

# Mt Lemmon Domestic Water Improvement District SCADA Upgrade

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The Mt Lemmon Domestic Water Improvement District (MLDWID) is requesting bids for the upgrade of its Supervisory Control And Data Acquisition (SCADA) system. All bids must provide a complete and functional system including all hardware, software, programming, display development, alarms, trends and historian.

Bidder must successfully perform a Factory Acceptance Test (FAT), witnessed by MLDWID representative(s), at bidder's facility prior to field installation. Bidder must successfully complete a Site Acceptance Test (SAT), at MLDWID's facility, following field installation. Bids must be based on the following payment terms: 30% on issuance of a purchase order, additional 40% upon successful completion of FAT, final 30% upon successful completion of SAT.

The upgraded SCADA system shall consist of the following:

## Office HMI SCADA:

- HP Envy desktop, Intel Core i7, 16GB memory, 1TB SSD and latest version of Windows.
- Samsung 27" S39C series 1000R curved FHD FreeSync monitor (DisplayPort, HDMI)
- Western Digital My Passport 5TB external USB 3.0 portable hard drive
- Ignition SCADA Software, includes Historian Database, Screen Development and Alarming.
- Remote PLC, SCADA HMI (HDMI 720p, Display Resolution 1280x720)
  - 24hrs of trending for each transducer and flow meter. These trends are FIFO in nature so anything post 24hrs is dropped from memory.
  - CSV to a 16GB USB drive option is available for no additional charge during project. Once project is done this can be enabled later for a service charge.
- HMI Programming and graphics connected directly to the office PLC.
- FreeWave: FGR3 Series, 902 to 928 MHz, Frequency Hopping Spread Spectrum, Up to 1 W, 97 km (60 miles) with clear line of sight, 80 kbps standard speed, 10/100 LAN with RJ45. Note: This radio will use the existing antenna and lightning arrestor. Provide new cable from antenna to lightning arrestor and lightning arrestor to radio.
- Phoenix Contact: DC UPS
  - QUINT4-UPS/24DC/24DC/20
  - (2) Powersonic PS-12120F2 (or available equal). AGM 12vdc battery. Wire in Series for 24VDC input to UPS.
- 120W 24VDC Power Supply (Phoenix UNO or Rhino)
- Industrial Ethernet Switch, 5 Port, Unmanaged (Phoenix Contact 1085039)
- C-more: EA9 series headless HMI, (2) serial, (1) Ethernet and (2) USB ports, (1) HDMI audio/video out and (1) memory card slot.
  - EA9-RHMI
  - 2m to 15m HDMI cable is included. Based upon control panel location.
- PLC: CLICK Ethernet Basic PLC, 24 VDC required, Ethernet and serial ports, Discrete Input: 8-point, DC, Discrete Output: 6-point, sourcing.
  - C0-10DD2E-D w/PLC Battery
- Sensaphone Sentinel Alarm Dialer (Using 6 Dry Contacts from CLICK), Standard Power
  - SCD-1200-CD
  - Sensaphone Sentinel 1 Year Premium Ethernet Subscription (SCD-1200-1YETH) is included.
  - Sensaphone account must be set up for Mt Lemmon Water billing system. We will assist in setting this up.
- A proper field survey must be completed for the panel sizing.
- Saginaw Enclosures (SCE) Environline Series Single-Door used for all parts references. Enclosure is Type 4 (Type 13 with louver kit).
- This location should require a new enclosure with mounting panel, 20x20x12 is typical.
  - There should be spacing on a wall location for this panel (interior or exterior).
  - Limit of 15m (~50ft) for passive HMDI.
  - Control equipment mounted on mounting panel.
  - 4in Type 3R louver kit.

## Loma Linda Tank Master PLC, No HMI:

- FreeWave: FGR3 Series, 902 to 928 MHz, Frequency Hopping Spread Spectrum, Up to 1 W, 97 km (60 miles) with clear line of sight, 80 kbps standard speed, 10/100 LAN with RJ45. Note: This radio will use the existing antenna and lightning arrestor. Provide new cable from antenna to lightning arrestor and lightning arrestor to radio.
- Phoenix Contact: DC UPS

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- QUINT4-UPS/24DC/24DC/20
- (2) Powersonic PS-12120F2 (or available equal). AGM 12vdc battery. Wire in Series for 24VDC input to UPS.
- 120W 24VDC Power Supply (Phoenix UNO or Rhino)
- Industrial Ethernet Switch, 5 Port, Unmanaged (Phoenix Contact 1085039)
- PLC :: Productivity2000 CPU.
  - P2-622 w/PLC Battery
  - P2-07B I/O base, 7-slot
  - P2-02DC DC base power supply, 24 VDC nominal input.
  - P2-04AD-1 analog input module, 4-channel, current, 16-bit, input current signal range(s) of 0-20 mA, external 24 VDC required.
  - P2-08NE3 discrete input module, 8-point, 24 VAC/VDC
  - P2-FILL filler module
- A proper field survey must be completed here.
  - The intent here is to mount new control equipment inside the existing control enclosure. There are two methods to retrofit an existing system:
  - Field Measured spacing then making din rail kits to screw into the field measured space. This keeps the existing controls in place mostly with new PLC ties. Field kits are office tested and ready to install.

