervisory staff proposed to deliver these services. This should include staffing structure and description of the steps taken to recruit and train any additional staff required in the event of a successful bid. Details should also include experience of the management staff for this contract.
 3. Description and evidence of how the Contractor will ensure that effective completion of the service will be achieved.

11.2 Contingency Plan

The successful provider of this work must have comprehensive contingency arrangements in place in order to provide a high quality, resilient and responsive service.

The Contractor is required to put in place arrangements and suitable contingency provisions to ensure that the service can be provided throughout the contract term, delivering all work packages on time and to an agreed level. It is the Contractors' sole responsibility to ensure that the requested services can be provided as required and without interruption and/or delays occurring

Please provide a Contingency Plan(s) outlining your arrangements in support of this method statement. Please include details of service provision. Please include details around client communication procedures and processes currently in place.

Please also include a Business Continuity Plan.

As a minimum, the Contractor shall:

1. Ensure you have sufficient staff and resources available to enable the provision of the services at all times (this includes annual leave, sickness cover).

12. CONTRACT AND PERFORMANCE MANAGEMENT

The provision of a high quality service is important to achieve digital twin and efficient collection services, supporting WLWA's vision of smart cities by 2030.

1. The Contractor will need to ensure:
 1. That an effective level of performance is maintained throughout the term of the contract.
 2. Progress reports shall be received by the 5th of the following month.
 3. A regular weekly contract meeting will be held online, at which performance will be reviewed
 4. End of work package review meetings will be held
 5. Invoices supported by a detailed excel spreadsheet listing all work completed to be sent at the end of each work package

12.1 Contract Management

1. The Contractor will name a contract manager to manage the account, conduct service reviews and problem management etc., and it is expected their role is specifically to:
 1. Manage performance against the agreed deliverables at the agreed timeline taking corrective action where necessary
 2. Keep abreast of developments in the legislative environment, taking action as necessary in order to comply with new requirements and advising WLWA of such developments.
 3. Work with WLWA to support delivery of transport efficiencies
 4. Ensure that either the contract manager and/or suitably qualified and authorised staff attend all contract meetings.
 5. Ensure that new improvements and innovations are offered to WLWA to improve the contract service
2. Contract cost will be monitored through review of itemised invoices. An appropriate payment mechanism will be agreed with the Contractor prior to the service start date.
3. The Contractor is to develop a communication plan with WLWA to include reports and management meetings.

12.2 Performance Management

1. The Contractor is required to allow WLWA and/or its nominated representatives to undertake, at its sole discretion audits (by appointment or otherwise) of the Contractors processes, procedures and records to ensure continuing compliance, the accuracy of any data and information being provided as evidence and performance to meet the expected contract standards.
2. There will be weekly catch-ups online (for example on Teams) between WLWA and the Contractor. This will offer transparency and help remove barriers to work packages.
3. At the end of each work package there will be a review meeting to be able to sign-off work package as completed. If the work package is not signed-off, then an agreement as to what work needs to happen and by when in order to reach sign-off, which will require a further review meeting.

12.2.1 Progress report will include, but is not limited to:

1. WLWA requires that all information identified and required under items a) to e) below to be provided. Progress reports are to be sent by the 5th of every month. Any missing information or information that is not verifiable will result in a query, and until a query is resolved, payment will be delayed, or will not be made. WLWA needs to be fully assured and confident that all information relating to this work is a true and accurate record.
 - a) Work achieved to date (from last report)
 - b) Barriers being dealt with/overcome and why they have occurred
 - c) Any changes to original agreed timeline/budget
 - d) Brief description of next month's steps
 - e) Anything needed from WLWA/borough partner

13. CARBON REDUCTION & SOCIAL VALUE

WLWA aspires to achieve additional environmental and social value from all contracts. WLWA want to be able to measure carbon and work with our Contractors to develop a process to do this. WLWA also wants to work towards going above and beyond on social value, for example planning to/having the Mayor of London's Good Work Standard Accreditation.

1. The Contractor should provide a method statement to demonstrate:

- a) Its commitment to reducing environmental impacts and pollution from its operations
- b) Its plan to evaluate and work to reduce the overall carbon and environmental impact of this contract through the contract lifetime.
- c) How it proposes to report the carbon intensity of contract activities and commit to monthly reporting of carbon and social value outcomes. Please include how carbon reduction year on year will be included and achieved.
- d) Its commitment to deliver social benefits, such as local job creation, apprenticeships, skills development, equal opportunities, diversity and embedding fair employment practices and wages.
- e) In line with the Mayor of London Responsible Procurement Policy, please confirm the Contractor will pay staff and Contractors the London Living Wage for London based work and/or the UK Living Wage for non-London work as a minimum. If not please confirm what steps can be made to work towards this expectation.

Pricing

The prices inserted by the Bidder in **Annex 4** – Pricing Schedule shall include for all matters, costs and expenses that the Contractor may incur in providing services for this contract, and shall be inclusive of any current or on-going liability in respect of any Licences, Permits, Insurances, permissions, obligations and/or any subsequent replacement legislation or the like or any amendments, revisions or re-enactments thereto.

