Coos Bay - North Bend Water Board SCADA Software

Request for Proposal

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List of Abbreviations

CBNBWB	Coos Bay - North Bend Water Board
CISA	Cybersecurity and Infrastructure Security Agency
CMMS	Computerized Maintenance Management System
DI	Discrete Inputs
DNP3	Distributed Network Protocol
DO	Discrete Outputs
EAMS	Enterprise Asset Management System
EEPROM	Electrically Erasable Programmable Read-Only Memory
GIS	Geographic Information System
HMI	Human-Machine Interface
IEC	International Electrotechnical Commission
LIMS	Laboratory Information Management System
OPC-UA	Open Platform Communications Unified Architecture
OS	Operating System
PLC	Programmable Logic Controller
RTU	Remote Terminal Unit
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Procedure
SSO	Single Sign-On

1.0 Introduction

The Coos Bay - North Bend Water Board (CBNBWB, Board) (herein referred to as the "Owner") desires to select a supervisory control and data acquisition (SCADA) software package to modernize the Owner's SCADA system. The system selected must support the Owner's existing water treatment and distribution system. Through this selection, CBNBWB will select a human-machine interface (HMI), a historian, alarm notification, and reporting software packages. The proposal process will be a two-part selection where written proposals will first be evaluated to select a shortlist of vendors that will then be invited to participate in live demonstrations. Finally, the Owner will select the highest scoring vendor to move forward with the SCADA upgrade effort.

1.1 Objectives

The purpose of this document is to communicate to prospective software vendors the type and content of information to be communicated as part of the live demonstrations and written proposals.

1.2 Schedule of RFP Events

Release RFP Documents	July 8, 2025
Deadline for Questions	July 22, 2025
Deadline for Submission	August 5, 2025
Notice of Shortlist	August 19, 2025
Vendor Demonstrations (if invited)	Sept. 1-8, 2025
Selection of Vendor	September 22, 2025

1.3 Evaluation Structure

These instructions were developed to inform Proposers on how the Owner will score each of the proposals and demonstrations. Written proposals shall be drafted to address the specifications listed in Section 1.2.2 and Section 2. Demonstrations are available to be performed in person and/or virtually Owner has preference for in person demonstrations.

1.3.1 Evaluation Methodology

All written proposals submitted by Proposers will be evaluated and scored by the Owner to identify a shortlist of three firms to move on to the next round of evaluation. These three shortlisted firms will be invited to participate in live demonstrations, either in person or virtually, to present their software. The Owner's choice of control system components will be made by a team of CBNBWB staff evaluating the demonstrations (herein referred to as the "Selection Committee") through a best-value selection process. The criteria that will be used for evaluating the demonstrations are described in Section 3.0.

The evaluation methodology section provides details on how the Proposers will be scored and how different portions will be weighed relative to each other. In the written response, Proposers should ensure their written submissions address each category and question. In the demonstration, Proposers

should ensure that their demonstration addresses each of these scoring categories and the specific items are called out therein.

1.3.2 Technical Specifications

The technical specifications section provides a general overview of the proposal objectives. A network block diagram (see Figure 2-1) is provided to help Proposers understand the desired system configuration and is not intended to provide complete system details.

The system and fee proposal schedule definitions provide the Proposer with the necessary information to develop costs for the fee proposal schedules. The system and costing definitions are intended to be a high-level project outline that shall be used to determine quantities and components that will be required to meet the Owner's needs. Proposers are responsible for determining how to best provide an overall product that will meet these definitions as well as the requirements and criteria in the technical requirements section.

- **Foundational HMI.** Software will need to provide the foundational functionality assumed of all HMI software. HMI software will need to be intuitive and provide easily accessible data for staff to make decisions and actions.
- **Alarming with Criticality Management.** Software will need to provide an alarming system with criticality management for process alarms.
- **High Performance HMI.** Software will need to support the development of a "High Performance HMI" user interface using standardized manufacturer object-oriented templates.
- **Redundancy**. Software will need to provide capabilities for redundancy and automatic fail-over features.
- **Historian and Data Access.** Data collected by the HMI system will need to be stored in a historical database that will allow the Owner to easily access past data and trends without the need for additional scripting.
- **Cybersecurity.** HMI software will need to provide security to protect the system from unauthorized access and use. Software must be compatible with current security practices recommended by the USA Cybersecurity and Infrastructure Security Agency (CISA).
- **Future Development.** HMI software will need to provide features that will allow for future development and expansion of the HMI system. Custom proprietary code or custom scripting that may prevent future upgrades is discouraged.
- **Future Stability and Support.** HMI software manufacturers will need to provide assurance of future stability and ongoing support of the proposed software.
- **Integration with Mission.** The historian software will need to connect with the owner's existing Mission SCADA system through an OPC-UA connection.

