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**To:** Tim Noble

λ City of Columbus Dept Public Utilities  
λ Fairwood Ave  
λ Columbus, Oh

**Date:** 4/20/2012

**Proposal Number:** 042012

**Job Name: "I/A Series" Web Based Upgrade  
Sewer Maintenance Operations Center**

**Telephone Number:** 1-513-874-6733

Innovative Energy Solutions is pleased to provide the following proposal for upgrading your existing Invensys Network 8000 system and "Signal" Graphical User Interface (GUI) to the new open architecture "I/A Series" web-based technology at the Sewer Maintenance Operations Center. This upgrade will provide a platform for open systems expansion for the future and will protect your investment in Network 8000.

**Under this proposal IES will:**

- Furnish the necessary labor required for programming, startup and commissioning of the system.
- Provide one training session (8 hours) for building operators.
- Make all calibrations, adjustments and a final check of the operation of this equipment.
- Guarantee the equipment for a period of one year after completion of the installation.

**This proposal includes the following:**

- Provide and install 3 Universal Network Controllers (ENC 520) with all accessories, panels, power supplies, and drivers to tie into the existing Network 8000 ASD communications bus in the building. Replace 3 existing GCM's with the 3 new ENC's and move all existing Network 8000 controllers over to their new respective ENC.
- Any existing programming within the GCM's shall be duplicated in the ENC's
- ENC 1 & 3 will be located in the Maintenance shop and ENC 2 will be relocated to the MER on the 2<sup>nd</sup> Floor of the Admin Area.
- Each new ENC will have a Network 8000 ASD Driver to communicate directly with the existing Invensys Network 8000 control equipment.
- IES will provide new Enterprise Level Software for installation on owner furnished PC. This will be the new control/ BAS server for the building. Owner to furnish and setup a new PC platform compatible with I/A Series and meet the minimum standards set by IES.
- IES will upgrade MZ2 #28, 31, and 32 controlling the Boilers, Pumps, and RTU-17 in the Boiler Plant to the new MNB-1000 Plant Controllers. All connected I/O points will remain in place and all existing software will be duplicated in the new controller. This upgrade sets a BACnet infrastructure in place and begins the process to take your building to an "Open Protocol" environment. It also free up 3 spare Network 8000 Microzone 2 cards which can be used for future replacement if needed. I/A Series Open Systems platform offers enhanced features over the proprietary Network 8000 products.



- IES will upgrade LCM's 5 & 6 controlling RTU 19 & 32 to the new Bacnet Controllers. All connected I/O points will remain in place and all existing software will be duplicated in the new controller. This upgrade sets a BACnet infrastructure in place and begins the process to take your building to an "Open Protocol" environment. It also removed the older obsolete LCM's from the network. These new BACnet panels will be wired to ENC-2 in the Admin MER. I/A Series Open Systems platform offers enhanced features over the proprietary Network 8000 products.
- All remaining Network 8000 Controllers in the building will be connected to the new ENC's. All existing points shall be linked to the new Graphical Platform.
- IES will provide creation and implementation of all color graphical web pages for each piece of mechanical equipment that is currently being controlled through the existing Invensys NW8000 system. These graphics will follow IES current Engineering Standards and offer enhanced features over your existing Signal Platform.
- All system alarms will be routed via e-mail to various locations as well as to cell phones & pagers as defined by the owner.
- The new system requires an IP Address on your existing Building IT Network. The system will be accessed from a standard browser such as Internet Explorer or Netscape Navigator. All access to the system is password protected and offers a high level of security.
- IES will provide and install a new Cat 6 communications network between the Maintenance Office and the Admin 2<sup>nd</sup> Floor Mech Room.
- New BACnet communication is also provided to new MNB-1000 Plant Controllers.
- New wire will be run concealed when possible and exposed without conduit and supported at regular intervals above 8 feet.
- Owners IT Department will provide a single point connection to the Network.

**Upgrade AHU's 59 & 60 in the Admin Area with new MNB-1000/Plant controllers:**

- IES will upgrade MZ2 #5, 6, 7, & 8 controlling Admin AHU's 5 & 6 to the new MNB-1000 Plant Controllers. All connected I/O points will remain in place. All existing software will be duplicated in the new controller. This upgrade sets a BACnet infrastructure in place and begins the process to take your building to an "Open Protocol" environment.
- This also frees up 4 spare Network 8000 Microzone cards which can be used for future replacement if needed. I/A Series Open Systems platform offers enhanced features over the proprietary Network 8000 products.
- IES will provide and install a new Cat 6 communications network between the Admin 2<sup>nd</sup> Floor Mech Room and the new controllers.
- New BACnet communication is also provided to new MNB-1000 Plant Controllers.
- New wire will be run concealed when possible and exposed without conduit and supported at regular intervals above 8 feet.

