

Cabidianan, Nabunturan, Davao de Oro

TECHNICAL SPECIFICATIONS FORM

Bid Number: B-25-0189 Purchase Request Number: 25-4525 09/03/2025 Date: Page:

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ITEM	QTY.	UNIT OF	SUE DESCRIPTION .	APPROVED BUDGET		BID PRICES	
NO.		ISSUE		Unit Price	Total Amount	Unit Price	Total Amount
1	1.0	lot	INSTALLATION OF AN END-TO-END MULTI-HAZARD EARLY WARNING AND MONITORING SYSTEM PHASE III WITH REMOTE CCTV EMPLOYING SCADA TECHNOLOGY TO STRENGTHEN DISASTER PREPAREDNESS A. Site 1: San Jose Bridge Latitude: 7°38'25.51"N Longtitude: 126° 4'18.09"E 1. CCTV - 1 unit 4+4MP 25x Network Dual Lens PTZ Camera 25x Optical Zoom Max. 25/30 fps@4M IR distance up to 100m LINK 1 – NEW CALAPE to SAN JOSE BRIDGE 2. RADIO - 2 units RADIO ePMP Force 300-25 - Channel Width MHz 20 40 80 - Proprietary Physical Layer 802.11ax, 2x2 MIMO/OFDM - Channel Spacing Configurable in 5 MHz increments - Frequency Range Wide-band operation 4910–6135 MH 3. 80ft Monopole tower, with access for repairs/maintenance plus guy wires 4. 15-25ft tapered/octagonal pole or 3" GI pipe for CCTV B. Site 2: Kalaw Bridge, Poblacion Monkayo Latitude: 7°49'52.82"N Longtitude: 126° 3'1.12"E 1. CCTV - 1 unit 4+4MP 25x Network Dual Lens PTZ Camera 25x Optical Zoom Max. 25/30 fps@4M IR distance up to 100m LINK 2 – NEW CALAPE to KALAW BRIDGE 2. RADIO - 2 units RADIO ePMP Force 300-25 - Channel Width MHz 20 40 80 - Proprietary Physical Layer 802.11ax, 2x2 MIMO/OFDM - Channel Spacing Configurable in 5 MHz increments - Frequency Range Wide-band operation 4910–6135 MH 3. 60ft Monopole tower, with access for repairs/maintenance plus guy wires - 1	2,000,000.00	2,000,000.00		
				SUB-TOTAL	2,000,000.00		