## **Sabino Creek Remote PLC, No HMI:**

We acknowledge and include pricing of:

- No local display.
- FreeWave: FGR3 Series, 902 to 928 MHz, Frequency Hopping Spread Spectrum, Up to 1 W, 97 km (60 miles) with clear line of sight, 80 kbps standard speed, 10/100 LAN with RJ45. Note: This radio will use the existing antenna and lightning arrestor. Provide new cable from antenna to lightning arrestor and lightning arrestor to radio.
- Phoenix Contact: DC UPS
  - QUINT4-UPS/24DC/24DC/20
  - (2) Powersonic PS-12120F2 (or available equal). AGM 12vdc battery. Wire in Series for 24VDC input to UPS.
- 120W 24VDC Power Supply (Phoenix UNO or Rhino)
- Industrial Ethernet Switch, 5 Port, Unmanaged (Phoenix Contact 1085039)
- PLC: CLICK Ethernet Basic PLC, 24 VDC required, Ethernet and serial ports, Discrete Input: 8-point, DC, Discrete Output: 6-point, sourcing.
  - C0-10DD2E-D w/PLC Battery
  - C0-04AD-1 analog input module, 4-channel, current, 13-bit, input current signal range(s) of 0-20 mA
- A proper field survey must be completed here.
  - The intent here is to mount new control equipment inside the existing control enclosure. There are two methods to retrofit an existing system:
  - Field Measured spacing then making din rail kits to screw into the field measured space. This keeps the existing controls in place mostly with new PLC ties. Field kits are office tested and ready to install.

## **Carter Canyon Remote PLC, No HMI:**

We acknowledge and include pricing of:

- No local display.
- FreeWave: FGR3 Series, 902 to 928 MHz, Frequency Hopping Spread Spectrum, Up to 1 W, 97 km (60 miles) with clear line of sight, 80 kbps standard speed, 10/100 LAN with RJ45. Note: This radio will use the existing antenna and lightning arrestor. Provide new cable from antenna to lightning arrestor and lightning arrestor to radio.
- Phoenix Contact: DC UPS
  - QUINT4-UPS/24DC/24DC/20
  - (2) Powersonic PS-12120F2 (or available equal). AGM 12vdc battery. Wire in Series for 24VDC input to UPS.
- 120W 24VDC Power Supply (Phoenix UNO or Rhino)

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- Industrial Ethernet Switch, 5 Port, Unmanaged (Phoenix Contact 1085039)
- PLC: CLICK Ethernet Basic PLC, 24 VDC required, Ethernet and serial ports, Discrete Input: 8-point, DC, Discrete Output: 6-point, sourcing.
  - CO-10DD2E-D w/PLC Battery
  - CO-04AD-1 analog input module, 4-channel, current, 13-bit, input current signal range(s) of 0-20 mA
- A proper field survey must be completed here.
  - The intent here is to mount new control equipment inside the existing control enclosure. There are two methods to retrofit an existing system:
  - Field Measured spacing then making din rail kits to screw into the field measured space. This keeps the existing controls in place mostly with new PLC ties. Field kits are office tested and ready to install.

## **Miners Ridge Remote PLC, No HMI:**

We acknowledge and include pricing of:

- No local display.
- FreeWave: FGR3 Series, 902 to 928 MHz, Frequency Hopping Spread Spectrum, Up to 1 W, 97 km (60 miles) with clear line of sight, 80 kbps standard speed, 10/100 LAN with RJ45. Note: This radio will use the existing antenna and lightning arrestor. Provide new cable from antenna to lightning arrestor and lightning arrestor to radio.
- Phoenix Contact: DC UPS
- QUINT4-UPS/24DC/24DC/20
- (2) Powersonic PS-12120F2 (or available equal). AGM 12vdc battery. Wire in Series for 24VDC input to UPS.
- 120W 24VDC Power Supply (Phoenix UNO or Rhino)
- Industrial Ethernet Switch, 5 Port, Unmanaged (Phoenix Contact 1085039)
- PLC: CLICK Ethernet Basic PLC, 24 VDC required, Ethernet and serial ports, Discrete Input: 8-point, DC, Discrete Output: 6-point, sourcing.
  - CO-10DD2E-D w/PLC Battery
  - CO-04AD-1 analog input module, 4-channel, current, 13-bit, input current signal range(s) of 0-20 mA
- A proper field survey must be completed here.
  - The intent here is to mount new control equipment inside the existing control enclosure. There are two methods to retrofit an existing system:
  - Field Measured spacing then making din rail kits to screw into the field measured space. This keeps the existing controls in place mostly with new PLC ties. Field kits are office tested and ready to install.

## **Propane Generator and Transfer Switch:**

Furnish and install generator/transfer switch:

- Generac 7172 Guardian 10kW Home Backup Generator with 16-Circuit Transfer Switch.
- Provide 10 year extended warranty.

## **Excluded from pricing:**

- Generator Propane Tank.