

**REQUEST FOR PROPOSALS
CITY OF PORT ORCHARD
PURCHASE OF ENVIRONMENTAL TIME-SERIES DATA MANAGEMENT SOFTWARE**

Notice is hereby given that sealed proposals will be received for environmental time-series data management software, in accordance with the specifications contained in this Request for Proposals (RFP). Interested parties should submit their proposal to:

City of Port Orchard Clerk's Office
RE: (Vendor Name) Environmental Time-Series Data Management Software
216 Prospect Street
Port Orchard, WA 98366

Proposals will be received until 4:00 pm on December 21, 2018. Proposals will be reviewed and scored on December 24th 2018.

No proposals will be accepted after the above stated time.

The respondent shall bear all costs associated with the preparation and submission of the response to the request for proposal.

Free-of-charge access to the RFP documents and specifications are available for review through the City of Port Orchard's on-line plan room. Please visit www.bxwa.com and click on "Posted Projects", "Goods & Services" and "City of Port Orchard." It is recommended that interested parties "Register" in order to receive automatic e-mail notification of future addenda and to place themselves on the "Self-Registered Bidders List." Respondents that do not register will not be automatically notified of addenda and will need to periodically check the on-line plan room for addenda issued on this RFP. Contact Builder's Exchange of Washington at (425) 258-1303 should you require assistance with access or registration.

If you don't have access to the Web, you can make arrangements to pick up a copy of the RFP documents and specifications at Port Orchard City Hall, 216 Prospect Street, Port Orchard, WA 98366. Please call (360) 876-4991 for more information.

The City reserves the right to reject any or all proposals, to terminate the process at any time, to waive any informalities or irregularities in any proposal, and to take any other such actions that may be deemed in the best interest of the City. Award will be made to a responsive and responsible vendor that is quoting the most advantageous product to fit the City's needs.

The City of Port Orchard in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation subtitle A, Office of the Secretary, Part 21, nondiscrimination in federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all respondents that it will affirmatively insure that in any contract entered into pursuant to this RFP, disadvantaged business enterprises will be afforded full opportunity to submit proposals in response to this RFP and will not be discriminated against on the grounds of race, color or national origin in consideration for an award.

The City of Port Orchard in accordance with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA), commits to nondiscrimination on the basis of disability, in all of its programs and activities. Materials related to this RFP can be made available in an alternate format by emailing the Public Works Department at publicworks@cityofportorchard.us or by calling (360) 876-4991.

Notice is given to all potential respondents that any proposal may be subject to release under the Public Records Act Chapter 42.56 RCW and the City may be required to disclose proposals upon a request. Respondents are advised to mark any records believed to be trade secrets or confidential in nature as "confidential." If records marked as "confidential" are found to be responsive to the request for records, the City may elect to give notice to the respondent of the request so as to allow the respondent to seek a protective order from a Court. Please be advised, however, that any records deemed responsive to a public records request may be released at the sole discretion of, and without notice by, the City.

Questions regarding this request for proposals may be directed to Zack Holt at zholt@cityofportorchard.us.

Published: Port Orchard Independent – December 7, 2018
 Daily Journal of Commerce – December 7, 2018
 City of Port Orchard Website – December 7, 2018

SCOPE:

The City of Port Orchard is soliciting proposals from qualified vendors (hereinafter referred to as the Vendor) to provide environmental time-series data management software in accordance with the specifications contained in this Request for Proposals (RFP). The software is intended for use with data collected from Total Maximum Daily Load (TMDL) monitoring and stream hydrology/water quality monitoring sites. The software will be used for developing stream hydrology ratings, hydrographs and analyzing water quality data. The software is also intended for use in data analysis and to generate reports. Refer to Exhibit A for the Scope of Work.

PROPOSAL REQUIREMENTS

The proposal is to be a maximum of 20 pages duplex and contain the following nine information sections:

1. **Executive Summary:** A brief overview of the proposal, prepared in such a manner as to make it understandable to individuals not familiar with the terminology particular to a project of this type.
2. **Company Background:** Information about the Vendor, including but not limited to:
 - a) Company Headquarters Information
 - b) Complete list of products provided by Vendor
 - c) Company Awards and Merits
 - d) Number of Years in Public Sector Software
 - e) Total number of Clients
 - f) Software evolution and direction
3. **Client References:** A list of at least three (3) locations that are currently using a similar system as requested by this RFP, with entity name, address, contact name, phone number, and brief description of system provided.
4. **Time Series Data Software Summary:** A summary, including a chart or graphic, of the software system being proposed that meets the requirement of the Exhibit A Scope of Work. Please be as thorough as possible on system benefits and existing system modules.
5. **Installation and Training:** A summary of the proposed method for product installation at the City and the proposed schedule for installation and training. Include a list of personnel that will be assigned to the implementation and copies of their resumes.
6. **System Mobility:** A summary of the mobility aspects included with the time-series data management software. Include the connectivity mode (internet or application).
7. **Product and Technical Support:** A summary of the product, customer and technical support and availability that will be provided for the term of the contract. Include all product support that will be provided for the term of the software agreement, such as software updates, patches, and corrections as issued by the software developer.
8. **Price:** Include all product pricing, fees, taxes, and other expenses associated with providing the product and services requested in this RFP. Respondent should provide a breakdown of the pricing in a format such as the one below, or similar:
 - a) Software Cost
 - Provide details of per user or concurrent licenses.
 - b) Installation
 - Include cost of working with City IT to install software and configure with City's existing Server/Portal (City will provide server hardware and OS).
 - Include support cost of assisting with the initial system setup and assisting staff with the development of some initial workflows and reports.
 - Include any costs associated with remote support in configuring workflows, or

indicate whether this is included in an annual support fee.

