REQUEST FOR PROPOSAL (RfP)

INCLUSIVE WATER RESILIENCE ACCELERATOR FUND:

The City of Lagos EXTREME WATER EVENTS EARLY WARNING SYSTEM

C40 Cities Climate Leadership Group, Inc.
120 Park Avenue, 23rd Floor
New York, NY 10017
United States of America

April 2025

1. C40 Cities Climate Leadership Group Inc. (“C40”)

C40 is a network of nearly 100 mayors of the world’s leading cities working to deliver the urgent action needed to confront the climate crisis and create a future where everyone can thrive. Mayors of C40 cities are committed to using a science-based and people-focused approach to help the world limit global heating to 1.5°C and build healthy, equitable and resilient communities. Through a Global Green New Deal, mayors are working alongside a broad coalition of representatives from labour, business, the youth climate movement and civil society to go further and faster than ever before.

The organisation's strategic direction is determined by an elected Steering Committee of C40 mayors, co-chaired by Mayor Sadiq Khan of London, United Kingdom, and Mayor Yvonne Aki-Sawyerr of Freetown, Sierra Leone. The three-term mayor of New York City, Michael R. Bloomberg, serves as president of the C40 Board of Directors and is responsible for operational oversight. A nine-person management team led by Executive Director Mark Watts leads the day-to-day management of C40. C40’s three core strategic funders are Bloomberg Philanthropies, the Children’s Investment Fund Foundation (CIFF) and Realdania.

To learn more about C40's work and our cities, please visit our Website or follow us on Twitter, Instagram, Facebook, and LinkedIn.

2. The C40 Inclusive Water Resilience Accelerator Fund

Cities are facing rapid urbanisation, and the development of water management infrastructure is struggling to keep pace with urban growth. Vulnerable populations and informal settlements are particularly vulnerable to water risks. Cities, therefore, need to increase their water resilience by taking ambitious actions such as early warning systems and emergency protocols to protect vulnerable communities' lives, recycled water use, sustainable groundwater usage, reduced potable water usage, development of a SuDS-forward drainage master plan, restoration of water bodies, expansion of flood control and river storage capacity, guidance for building code revisions towards flood resilience, among others.

The C40 Inclusive Water Resilience Accelerator Fund, supported by the Grundfos Foundation, is C40’s response to the unmet needs of cities as they navigate the challenges of urban water management in the context of a climate crisis.

The fund is designed to support local governments in enhancing their resilience to climate-induced water stress and excess by implementing just, fair, and inclusive actions that benefit all residents, particularly frontline communities. It aims to support activities, plans, policies, and projects that help cities achieve their water-related targets and reduce inequities in providing access to water and the disproportionate exposure to water-related hazards among low-income populations.

3. Summary

The Water Resources Department, situated within the Office of Drainage Services and Water Resources at the Ministry of Environment and Water Resources, collaborates with the City of Lagos to manage the sustainable use and distribution of water resources. It oversees the agencies responsible for developing and maintaining water infrastructure, including reservoirs and treatment plants, ensuring a reliable water supply. The department enforces water quality standards and protects natural water bodies. Additionally, it develops adaptive strategies to mitigate the impacts of climate change and engages with communities and stakeholders to promote water conservation and sustainable practices throughout the City of Lagos.

The proposed project aims to enhance the City of Lagos's resilience to flooding by implementing advanced early warning systems. The project will significantly improve the city's ability to predict, monitor, and respond to flood events by installing and maintaining automatic weather observation systems across strategic locations. The initiative aligns with local and national climate resilience strategies, emphasising community-based approaches and integrating data-driven insights into policy frameworks. This project aims to mitigate the socio-economic and environmental impacts of flooding in Lagos, protect public health, and foster long-term sustainability.

4. Background

The City of Lagos faces severe challenges in managing flood risks due to poor drainage infrastructure, rapid urbanisation, and the effects of climate change. The city's drainage systems are often overwhelmed by heavy rainfall, which is exacerbated by clogged drains and unplanned development, resulting in frequent and severe flooding. This situation is further complicated by a significant gap in reliable data and forecasting systems, making it challenging to anticipate and effectively manage flood events. Vulnerable populations, particularly women and children, bear the brunt of these challenges, facing displacement, loss of livelihoods, and disruptions to health services and education. Rising sea levels and

unpredictable weather patterns resulting from climate change have intensified these threats, necessitating the development of more adaptive and advanced early warning systems.