1.3.3 Fee Proposal Schedules (Cost)

The fee proposal schedules' section will provide details on how Proposers should provide costs for evaluation. Cost tables are provided in Section 2.2 for Proposers to include line items for each component needed to achieve the required system while complying with the technical requirements.

1.3.4 Industry Presence

Each Proposer must provide information about the proposed product installed in the public water industry in their written proposal. Proposers must also provide a list of vendors and

contractors/integrators capable of supporting the product for evaluation. This section will be an open response format.

1. A list of public water agencies in North America using your platform to indicate the installed product. For each installation, include the agency name, location, tag count, and date of installation.
2. A list of references of public water agencies in the western US using the proposed product. Proposers will provide the agency names, contact names, phone numbers, and email address. Include no more than five (5) references.
3. A list of vendors and engineers/contractors/integrators capable of supporting your platform located within 180 miles of Coos Bay, Oregon. Provide a contact name, phone number, website, and address for each. Describe any qualification or certification process that is provided for contractors/integrators for this product.

1.4 Response Structure

This section provides information to Proposers on what written information to create and submit to the Owner as a part of their written proposal. This written response shall include the following information in this order:

1. Company and platform information with contact information
2. Industry Presence Response (see section 1.2.4)
3. Proposed System Block Diagram
4. Responses to the questions provided in Table 1-1.
5. Cost breakdown itemizing the software required to implement the proposed system block diagram. See Section 2.2.
6. List of training courses.

Table 1-1. Written Proposal Questions

#	Foundational HMI	Maximum Score
1	Describe how development, configuration, testing, patching and deployment can be achieved through the proposed software without causing disruption of the running process system.	10
2	Describe the extent of product support documentation that will be available for the proposed software.	10
3	Provide a list of compatible operating systems.	5
4	List all mobile SCADA applications written for the iOS and Android OS and briefly describe what features these applications provide.	5
5	List all web-based SCADA applications and briefly describe what features these applications provide.	5
6	Provide three screenshots of an example project at a drinking water treatment facility (not included in page count). At least one screenshot should show an example of the proposers High Performance HMI graphics using the software's built-in library of objects.	20
#	**Redundancy Questions**	
1	Describe how redundancy will be provided for all critical SCADA functions so there will be no single point of failure for critical functions. Critical SCADA functions include any component that will, during failure, disrupt the ability for the system to continue to provide monitoring and control of the system (e.g., graphical user interface [GUI], input and output (I/O) servers, real-time databases, historians, alarming, user access, etc.).	10

2	Describe how critical system components will be monitored for failure and how the monitoring system can be configured and updated for new or removed components.	10
3	Describe how modular components may be used for the system to allow for failover to a hot standby in case of software or hardware failure.	10
4	Provide a description of how the standby component will be continuously updated with synchronized data to be available for failover.	10
#	**Security Questions**	
1	Do you have third-party vulnerability audits of your software/product? Are the reports made available to clients? If so, provide a copy of the most recent third-party vulnerability audit report as an appendix to your responses (not included in page count).	10
2	Describe your vulnerability disclosure/notification procedure to clients when vulnerabilities are discovered.	10
3	Describe your patching and update procedure and cadence.	10
4	Have you or any of your clients had a data breach or security incident because of a vulnerability in the software/product that you have proposed? If so, describe the support provided to your client.	10
5	Are there any current known and unpatched vulnerabilities in the software/product that you have proposed?	10
6	What methods are employed to protect data, including authentication in the software/product you are proposing?	10
#	**Alarm Management Questions**	
1	Describe how alarm events and alarm criticality are configured and managed.	10
2	Describe how historical alarms and events are stored.	10
3	What standard are the alarm management tools based on?	5
4	Confirm alarms can be archived or purged from the alarm historical database.	5
5	Confirm alarms can be shelved, disabled, and suppressed.	10
6	Describe how alarm events are logged and how they can be accessed in the alarm database (include data captured in a logged event).	10
7	Describe available capabilities for remote alarm notification and how remote alarm notifications would be configured and managed.	5
#	**Historian and Data Access Questions**	
1	Describe how the proposed software can import data from an existing Siemens WinCC Process Historian database.	20
2	Describe how real-time and historical data are accessed for trending, reporting, and analytics.	10
3	Describe any tools available for the generation of automated data reports from the historian on a periodic basis.	5
4	Describe additional tools and functionality for real-time and historical data operational business intelligence insight, chain-of-custody management, and filtering and validation.	5
5	Describe how the software can collect data from an OPC-UA data source that is separate from the HMI software.	5
#	**Future Stability and Support Questions**	
1	How many years has the manufacturer's current company organization been in business? If the product will be provided by a third-party distributor, provide distributor information as well.	10
2	Describe the training programs and products offered to provide training for development, administration, and operations' levels of the offering. Attach a training course description and schedule for 2026 as an appendix to the 15-page response.	10