Purpose: FOR USE OF PDRRMO

Delivery: PGSO



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			unit 4. 15-25ft tapered/octagonal pole or 3" GI pipe for CCTV - 1 unit C. Site 3: Bangoy Bridge, Camanlangan Latitude: 7°34'35.69"N Longtitude: 126° 8'5.04"E 1. CCTV - 1 unit 4+4MP 25x Network Dual Lens PTZ Camera 25x Optical Zoom Max. 25/30 fps@4M IR distance up to 100m LINK 3 - SAN JOSE to BANGOY Bridge 2. RADIO - 2 units RADIO ePMP Force 300-25 - Channel Width MHz 20 40 80 - Proprietary Physical Layer 802.11ax, 2x2 MIMO/OFDM - Channel Spacing Configurable in 5 MHz increments - Frequency Range Wide-band operation 4910-6135 MH 4. 60ft Monopole tower, with access for repairs/maintenance plus guy wires - 1 unit 5. 15-25ft tapered/octagonal pole or 3" GI pipe for CCTV - 1 unit D. NEW CALAPE Site 1. 60ft Monopole tower, with access for repairs/maintenance plus guy wires - 1 unit (Height regulated & approved by Barangay) E. COMMAND CENTER DISPLAY AND REMOTE CONTROLLER SYSTEM Supply, Installation, Configuration and Commissioning, Integration of old EWS Equipment Inclusions: 1. 2pcs 32" Monitor LED backlit Technology with full HD 1920x1080 1. 2 pcs wall mount LCD LED Fixed/Swivel Bracket 2. 2 pcs HDMI Splitter full HD 4K 1 in 2 out 1080p 3. 4pcs HDMI Cables (5/10/20m) 4. Radio controlled remote system development & integration 5. Supplier must have at least 1 HCSA Certified Installer 6. Supplier must have at least 1 COSH/ BOSH safety officer F. Installation of Colored markers vertically on bridge pillars, riverbanks, or	Unit Price	Total Amount	Offit Price	Total Amount
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ITEM	QTY.	UNIT OF		APPROVED BUDGET		BID PRICES	
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			nearby concrete structures within the CCTV's field of view. These markers serve as visual flood gauges that allow remote monitoring teams to quickly assess rising water levels during heavy rain or flood events for Kalaw, San Jose, and Bangoyo Bridges. Specifications: Material: Weather-resistant and reflective paint or durable plastic/composite flood gauge plates. Height Coverage: From normal water level up to projected worst-case flood height (e.g., 0m to 5m). Color Coding: Green (0–1.0m): Normal or safe water level Yellow (1.1–2.5m): Alert level – rising water Orange (2.6–4.0m): Critical level – possible flooding Red (4.1m and above): Danger level – imminent flooding/evacuation Location Criteria: Within the field of view of installed CCTV cameras Accessible for maintenance and repainting Preferably mounted on permanent concrete structures (bridge piers, retaining walls) G. SCADA SOFTWARE Develop a client-server architecture to collect, process, and store data from remote weather sensors. Establish secure communication channels (e.g., via radio signal/P2P) between field stations and the central server. Implement failover mechanisms for data integrity in case of network disruptions. 3.2 Database Server Setup Install and configure a dedicated database server (e.g., PostgreSQL/MySQL) hosted onpremises at the PDRRMOC. Design data tables and schema for: o Timestamped rainfall measurements o Timestamped water level measurements o Timestamped water level measurements o Sensor health and status logs Enable automated backups and	CDAND TOTAL	2 000 000 00		
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INO.			redundancy to prevent data loss. 3.3 Sensor Data Integration Interface with: o Tipping bucket rain gauges for rainfall intensity and accumulation data. o Ultrasonic water level sensors for river/stream height measurements. Support data polling and/or push-based transmission from each remote station. Apply data validation and filtering to remove erroneous readings. 3.4 Real-Time Monitoring Dashboard Develop a web-based monitoring dashboard accessible via local network and secure remote login. Display on large screen monitor in PDRRMOC with: o Map-based view showing sensor locations and current readings. o Color-coded status indicators for sensor health and alert levels. o Graphs (limited) of historical and live data trends. Provide customizable thresholds for alert generation. 3.5 Alert and Notification System Pop-up notifications for: o Rainfall rate exceeding defined limits. o Water level exceeding flood warning thresholds. On-screen flashing indicators and alarms at the PDRRMOC. 3.6 User Roles and Access Control Administrator: Full access, configuration, and maintenance. Operator: Read-only dashboard access with ability to acknowledge alerts. 3.7 Training and Documentation On-site training for PDRRMOC staff on: o System operation o Data interpretation o Routine maintenance Delivery of complete user manuals and system documentation. 4. Technical Specifications 4.1 Hardware Requirements (Not included in the Scope deliverables) Database Server: o Processor: Intel Xeon or equivalent, 8 cores o Memory: 32 GB RAM o Storage: 2 TB RAID-1/RAID-5, SSD		Total Amount	Unit Price	Total Amount
			preferred				
				GRAND TOTAL	2,000,000.00		

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			o OS: Linux or Windows Server Large Screen Monitor: o Size: 32 inches o Resolution: 4K UHD o Input: HDMI/Display Port Field Sensors: o Rain Gauge: Tipping bucket type, accuracy ±2% at 20 mm/h o Ultrasonic Water Level Sensor: Accuracy ±2 cm, range 10 meters o Communication Module: P2P/Radio o Solar-powered with battery backup (minimum 3-5 days autonomy) 4.2 Software Requirements Database: PostgreSQL/MySQL (open-source or licensed as required) Server Application: Python/Node.js/Java backend with REST API endpoints Frontend Dashboard: HTML5, JavaScript (React/Vue/Angular), responsive design Security: SSL/TLS encryption, password hashing, role-based authentication Backup: Automated daily backups, stored on external drive or cloud H. Additional Qualifications/Certifications 1. Bidders must be located in Mindanao to assure immediate response support whenever problem arises. 2. Bidders must submit PCAB Communications License for communication specialty. 3. Bidders Local Technician must have at least 2 years' experience in any Disaster Risk Reduction Management Operations Center 4. Bidders Local Technician must have at least 2 years' experience in PAGASA-DOST Sensor Controls 5. Bidders must have HCSA Certified Installer 6. Bidders must have 1 BOSH safety officer Terms and Condition: 1. Should Provide Training on the maintenance of equipment 2. With installation includes, configuration, testing and commissioning, programming, including end-user training for 1 day 3. Bidders must have training for 1 day 3. Bidders must have conducted actual site survey of the propose site with site survey certificate as proof	GRAND TOTAL	2,000,000.00		
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ITEM	1 (110	UNIT OF	T DESCRIPTION I	APPROVED BUDGET		BID PRICES	
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			4. Bidder must ensure system compatability and integration with the Phase I and Phase II of the end-to-end multihazard early warning system installed in the province 5. The installed end-to-end Multi-Hazard Early Warning and Monitoring System Phase III with remote CCTV shall be covered by a one (1) year service warranty, effective from the date of final testing, acceptance, and turnover to the end-user office.				
				GRAND TOTAL	2,000,000.00		

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