

# 22-DES-RFP-4: WPCB System Integration Services - Preproposal Conference

Water Pollution Control Bureau

February 24,28, 2022

11-12 a.m.

# Agenda

- Overview of the solicitation:
  - Solicitation process
  - Solicitation documents
  - Timeline
- Water Pollution Control Plant – background information
- Overview of the scope of work of the contract
- Q&A

# Timeline

- Mandatory Pre-Proposal Conference #1, Feb. 24, 2022 11:00 am
- Mandatory Pre-Proposal Conference #2, Feb. 28, 2022 11:00 am
- Questions due March 1, 2022. 5:00 pm
- Addendum Issuance (if applicable) March 4, 2022
- Proposals due March 16, 2022. 5:00 pm
- Interviews will be scheduled late spring/early summer depending on number of responses
- Target contract signing in Summer 2022

# Arlington County's Water Pollution Control Plant

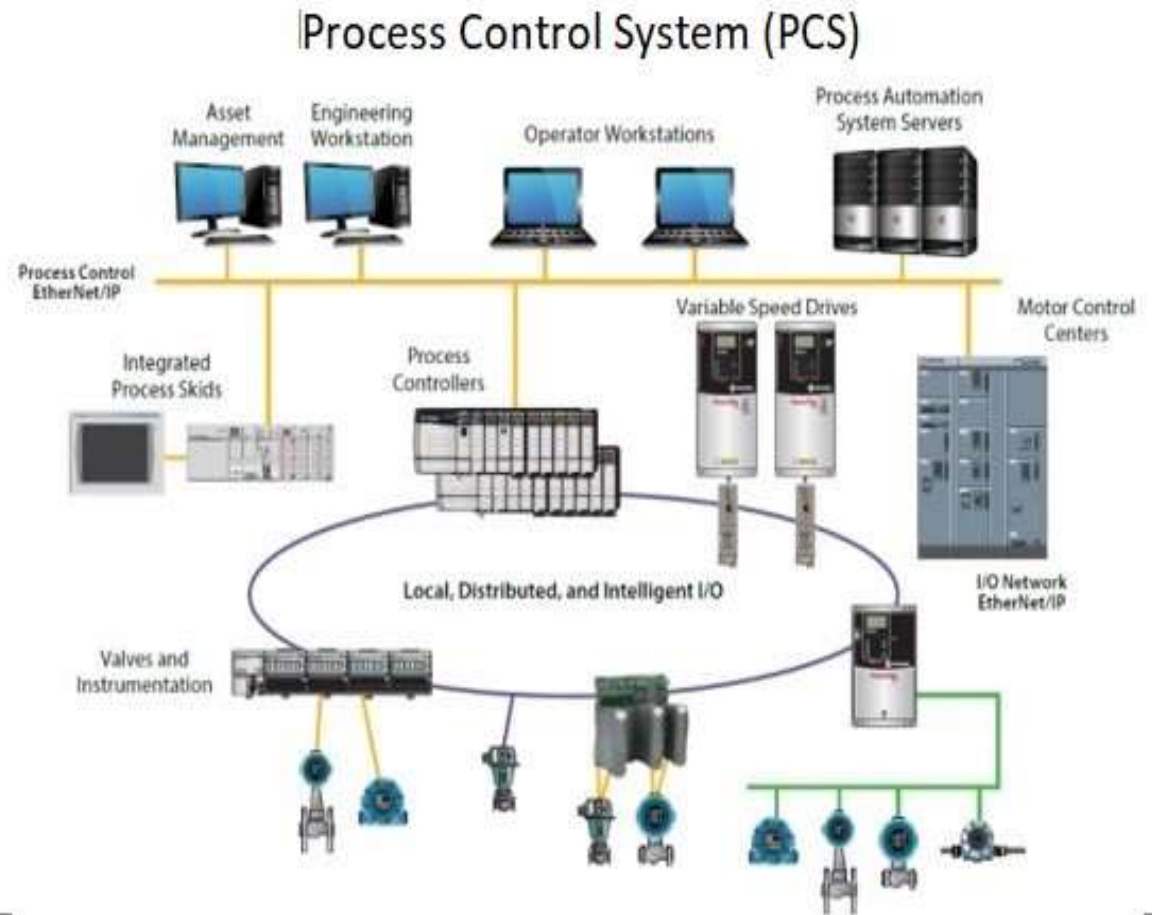
Wastewater Treat Plant for Arlington County with 40 MGD design capacity; currently averaging 23 MGD