3	Describe the warranty policy that will be provided for the HMI software.	10
4	Provide any technical support options/tiers and capabilities offered in addition to the options required for cost comparison in Section 5.	10
5	Describe the technical support program escalation process. How does the escalation process change for different tiers of technical support offerings?	5
6	Provide a list of system integrators located within 180 miles of Coos Bay, Oregon.	10
7	Provide a list of system integrators located withing Oregon, Washington, and Idaho.	5
8	Provide a contact name, phone number, website, and address for the regional sales representative for this product	5

2.0 System and Cost Definition

This section presents in detail the technical aspects for the demonstration, including system architecture and addition cost definition and information. The system architecture and cost definitions provide the Proposer with the necessary information to develop their own conceptual system architecture, based on their system components, and additional framework around cost breakdowns to develop cost information. The system and costing definitions are intended to be a high-level project outline that shall be used to determine quantities and components that will be required to meet the Owner's needs. Proposers are responsible for determining how to best provide an overall product that will meet these definitions, in addition to the requirements and criteria in the technical requirements and technical criteria sections, respectively.

2.1 System Architecture

Figure 2-1 below presents the existing network block diagram. The Coos Bay water plant currently uses a Profinet system to communicate with all field devices shown in Figure 2-1; however, the plant will be upgraded to use primarily Rockwell Automation CompactLogix 5380 PLCs and an Ethernet/IP communications protocol for control as part of this SCADA upgrade project. Figure 2-1 shows the proposed upgraded network diagram. The proposer shall include a SCADA architecture diagram specific to its SCADA system and any recommendations for specific software, communication architecture, and specifications of the Operating System (OS). For the purposes of this document, a thick client is defined as a fully functional workstation capable of workload independent of the server. The thin client is defined as a workstation dependent on the server for the bulk of its processing workload. To help the Owner understand the differences between the proposed software packages, the Owner requests the Proposer include a network block diagram that demonstrates how the Proposer would meet or exceed the technical requirements shown in Figure 2-1 below.