5. Purpose of the Proposed Project

The proposed project aims to enhance the City of Lagos's capacity for flood risk management by implementing an early warning system (EWS) that aligns with the city's specific technology preferences. The project will focus on assessing the **six** communities identified by the City of Lagos to determine which **four** are most suitable for the deployment of the EWS. The service provider will procure, install, and commission the specified EWS technology, ensuring seamless integration with existing systems. Additionally, the project will focus on community engagement by establishing local flood monitoring and response teams, ensuring that vulnerable populations are well-informed and prepared during flood events.

Project Objectives

The project aims to integrate its outcomes into existing policy frameworks, ensuring sustainability and alignment with broader climate resilience and disaster risk reduction strategies. By enhancing early warning capabilities and promoting community-based flood management, the project will contribute to Lagos's long-term resilience, improving residents' quality of life and reducing the socio-economic and environmental impacts of flooding.

6. Scope of Work

The supplier will be responsible for the supply, installation, and commissioning of the Early Warning System, which includes but is not limited to the following components:

6.1 Inception and System Design (Deliverable 1)

- Analyse existing data and conduct GIS-based flood mapping using Lagos's historical flood data and climate projections.
- Assess the communities and evaluate the six suggested communities identified by the City of Lagos to select the four most suitable for implementing EWS.
- Map out the prioritised locations' gaps and community needs required for the system design, focusing on skills and engagement.
- Analyse and assess the existing EWS as procured by the City of Lagos.
- Prioritise weather station locations based on risk levels, population density, and infrastructure vulnerabilities.

- Submit the inception report and project management plan.

6.2 Procurement and Installation of Monitoring Stations (Deliverable 2)

- Briefing session (s) to key stakeholders on monitoring station installation impact and process as part of the public awareness campaigns on flood preparedness (i.e. workshops on flood risks and evacuation procedures).
- Purchase and calibrate weather stations and sensors, ensuring seamless integration with existing weather stations (including rainfall, temperature, humidity, and wind speed) that are suitable for Lagos's climate and urban conditions.
- Install stations with solar power and backup batteries for remote, uninterrupted monitoring.
- Conduct calibration testing at each location to ensure data accuracy and consistency.

6.3 Development and Integration of Data Transmission Network (Deliverable 3)

- Set up data transmission modules for real-time data flow via GSM/LTE to a central server.
- Configure data transmission network redundancy (e.g., dual-SIM capabilities) to minimise data loss.
- Integrate data from monitoring stations with data analytics and visualisation software, setting up automated alerts and dashboard features.

6.4 Data Processing, Analytics, and Early Warning Platform Development (Deliverable 4)

- Install and configure software for data analytics, flood risk modelling, and real-time visualisation.
- Analysis on the most efficient and impactful format (SMS, email, and app notifications) of automated alerts to be sent to key stakeholders as part of the public awareness campaigns on flood preparedness.
- Develop a customisable dashboard that aggregates data in real-time, with thresholds for automated alerts sent via SMS, email, and app notifications.
- Calibrate the alert thresholds based on localised flood data and risk assessment findings.

6.5 Training and Technical Handover (Deliverable 5)

- Conduct training sessions on system operation, data monitoring, and maintenance tasks.
- Provide a user manual and troubleshooting guide detailing key operational processes.
- Develop a framework for periodic evaluation and system updates, recommending guidelines for long-term functionality.

6.6 Project Management and Handover (Deliverable 6)

- Provide overall project management throughout the implementation
- Conduct regular progress meetings and reporting
- Perform a formal project handover

6.7 Post-Installation Support (Deliverable 7)

- Monthly system performance reports during the 5-month project period
- Defects and liability period up to 12 months post-installation
- Quarterly system health check reports for 12 months (post-installation) to be (total of 4 checks within the 12 months)
- Manufacturer warranty compliance
- Annual Maintenance Report at the end of 12 months post-installation
- Provide technical support in accordance with the agreed-upon terms throughout the project.

6.8 Stakeholder & Community Engagement (Deliverable 8)

- Conduct a mapping of community stakeholders to ensure the engagement in the project activities of representatives from the most vulnerable groups, including children, youth, women, elderly individuals, and diverse individuals with varying abilities, and draft a comprehensive community engagement strategy and workplan.
- Organise and conduct workshops on flood risks and evacuation procedures involving key stakeholders and community members.
- Provide technical guidance and insight in forming community-based flood monitoring and response teams in collaboration with the City of Lagos.
- Develop and conduct a community-led public awareness campaign on flood preparedness and response in the communities involved in the project, in collaboration with the City of Lagos.