**Upgrade 61-MF2 PID VAV Controllers to MNB-V2 BACnet VAV controllers:**

- IES will provide and install 61 controllers, 61 space digital S-Link Thermostats, new duct discharge sensors on reheat boxes and reuse all existing wiring.
- IES will upgrade 46 existing VAV controllers on the 46 Boxes in the Main Level Admin Area to the new MNB-V2 BACnet platform. These boxes are served from AHU's 59 & 60.
- IES will upgrade 15 existing VAV controllers on the 15 Boxes in the Main Level Lab Area to the new MNB-V2 BACnet platform. These boxes are served from RTU 27.
- All connected I/O points will remain in place. Existing control valves will be reused. All



existing software will be duplicated in the new controller. This upgrade sets a BACnet infrastructure in place and begins the process to take your building to an “Open Protocol” environment.

- This frees up 61 spare Network 8000 MF2PID VAV controllers & 61 thermostats to be used as spares for future replacement if needed. I/A Series Open Systems platform offers enhanced features over the proprietary Network 8000 products.
- IES will provide and install a new BACnet communication network to these controllers and route to ENC-2. New wire will be run concealed where possible and exposed without conduit and supported at regular intervals above 8 feet.

Total Net for all above Sum: \$143,825.00

(One Hundred Forty Three Thousand Eight Hundred Twenty Five Dollars and 00/100)

**Alternate 1 Surveillance Lab Office: Upgrade 8-MF2 PID VAV Controllers to MNB-V2:**

- IES will provide and install 8 controllers, 8 space digital S-Link Thermostats, new duct discharge sensors on reheat boxes and reuse all existing wiring.
- IES will upgrade 8 existing VAV controllers on the 8 Boxes in the Main Level Surveillance Lab office to the new MNB-V2 BACnet platform. These boxes are served from RTU 29.

Total Net add Alternate 1: \$7,875.00

(Seven Thousand Eight Hundred Seventy Five Dollars and 00/100)

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2. **Price/Delivery Terms.** Unless otherwise provided on Supplier's order acknowledgment, price and delivery terms are FOB Supplier's plant and do not include sales, use, or other taxes. Supplier may, at its option, make partial shipments and invoice for same.
3. **Payment/Credit/Security.** Payment terms for buyers with a credit standing deemed adequate by Supplier are net 30 days from date of invoice.
4. **Cancellation by Customer.**
  - (a). Except as provided in sub-paragraph (b) below, Customer's wrongful non-acceptance or repudiation of a contract to purchase Supplier's goods or services shall entitle Supplier to recover the price or, where an action for the price is not permitted by law, damages, as provided by law, including Supplier's lost profits. In this connection all goods purchased and all services furnished by Supplier in complete or partial fulfillment of a special order from Customer shall be deemed identified to the contract between Supplier and Customer.
  - (b). Customer's wrongful non-acceptance or repudiation of a contract to purchase from Supplier goods which Supplier generally carries in inventory as stock items (or which are otherwise readily resaleable by Supplier at a reasonable price) shall entitle Supplier to recover damages, as provided by law, including Supplier's lost profits.
5. **Warranty.** Supplier warrants that all new and unused goods furnished by Supplier are free from defect in workmanship and material as of the time and place of delivery by Supplier. Except for goods and services furnished by Supplier through its employees arising out of orders solicited by Supplier's Representatives and duly accepted by Supplier, Supplier does not warrant, and shall not be liable for, the quality of any goods or services furnished or to be furnished by representatives, distributors, dealers or other non-employees of Supplier.

As a matter of general warranty policy, Supplier honors an original buyer's warranty claim in the event of failure, within 12 months from the day of delivery by Supplier to the site for Innovative Energy Solutions equipment and for Building Management Systems goods, which have been installed and operated under normal conditions and in accordance with generally accepted industry practices. This general warranty policy may be expanded or limited for particular categories of products or customers by information sheets published by Supplier from time to time:

The express warranties provided above are in lieu of all other warranties, express or implied. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES ARE EXCLUDED WITH RESPECT TO ANY AND ALL GOODS AND SERVICES FURNISHED BY SUPPLIER.

In case of Supplier's breach of warranty or any other duty with respect to the quality of any goods, the sole and exclusive remedies therefore shall be, at Supplier's option, (1) repair, (2) replacement, or (3) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the non-conforming goods or parts.

Return authorization must be obtained from Supplier prior to the return of any defective material. All unauthorized returns will be sent back, freight collect, to the Customer. All returns must be made with transportation prepaid by the Customer. Supplier's examination of the units must disclose to its satisfaction that defects exist and have not been caused by misuse, neglect, improper installation, repair, alteration or accident before replacement is made or credit issued.
6. **Force Majeur.** Supplier and Customer assume the non-occurrence of the following contingencies which, without limitation, might render performance by Supplier impractical: strike, riots, fires, war, late or non-delivery by suppliers to Supplier, and all other contingencies beyond the reasonable control of supplier.
7. **No Consequential Damages.** Under no circumstances shall Supplier be liable to any person (including distributor) for loss of use, income, or profit or for incidental, special or consequential or other similar damages, arising, directly or indirectly out of or occasioned by the sale, operation, use, installation, repair or replacement of the goods or services, whether such damages are based on a claim of breach of express or implied warranties (including merchantability or fitness for a particular purpose), tortious conduit (including negligence and strict liability) or any other cause of action, except only in the case of personal injury where applicable law requires such liability.
8. **Governing Law.** The law of the State of Ohio shall govern all transactions to which these standard terms and conditions apply.
9. Prices in this quotation remain in effect until December 31, 2012.