- Liquids Treatment Processes Include:
  - Screening and Grit Removal
  - Primary Clarification and Flow Equalization
  - Biological Nutrient Removal (BNR) via Aeration Basins followed by Secondary Clarification
  - Denitrification Filters
  - Chlorination and Dechlorination
  - Discharge into Four Mile Run - Potomac River - Chesapeake Bay Watershed
- Solids Treatment Processes Include:
  - Thickened using Gravity and Dissolved Air Flotation Thickeners
  - Blended prior to Centrifuge Dewatering
  - Lime is added to create Class B Biosolids for land application



# Features:

- Isolated PCS domain & DMZ
- vSphere 6.5- 4 hosts
- Redundant Switch & Servers
- SolarWinds for Monitoring
- FTV SE 10 & FTTM 12
- RA Thin Manager/Client
- RA Redundant ControlLogix L63-V20->L83-V33
- Foundation FieldBus



# System Integration Services Required

- Install New or Upgrade Existing Controller and IO hardware
- Modifications of Device Level Network, Ex. Modbus, Foundation Fieldbus
- Modification Control Panel Layouts
- Installation or Upgrade of Control System Software
- Control System Alarm Management
- Software and Firmware Patching
- Installation and Configuration Physical and Virtual Servers
- Data analysis and System Documentation
- Other services as requested

## Example projects

- WPCB reserves the right to pursue all, some or none of these projects
- They are for illustrative purposes only and represent some of the services that may be needed for during the contract

# Alarm Management Plan

- We have over 3500 alarms in SCADA system, and use Win911 to announce all critical alarms
- Too many active alarms (>120) and Operators don't have good documentation on what to do when a particular alarm triggers
- We have developed an Alarm Management Plan (AMP) to classify and rationalize all these alarms
- Implement AMP and set up all alarms following the ISO standard and AMP principle



# Network Switch Configuration

- Our PCS is built on an isolated network
- New network project will have 3 levels: Core, Distributed and Device, and different segments for Distributed Control Units (DCUs)
- Configure, support and maintain current and future network
- Set up and configure 3 levels of switches

# Upgrade Outdated Control Hardware

- Replace and Upgrade SLC500 Controller and IO Modules
- Replace and Upgrade Outdated Field Devices
- Replace ControlNet with Ethernet

# HMI System Upgrade and Improvement

- We use RA FactoryTalk View SE 10, Alarm & Event Server, Win911
- Upgrade FT View SE, Alarm & Event Server, Win911
- Improvement for HMI screens, Trend, Alarm Announcement
- Enhance Data Collection and Add Control Data Points for Report
- Upgrade FactoryTalk Transaction Manager to FactoryTalk Historian

# Foundation Fieldbus Troubleshooting

- Configure and troubleshoot Fieldbus Link Devices: EN2FFR
- Replace and configure Fieldbus devices

# Data Analytics and Power Monitoring

- Analyze energy consumption data
- Analyze chemical consumption and improvement for cost savings
- Recommend and implement tools for improved power monitoring
- Replace obsolete power monitors and smart breakers.
- Troubleshoot Modbus comm and convert to Ethernet for monitoring
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# Training & Documentation:

- Document System Configuration, Device Setup Procedure...
- Document Network Layout
- Training Operators on the Control System Interface, Working Procedures
- Training Electrical and Instrumentation Technicians on Control System Troubleshooting

Questions?