7. Deliverables

The deliverables expected from the service provider are as follows:

Deliverable		Description
1	1.1	Inception report and project management plan
	1.2	Flood risk assessment report, including detailed risk mapping.
		Priority map with proposed locations for monitoring equipment.
2	2.1	Fully installed and calibrated weather monitoring stations.
	2.2	Installation report detailing station setup and calibration results.
	2.3	Inventory list and installation report
3	3.1	Functional data transmission network and centralised data processing system.
	3.2	Report on data flow testing and network stability.
4	4.1	Operational analytics dashboard with real-time visualisation and alert functionality.
	4.2	Configuration report with alert thresholds and user guide.
5	5.1	Training Session Summary: A list of participants and the content covered.
	5.2	Complete technical documentation, including a system maintenance and troubleshooting guide.
6	6.1	Monthly Progress Reports
	6.2	Regular progress meetings and reporting
	6.3	Final Project Handover Document
7	7.1	Monthly system performance reports during the 5-month project period

	7.2	The defects and liability period is up to 12 months post-installation, which allows for identifying and resolving defects after the system goes live while aligning with industry standards.
	7.3	Quarterly system health check reports for 12 months (post-installation)to be conducted during the defects and liability period (a total of 4 checks within the 12 months) to monitor performance and address issues early.
	7.4	Ensure manufacturer warranty compliance and the warranty benefits are fully realised and upheld.
	7.5	Annual Maintenance Report at the end of 12 months post-installation to summarise overall performance and maintenance activities.
	7.6	Provide technical support in accordance with the agreed-upon terms throughout the project.
8	8.1	Community stakeholder mapping, engagement strategy, and workplan
	8.2	Stakeholder engagement workshop report on flood risks and evacuation procedures with key stakeholders and community members
	8.3	Requirements and/or terms of reference that guide the actions of community-based flood monitoring and response teams
	8.4	Communication plan and contents suitable for a community-led public awareness campaign on flood preparedness and response

8. Request for Proposal Timelines

The proposed project duration is five (5) months, broken down as follows:

RFP Timeline	**Due Date**
Request for Proposals sent out	**April 24rd, 2025**

Questions submitted to C40	**April 28th, 2025**
C40 responds to questions	**May 2nd, 2025**
Deadline for receiving Offers	**May 14th, 2025**
Clarification and Evaluation of Offers	**May 14th, 2025 - May 19th 2025**
Selection decision made	**May 26th, 2025**
All Potential suppliers are notified of the outcome	**May 28th, 2025**

9. Project Timelines

Project Duration: Five (5) months. It is scheduled to begin on **June 4, 2025,** and is expected to be completed by **November 4, 2025.**

The proposed project duration is five (5) months, broken down as follows:

Task	**Month**									
	1		**2**		**3**		**4**		**5**	
Project kick-off										
System design										
Procurement										
Installation										
Testing										
Commissioning										

Training										
Stakeholder & Community Engagement										
Final Report & handover										

10. Technical Requirements for System Components

10.1 Weather Monitoring Stations

- Sensors: Rain gauge (0.2 mm resolution), temperature sensor (-40°c to 85°c), humidity sensor (0-100% RH), and anemometer (wind speed up to 60 m/s).
- Power: Solar-powered with rechargeable battery backup, suitable for extended operation in remote or challenging environments.
- Communication Protocols: GSM/GPRS/LTE compatible with remote data transmission.
- Data Logger: Minimum of 32 GB storage for local data backup in case of network interruptions.

10.2 Data Transmission Network

- Connectivity: GSM/GPRS or LTE modem integration for real-time data transmission to a central control centre.
- Network Redundancy: Dual SIM functionality for network reliability, allowing automatic switch-over between carriers.
- Range: Reliable data transmission over urban distances with obstacles (up to 10 km).

10.3 Data Analytics and Visualization Software

- Data Visualization: Real-time dashboard and mapping capabilities; historical data tracking.
- Alert System: Configurable threshold-based alerts via SMS, email, and mobile push notifications.
- Data Processing: Built-in analytics for trend analysis and flood risk modelling.
- Compatibility: Accessible through desktop and mobile, supporting multiple users and layered permissions.

10.4 Power Backup Systems

- Solar Panel Capacity: The station must be powered by a minimum 10w panel with a 12v battery capable of running autonomously for at least 5-7 days without sunlight.
- Battery Type: Lithium-ion or deep-cycle lead-acid battery for reliable power storage and longevity.
- Charging Controller: Solar charge controller with overcharge/discharge protection.

