SUPPLY, DELIVERY, INSTALLATION, TESTING, AND COMMISSIONING OF AUTOMATED RAIN GAUGES AND SPATIAL RAIN RISK ANALYSIS SYSTEM

I. RATIONALE AND BRIEF BACKGROUND

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Last September 2024, Philippines was yet again identified as the county with the highest risk index globally. Majority of the risk factor that made our country at the top of the list is due to extreme weather (flooding, extreme rains, and tropical cyclones).

With this in mind, Quezon City aims to leverage new systems and technologies to spearhead in new ways to promote knowledge building, awareness raising, and disaster preparedness not only for CDRRMO but to the citizens of the city.

By providing and installing new sets of automated rain gauges to identified locations within the city, CDRRMO aims to further improve its capabilities in monitoring and forecasting rain. The aforementioned sensors will be seamlessly integrated to the existing sensor network and create a highly specialized spatial rain risk analysis system for the city.

II. PROJECT DESCRIPTION

The concept of the project is to enhance the capabilities of CDRRMO by installation of additional rain gauges to supplement the barangay cluster rain analysis. In addition to this, create the city's very own highly specialized spatial rain risk analysis system for a more localized rain monitoring and forecasting.

Since these are critical systems for disaster preparedness, the CDRRMO recommends a system that is already existing and proven working by other Local Government Units in Metro Manila. The CDRRMO is aiming to have a system aligned with SMART CITY models or solutions that are automated, faster to implement, easy to manage, and more cost effective. In addition, the datasets of the sensors should be seamlessly integrated to the existing iRise UP data display and data management system (cloud-based and QCITDD).

III. PROJECT SCOPE OF WORK

The CDRRMO plans to install twenty-two (22) automated rain gauges within the City identified by CDRRMO to aid on the barangay cluster rain analysis. The datasets will then be integrated into the existing data display and data management system (cloud-based and QCITDD) of CDRRMO along with the previously procured sensors. National and local protocols should be followed in the analysis of the sensors' datasets.

System Output

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- Twenty-two (22) Operational Automated Rain Gauges
- Spatial Risk Analysis System
 - Data Display
 - Report
 - Alerts
 - Integration
 - Data Backup/Redundancy
 - Historical data

Technical Specifications

Lot	Description	Delivery Time
1 Lot	TWENTY-TWO (22) AUTOMATED RAIN GAUGES	Sixty (60) Calendar
	 Power supply through solar 	Days
	Plug and play	
	No programming and complex wiring	
	Real-time access to data from any web	
	 Enables to monitor data 24/7 via web browser 	
	or smartphone	
	Alarm capabilities via text/email	
	 LCD display for easy field deployment 	
	 Cloud-based data access option 	
	Smart Sensor Connectors: 10 inputs	
	Logging Rate: Configurable for as low as ten (10) minutes	
	$= Accuracy: 0-250 \text{mm/br}; \pm 1/22\%$	
	 Accuracy: 0-250/mm/m: 17-276 Accuracy: 250-500mm/hr: +/-3% 	
	SENSOR SERVICE REPLACEMENT, MAINTENANCE, WARRANTY AND DATA SUBSCRIPTION	
	Quarterly checking of station such as:	
	Rain Gauge	
	Data logger	
	Battery Salar Chartenline	
	Solar Charge Controller Solar Papel	
	 Three (3) years coverage 	
	Replacement of devices and accessories such as:	
	Rain Gauge	1
1	Data logger	
	Battery	

 Solar Panel Solar Charge Controller Three (3) years coverage 	
Three (3) years coverage	
SPATIAL RAIN RISK ANALYSIS SYSTEM	
 Data Display GIS, Table, Graph and Threat Matrix display of real time and historical of rain gauge data GIS analysis overlaying rain data Menu & Settings to display clustered view and per sensor view 3-D level rain analysis of existing and new rain gauges with color-coding based on identified threshold. Spatial rain analysis of existing and new rain gauges that covers the whole city with color-coding based on identified threshold. 	
 Report Report Facility to assign automated email reports per location and its recipients Email (HTML) Format 	
 Alerts Alert Facility to provide rain monitoring and early warning alerts Integrated to existing Telegram alerts for group alerts 	
 Integration Integration to existing web application and data dump system (cloud-based and QCITDD) 	
 Data Backup/Redundancy Data dumps are to be performed every 15 minutes (all details pertaining to access to the QCDRRMO database such as address or URL to a management console, user id and password are to be given to QCDRRMO). Perform redundant data writes to an ITDD database 	
 Software License Perpetual Software License with three (3) years technical support and maintenance 	
 SENSOR INSTALLATION Twenty-two (22) Locations Site Survey Installation and Calibration Engineering works 	

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TRA	AINING	
	 Two (2) days end user orientation for processing of datasets, analysis of datasets, and generation of spatial rain risk analysis. 	
	 All training will have eight (8) hours per day with five (5) attendees. 	

IV. AREA OF COVERAGE

The sensor installation will cover twenty (22) locations within Quezon City and will be identified by the Emergency Operations Center (EOC) during the start of implementation.

V. PROJECT STANDARDS AND REQUIREMENTS

Bidders should have completed, a single contract that is similar to this Project or related to Supply, Installation and Maintenance of meteorological devices and data processing systems, equivalent to at least fifty percent (50%) of the ABC three (3) years from the date of submission and receipt of bids, a contract similar to the project.

Bidders should have at least three (3) field staff for the installation and three (3) years on-going support and maintenance of twenty (22) sensors. Bidders should have demonstrated experience and capacity to manage community based early warning systems in a highly urbanized city (HUC) in Metro Manila.

Bidders should have at least one (1) Meteorologist and one (1) IT-Data Science resources for Training and continuous consultation within the project as this is a science-based data driven project.

VI. PROJECT DURATION

The delivery period of the Project shall be within **sixty (60) calendar days** after the issuance of the Notice to Proceed.

VII. APPROVED BUDGET FOR THE CONTRACT

The approved budget for the contract amounts to **twenty nine million seven** hundred thousand pesos (P29,700,000).

ITEM	BUDGET (PHP)
1. TWENTY TWO (22) AUTOMATED RAIN GAUGES	12,100,000
2. SENSOR SERVICE REPLACEMENT, MAINTENANCE, WARRANTY AND DATA SUBSCRIPTION	6,600,000
3. SPATIAL RISK ANALYSIS SYSTEM	6,500,000
4. SENSOR INSTALLATION	4,400,000
5. TRAINING	100,000
TOTAL	29,700,000

VIII. BASIS OF PAYMENT

Below are the deliverables that will be used as the basis for full payment.

ltem	Deliverables	Payment Percentage
Delivery & Installation of twenty-two (22) Automated Rain Gauge Set Solar Panel and Data Connectivity	Project Acceptance Document: Receipt, Inventory, Installation Completion and Maintenance & Warranty Certificate	15%
Delivery of Spatial Rain Risk Analysis System	Project Acceptance Document: Fully delivered system and documentation	75%
Training	Training Certificate	10%

IX. PENALTIES FOR BREACH OF CONTRACT

Incomplete and delayed delivery will result in penalties based on standard Government implementing rules and regulations.

X. CANCELLATION FOR OR TERMINATION OF CONTRACT

Incomplete and delayed delivery and non-performance of services will result in penalties and termination of contract based on standard Government implementing rules and regulations.

Prepared and recommended by:

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