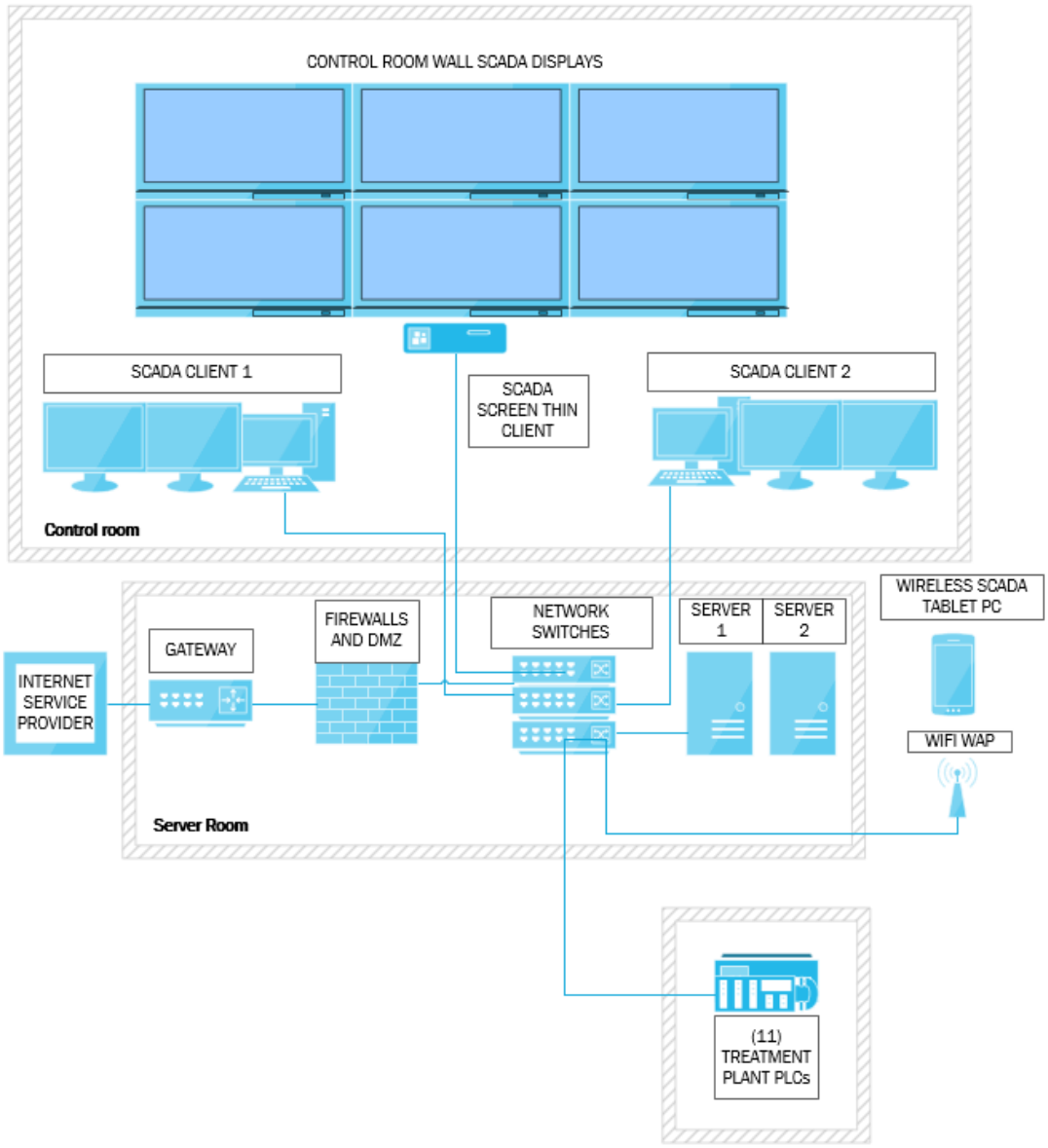

Figure 2-1. Conceptual system block diagram

2.2 Cost Definition

The Proposer shall demonstrate that the manufacturer of the software is able to provide the Owner with a HMI software package that meets the objectives of the system architecture detailed above, demonstrate technical criteria as described by the Proposer in response to the technical questions at the end of each section, and meet the technical requirements described in the technical requirements sections.

2.2.1 Software Licensing

The proposed HMI software package shall meet the needs of a system by meeting or exceeding the following minimum requirements:

Table 2.1. HMI Software Sizing Information

Component	Quantity
SCADA Servers	2
Historians	1
Development (SCADA and Historian) Workstations	1
SCADA Tags	5,000 tags
Displays	100 displays
Historian Tags	500 tags
Concurrent Process Historian Clients	2
Laptop Remote Access Client	1
Tablet Remote Access Client	1
Thick Client HMI Workstation Client	3
Alarm Management System Servers	2

To help the Owner understand the cost impacts, the Proposer shall provide a breakdown of the proposed software package.

Table 2.-2. HMI Software License Costs

Component	Quantity	Unit (LS, EA, other)	Unit Cost	Total Component Cost
SCADA System Server Pair			$ -	$ -
Device Tags			$ -	$ -
Displays			$ -	$ -
Historian Tags			$ -	$ -
Concurrent Historian Users			$ -	$ -
Remote access HMI Client			$ -	$ -
Thick Client HMI			$ -	$ -
Alarm Management System			$ -	$ -
			Subtotal	**$ -**

2.2.2 Operations and Maintenance Training

The Proposer shall provide costs for the training of staff at the Owner's facility for the HMI software package, to include a list of recommended classes to allow operators to become familiar with the proposed SCADA package, for the developers to become certified in the proposed software package.