10.5 Community Interface & Alert Dissemination System

- Alert Channels include SMS, email, mobile app notifications, and local LED displays or siren systems in critical zones.
- Language Support: Multilingual alert options, prioritising common languages spoken in Lagos.
- User Interface: Simple, visually intuitive design for accessibility in urban settings.

We are open to suggestions on technical specifications for system components from service providers. Our goal is to foster innovative solutions and ensure the effectiveness and efficiency of the system. We welcome any ideas that may enhance the project beyond the outlined requirements.

11. Project Management and Communication

C40 Cities, the City of Lagos, and the appointed service provider will collaborate to ensure the successful execution of the project. A project management plan will be established to facilitate communication.

11.1 Meet to facilitate these things

- **Kick-off Meeting:** At project initiation, a joint meeting will be held with C40, the service provider, and representatives from the City. This meeting will finalise the project timeline, establish working procedures, and detail the initial work plan (Deliverable 1.1).

- **Bi-weekly Progress Check-ins:** Short, 30-minute virtual meetings will be held bi-weekly to review progress, identify any challenges, and discuss plans for the upcoming period. These meetings will typically involve a smaller group focused on immediate project tasks.

- **Monthly Project Reviews:** The project team, including C40, the service provider, and City representatives, will hold comprehensive monthly meetings. These meetings, which last approximately one hour, will include presentations and detailed progress reports on milestones and deliverables.

- **Ad-hoc Meetings:** Additional project team meetings can be convened to address specific issues or review critical deliverables.

11.2 Reporting

The service provider will be responsible for submitting monthly progress reports, aligned with the project timeline and deliverables, to the Office of Drainage Services and Water Resources, the Ministry of the Environment and Water Resources, and C40. These reports should be concise and informative, outlining progress, challenges encountered, and next steps.

11.3 Stakeholder Engagement

The appointed service provider, C40 Cities, and the City of Lagos will coordinate and facilitate stakeholder engagement throughout the project. This includes organising meetings and ensuring stakeholder voices are heard and incorporated appropriately.

The City of Lagos and the appointed service provider will collaborate to coordinate and facilitate community engagement and workshops, engaging residents on flood risks and preparedness. This will empower them to enhance their safety and equip the community with system knowledge, thereby reinforcing their role in the project's success. Establishing ongoing feedback mechanisms will help adapt strategies to evolving needs

11.4 Communication

The project's success hinges on close collaboration and clear communication between C40, the service provider, the municipalities, and various stakeholder groups. The service provider is expected to allocate sufficient time to effectively prepare for, actively participate in, and document the outcomes of all project meetings.

12. Eligibility Criteria

A sufficient number of professional staff with suitable qualifications must be available to undertake the project. The personnel must be knowledgeable and

experienced in their fields of expertise. In particular, the project team should include professionals with expertise and experience in the following areas:

- The team leader or project manager must have extensive experience in geohydrology, hydrology, or water resource planning and hold a relevant degree in one of these fields.
- The team should comprise experts in hydrology, water engineering, and environmental economics, with a focus on multidisciplinary experience in institutional management and sustainable development.
- Additionally, the Service Provider Company or Consortium must demonstrate the following capabilities:
- Proven experience supplying and installing weather monitoring systems, particularly in water resources planning and flood management.
- Established technical expertise and operational capacity.
- Positive references from previous similar projects.
- Compliance with local regulations and industry standards.

13. Proposal Submission Guidelines

This Request for Proposal represents the requirements for an open and competitive process. All proposals should include clear timetables, a description of how you will work with C40, precise costs, and details on your experience in this area.

1. The proposal should provide C40 evaluators with all the necessary information to assess your bid. Please clearly indicate where applicable:
2. How the proposal addresses the Evaluation Criteria;
3. The assumptions you hold regarding the project;
4. Identified risks and suitable mitigation measures;
5. Technical specifications of the equipment;
6. Quality assurance and control measures;
7. Any additional support required to ensure the project's success, including inputs from third parties or C40 staff;
8. A proposed working partnership with C40 and the City of Lagos, including (where applicable) project governance and management, key personnel, key roles and responsibilities, and escalation procedures for issues;
9. A detailed methodology for conducting the assessment, project identification, capacity building, and stakeholder engagement;
10. A detailed budget, split by deliverables. Please note that the budget should be all-inclusive, including applicable taxes and fees.
11. Company profile, background, and organogram of the proposed team.

12. Qualifications and experience of the team members assigned to the project. Provide a one-page profile CV.
13. References from previous clients (at least three similar or related projects completed in the past).

Please note: Proposals should be written in English, saved in PDF format, and not exceed 10 pages of text. Reference material may be placed in annexes.

