CMC Leadville

Mt. Zion Weather Station

Bid Request Equipment Detail

Project Equipment Detail (supplement to CMC Bid Request)

Mt. Zion station weather station and base-station radio

Project Overview- Colorado Mountain College, Leadville campus, is completing work on a weather station network that will allow remote weather data to be accessed from both ridgeline (new Mt. Zion station 11,500') and valley floor (existing CMC on-campus station 10,000'). This request for quote is for the equipment to place a new station at the Mt. Zion site and to add radio telemetry equipment to the existing on-campus site. The on-campus station is accessible year-round, is connected by Ethernet cabling to a dedicated server on the CMC network and has its own solar power supply with battery storage. It sits approximately 400' from the nearest campus building in a small clearing in pine forest. The Mt. Zion location sits at the southern end of a line of mountains along Hwy 94, part of the Sawatch Mountain range just north of Leadville, CO. This site is not accessible during winter months due to deep snow.

Project Equipment Overview-

Mt. Zion site: A 30m tall weather station tower will be mounted on a 4"x4" treated-wood base with supporting guy wires (no concrete pad), cabling, and anchors (wood base supplied by purchaser). We expect our application for a USDA Special Use Permit to be approved by mid-August 2017. This project must receive land use permit to proceed. A Datalogger (Campbell Scientific CR1000), weatherproof enclosure, mounting equipment, and cabling appropriate for high alpine environment is specified. The Campbell Scientific CR1000 Datalogger is specified for this project due to compatibility with existing weather network equipment, existing software compatibility, and user familiarity. Weather sensor array will include: Temperature and Humidity, Alpine wind, and Barometer with all required mounting equipment (including mounting cross arm), radiation shielding, and cabling for sensors included. Station power supply requires: solar panel of appropriate size to supply station needs including: cabling, mounting equipment, charging regulator, and battery storage box (purchaser will provide deep cycle battery).

Mt. Zion and on-campus station- data telemetry will be accomplished by radio transceiver (unlicensed frequency) in a ruggedized enclosure with a Yagi directional antenna including cabling, mounting, grounding equipment, and any interface equipment as needed.

Miscellaneous- Vendor must provide pre-delivery configuration and programming of Mt. Zion weather station and on-campus base station components to ensure ready-to-install configuration for purchaser.

Vendor must include all equipment shipping costs in the provided quote.

Purchaser will install Mt. Zion equipment and on-campus station radio equipment.

Vendor must supply installation and maintenance documentation for all equipment supplied.

Project Equipment Specifications:

Count	Item Description	Notes
1	10m tall tower, hardened aluminum, including all necessary mounting equipment (e.g. guy-wires, anchors, hinged base plate, mounting bolts, hardware)	
1	Tower and equipment grounding kit	
1	Datalogger (Campbell Scientific CR1000) and weatherproof enclosure and all required cabling and mounting hardware.	Campbell Scientific CR1000 Datalogger is specific to this application to match existing equipment, software, and user familiarity
1	Solar panel with mounting equipment and cabling	
1	Battery enclosure with mounting equipment	
1	Temperature and RH sensor with cabling, mounting equipment, and necessary shielding	
1	Alpine wind sensor (speed/direction) with cabling, mounting equipment	
1	Barometer with cabling, mounting equipment, and necessary shielding	
1	Mounting cross arm appropriate for indicated sensors including mounting hardware	
2	902-928 MHz, 115K data rate, Spread Spectrum wireless data transceiver in ruggedized enclosure, 6-30 volts with RS232 / RS485 switchable interface, TNC Connector, Class I, Div II. Including all cabling, mounting equipment, and adaptors needed for their respective installations (Mt. Zion or on-campus)	
2	896-970 MHz 6 element 9bB Yagi Directional Antenna Including all cabling, mounting equipment, and adaptors needed for their respective installations (Mt. Zion or on-campus)	