Table 2.-3. Operations and Maintenance Training Costs

Component	Quantity	Component Cost	Total Component Cost
End User Training		$ -	$ -
Developer Training		$ -	$ -
		Subtotal	**$ -**

2.2.3 Software Maintenance and Technical Support

To help the Owner understand the long-term costs of the software package, the Proposer shall provide information related to software maintenance and technical support for the proposed software package, to include the following:

7. Set up a long-term software-maintenance contract with the owner, for a minimum of ten (10) years. If the annual costs listing is provided, the escalation rate used should be included.

Table 2-4. Software Maintenance and Technical Support Costs

Component		Escalation Rate	Quantity	Component Cost	Total Component Cost
Year 1	Software Maintenance		LS	$ -	$ -
Year 2	Software Maintenance		LS	$ -	$ -
Year 3	Software Maintenance		LS	$ -	$ -
Year 4	Software Maintenance		LS	$ -	$ -
Year 5	Software Maintenance		LS	$ -	$ -
Year 6	Software Maintenance		LS	$ -	$ -
Year 7	Software Maintenance		LS	$ -	$ -
Year 8	Software Maintenance		LS	$ -	$ -
Year 9	Software Maintenance		LS	$ -	$ -
Year 10	Software Maintenance		LS	$ -	$ -
Year 1	Technical Support		LS	$ -	$ -
Year 2	Technical Support		LS	$ -	$ -
Year 3	Technical Support		LS	$ -	$ -
Year 4	Technical Support		LS	$ -	$ -
Year 5	Technical Support		LS	$ -	$ -
Year 6	Technical Support		LS	$ -	$ -
Year 7	Technical Support		LS	$ -	$ -
Year 8	Technical Support		LS	$ -	$ -
Year 9	Technical Support		LS	$ -	$ -
Year 10	Technical Support		LS	$ -	$ -
				Subtotal	**$ -**

3.0 Demonstration Methodology

The SCADA software evaluation process will require shortlisted Proposers to provide a demonstration of their proposed product's functionality, based on but not limited to specific requirements.

The demonstration will be hosted in-person and virtually. The Proposer can decide if they want to have their team in person, fully virtual, or a combination of the two options. The format for the demonstration will be an interactive demonstration of the technology. This allows the Owner to ask questions based on what aspects of the software they would like to further explore, see how it is programmed, and experience the software through use during the demonstration. The demonstration will be broken into two sections. The first section shall be targeted towards the end-user, or operator, experience; the operator demonstration shall not exceed three (3) hours. The second section shall be targeted towards the technical application, or developer, experience; the developer demonstration shall not exceed one (1) hour. The total length of the demonstration shall not exceed a total of four (4) hours. The Selection Committee will score the Proposers' demonstration and written material, and the highest-scoring technology will be selected for use.

Table 3-1 lists out the activities and tasks that the Proposer is expected to demonstrate and encompasses the Selection Committee's scoring criteria. The table breaks the demonstration into relevant categories and provides a maximum score for that category.

Table 3-1. Demonstration Checklist

HMI	Maximum Score
Development and Standards	
Demonstrate an example of high-performance HMI graphics utilizing out of the box objects	30
Demonstrate software's ability to use a standard color library	10
Smart Object (templates)	
Demonstrate the ability to add new objects using graphics libraries and templates that can be reused on other screens.	10
Demonstrate object animations such as blinking	10
Demonstrate the capability to enable/disable equipment and simulate data values to test HMI functionality	10
Remote Access	
Describe the software's remote access solutions	10
Demonstrate how the software's screen resolution handles the following devices: 1. Large-format control room displays (4k) 2. Standard workstation monitors 3. SCADA laptops **4.** Medium-and small-format mobile devices such as tablets and smartphones.	20
External System Integration	
Demonstrate how the HMI can access external files (PDF, JPG, PNG, etc.)	10
Describe how the software can integrate with external sources (PDF SOP files, record drawings, reports, LIMS, Asset Management, etc.)	10