14. Supplier Diversity

C40 is committed to supplier diversity and inclusive procurement by promoting equity, diversity, and inclusivity in our supplier base. We believe that by procuring a diverse range of suppliers, we gain a broader range of experiences and perspectives from them. Thus, we can best deliver to the entire range of our diverse cities and the contexts in which they operate.

We strongly encourage suppliers, including individuals and corporations of diverse sizes, ages, nationalities, gender identities, sexual orientations, majority-owned and controlled by minority groups, physical or mental abilities, ethnicities, and perspectives, to submit proposals to work with us.

Feel free to refer to C40's Equity, Diversity, and Inclusion Statement. Supplier diversity and inclusive procurement are key elements in applying equity, diversity, and inclusion to help the world limit global warming to 1.5°c and build healthy, equitable, and resilient communities.

15. Contract

Please note that this is a contract for professional services, not a grant opportunity. Organisations unable to accept contracts for professional services should not submit bids for such services. The work will be completed under the C40 SERVICES CONTRACT. These terms and conditions are non-negotiable. Organisations unable to accept them as drafted should not submit bids in response to this opportunity.

If C40 is unable to execute a contract with the winner of this competitive process, we reserve the right to award the contract to the second-highest Potential Supplier.

The successful bidder will be required to register with the Lagos State Public Procurement Agency.

Subcontractors

If the organisation submitting a proposal needs to subcontract any work to meet the proposal's requirements, this must be clearly stated. All costs included in proposals must be all-inclusive of any outsourced or contracted work. Any proposals that call for outsourcing or contracting work must consist of the names and descriptions of the contracted organisations.

16. Financials

Budget Allocation

Bidders must provide a detailed breakdown of costs within each category listed below in their financial proposals.

Budget Item	**Budget Allocation**
Deliverable 1	
Deliverable 2	
Deliverable 3	
Deliverable 4	
Deliverable 5	
Deliverable 6	
Deliverable 7.1	
Deliverable 7.2 to 7.6	
Deliverable 8	

Evaluation Criteria

Proposals will be evaluated against the following criteria:

Evaluation Criteria	**Weighting**
Technical Expertise and Deliverability as measured by:	40%

• Proven expertise in Implementing Early Warning Systems for Flood Management • Team members' Experience, Qualifications and Availability. • Past successes and contributions of team members on similar projects in African cities • Experience of team members in delivering community-oriented projects in similar geographies ensures a deep understanding of local needs and challenges	
Comprehensiveness of Proposed Methodology as measured by: • Project Implementation and execution • Adherence to Technical Standards	25%
Value for Money as measured by: • Economising the cost of resources used/spending less • Efficiency: the relationship between the output of goods/services and the resources to produce them • Effectiveness: the relationship between the intended and actual results	20%
Equity and Ethical Alignment as measured by: • The proposal includes understanding local community needs and considering inclusive water management solutions • Understanding and compliance with C40's Non-Staff Code of Conduct Policy; • Equity, Diversity and Inclusion Policy; Non-Staff Travel and Expenses Policy; Safeguarding Policy.	10%
Alignment with C40 Goals, including how: • The proposed solutions contribute to sustainable water resource management, reduced water-related energy	5%

consumption, and climate change mitigation in urban areas • The approach facilitates the transition towards low-carbon and climate-resilient water systems in the target cities. • Values of diversity and inclusion	

C40 Policies

C40 expects third parties to be able to abide by these C40 policies

- Non-Staff Code of Conduct Policy here
- Equity, Diversity and Inclusion Policy here
- C40 Non-Staff Travel and Expenses Policy here
- C40 Safeguarding Policy here

Submissions

Each Potential Supplier must submit one copy of their proposal to the email addresses below by **May 14th, 2025, at 09:00 CAT to** Connor Muesen cmuesen@c40.org and cc Elizabeth Mungai emungai@c40.org

Late submissions will not be considered.

Queries

Anonymised responses to questions will be provided here when the Q&A period closes.

Disclaimer

C40 will not accept liability or be responsible for any costs incurred by Potential Suppliers in preparing a response to this RFP. Responses submitted will be accessible to all C40 staff and external evaluators, if applicable.

C40 reserves the right to modify this RFP to ensure compliance with funder requirements.

Neither the issue of the RfP nor any information presented in it should be regarded as a commitment or representation by C40 (or any of its partners) to enter into a contractual arrangement. Nothing in this RFP should be interpreted as a commitment by C40 to award a contract to a Potential Supplier due to this

procurement, nor to accept the lowest price or any tender.