Navigation	
Demonstrate hierarchical display functions, alarm screens, event logs, communication screens and PLC diagnostic screens.	50
Demonstrate how a navigation banner can be used to access any screen in the screen hierarchy. Demonstrate navigation between configured screens. Demonstrate navigation from an alarm summary screen to the process area screen.	50
Demonstrate how a user can change from light to dark theme in the runtime environment	10
Security	
Demonstrate various security groups showing the security setup and administration requirements. 1. View only group 2. Limited control mode 3. Full configuration mode 4. Other modes	10
Describe single sign-on (SSO) capabilities and how active directory/LDAP can be used to log in and out	10
Redundancy	
Demonstrate how the system supports redundancy	10
Demonstrate how the system supports data collection redundancy	10
Demonstrate the fail-over time and failback times between redundant software components	10
Miscellaneous	
Demonstrate the HMI graphics when loss of communication to the PLC occurs	10
Demonstrate or explain how Operating System (OS) security updates can be applied to the system without loss of SCADA visibility and control.	10
Demonstrate any graphic function that makes your system unique	50
Process Historian	**Maximum Score**
Database Architecture	
Demonstrate adding/removing/editing a tag to the Historian	10
Demonstrate how users search for tags within the Historian	20
Trending	
Demonstrate creating a new trend in HMI runtime and with the historian's tools	20
Demonstrate adding several pens to a trend, adjusting colors, limits, scales, etc.	20
Historian	
Demonstrate how the Historian will collect data from the PLC's and identifies bad data	10
Demonstrate redundant data collection	20
Demonstrate how to save/load/export trends and data from the Historian	30
Describe how the Historian might connect to an OPC-UA data source.	10
Describe how enterprise users can retrieve data from the Historian	10
Demonstrate how to export data from the Historian. Describe the file formats available.	10
Miscellaneous	
Demonstrate any Historian functions that makes your system unique	20

Alarming	Maximum Score
Standardized Color Code and Priority	
Demonstrate alarms can use a standard color library and level of prioritization	10
Demonstrate any tools to handle significant events (power events) where a large quantity of alarms come in	30
Filtering and Escalation	
Demonstrate the ability to filter alarms based on active alarms, alarm priority and location	10
Demonstrate how alarms can be shelved and disabled	10
Demonstrate how alarms are escalated in the event an alarm is not acknowledged in a certain period of time and/or if an alarm persists for a long duration of time	10
Demonstrate how previous alarms (alarm history) can be viewed for troubleshooting. Demonstrate how alarms from the last year can be retrieved.	10
Demonstrate alarm filtering based on shelved and/or disabled alarms	10
Remote Notification	
Demonstrate configuring an alarm to send a remote notification to staff including SMS, voice call, e-mail	10
Demonstrate customizability of remote notifications	10
Next Action on Active Alarms	
Demonstrate how alarms can be linked to external information such as PDFs to instructor operators on a next course of action	10
Alarm Management	
Demonstrate how an alarm can be shelved, disabled, acknowledged for both a set duration or until the alarm condition is clear	10
Demonstrate how an operator can leave a note related to an alarm	10
Demonstrate how a large amount alarms are managed.	10
Miscellaneous	
Demonstrate any alarm functions that makes your system unique	10
Reporting	**Maximum Score**
Ad-hoc Reporting	
Demonstrate how users can generate ad-hoc reports from Enterprise data	20
Automatic Reporting	
Demonstrate the system's ability to automatically generate reports on a schedule	10
Miscellaneous	
Demonstrate any reporting functions that makes your system unique	10
Other	**Maximum Score**
Cost and Licensing	
Describe cost, licensing structure, ongoing support contracts, etc.	20
Customer support model and availability	10

Appendix A: Cover Sheet

Coos Bay North Bend Water Board
HMI SOFTWARE RFP

This form must be signed by a person authorized to make proposals and enter into contract negotiations on behalf of your company. To be considered for this project, the submittals must be completed in accordance with this RFP and this cover sheet must be attached.

Failure to submit this form will result in your proposal being deemed non-responsive.

Authorized Official (Signature)	Date
Printed Name of Authorized Official	Title of Authorized Official
Company Name	Point of Contact
Address	District, State, Zip
Phone Number	Fax Number
Email Address	Federal Tax ID Number

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