- Include an option for future on-site end user/administrator training three to twelve (3-12) months after implementation.

c) 2-year Service Annual Cost

d) TOTAL PACKAGE PRICE

9. Addenda: Provide acknowledgement of addenda received, if any.

EVALUATION & SELECTION PROCESS:

Each proposal will be rated, scored, and ranked based on the following criteria. A summary of key considerations the evaluators will consider during the proposal rating process is summarized below.

| Criteria | Weight |
|--------------------------|-----------|
| Price | 25 points |
| Ratings Development Tool | 30 points |
| QA / QC Tools | 20 points |
| Report Generation Tools | 15 points |
| API/IT Integration | 10 points |

1. Price – Consideration includes all aspects of the package proposal price. Delivery/freight cost must be included in the proposal. All purchased items need to be delivered to 216 Prospect Street, Port Orchard, WA 98366. All purchases of materials are subject to Washington State Sales tax of 9% and shall be included in the bid.
2. Ratings Development Tool – The software shall use a graphical tool for rating curve development, and this tool shall be the same tool used by many leading national agencies, including but not limited to:
 - U.S. Geological Survey (USGS) (USA)
 - Water Survey Canada (WSC) (Canada)
 - National Institute of Water and Atmospheric Research (NIWA) (New Zealand).
3. QA / QC Tools – Includes QA/QC tools that allow users to identify errors and issues, log any edits so that they are reversible, and provide a way to validate data.
4. Report Generation Tools – Includes:
 - Provisional Instantaneous Discharge Computation on an hourly basis
 - Finalized Mean Daily Discharge Computations on a monthly basis
 - Stage/Discharge Rating Curve Generation and Manipulation
 - Descriptive statistics on Water Quality and Water Quantity Parameters including:
 - Maximum
 - Minimum
 - Average
 - Visual aids such as graphs and trend lines
 - Intensity analysis
 - Event analysis
5. API/IT Integration – Includes ability to automatically ingest data via Application Programming Interface as well as manual and web service interface.

The City reserves the right to reject any or all proposals and to waive any informality in any proposal.

PRE-SUBMITTAL QUESTIONS:

There will be no pre-proposal conference. Vendor inquiries are to be directed to Zack Holt, Stormwater Program Manager at zholt@cityofportorchard.us. Questions will be accepted until December 19, 2018.

SUBMITTAL:

Two copies of the proposal are due to the City of Port Orchard Clerk's Office prior to 4:00 p.m. on Friday December 21, 2018. Proposals may be hand delivered or mailed to:

City of Port Orchard Clerk's Office
RE: (Vendor Name) Environmental Time-Series Data Management Software
216 Prospect Street
Port Orchard, WA 98366

All proposals should be clearly marked on the outside of the envelope.

Before receiving an award, the successful Vendor will be required to provide the City of Port Orchard copies of their City of Port Orchard business license and Certificates of Insurance.

A committee of individuals to be selected by the City of Port Orchard Public Works Department, will perform evaluation of the qualifications. The qualifications will be scored and ranked based on the selection committee's evaluation. In the event of close scoring, a shortlist interview may be performed. The Vendor with the highest cumulative score will be invited to enter into contract negotiations. If an agreement cannot be reached, the Vendor with the second highest cumulative score may be contacted for negotiations. The City reserves the right to award the contract to the highest ranked Vendor without further discussions.

RFP SCHEDULE:

These dates are estimates and are subject to change by the City:

| Event | Date |
|-----------------------------|-------------|
| Release RFP | 12/07/2018 |
| Questions (if any) Due | 12/19/2018 |
| City Responses to Questions | 12/20/2018 |
| Proposals Due | 12/21/2018 |
| Evaluation of Proposals | 12/24/2018 |
| Vendor Selected | 12/24/2018 |
| Contract Award | 12/26/2018 |

VENDOR'S COSTS

The City shall not be liable for any costs incurred by Vendors in responding to this RFP.

EXHIBIT A
SCOPE OF WORK

SUBMITTAL REQUIREMENTS:

Environmental Time-Series data management software provides a unique set of features for collecting, managing, validating, correcting, analyzing and distributing environmental time-series data. The software must be a server-based application suite that runs with a number of relational database systems and can be connected to several data sources for computing derived data in real-time. Criteria are as follows:

General Criteria

- 1) It is desired that the software be a Commercially Available Off-The-Shelf (COTS) environmental data management solution.
- 2) It is desired that the software be based on a SQL or Oracle compatible database with reliable backup.
- 3) The software should have multi-user functionality, with password protected user accounts that control data access permissions.
- 4) The software should be designed around environmental data concepts, including time-series, field data and measurements, ratings, and real-time data derivation and statistical analysis.
- 5) It is desired that the software be able to manage data based on measurement location, geographic position, time zone, measurement parameter, data type, and engineering units.
- 6) The software should be based on web-friendly technologies for user interface display, data ingestion and data export.
- 7) It is desired that the software preserve all raw "as acquired" data.
- 8) The software shall record all changes to data in a separate corrected data set as a lossless sequential list of transformations that are applied to the (unaltered) raw data in order to derive the modified/corrected result. Any data corrections or transformations shall be capable of being undone by a user with appropriate permissions.

Data Type Criteria

- 9) The software should support data that are time-stamped numerical values. Some exceptions are textual data such as site descriptors, station descriptors, and comments regarding a data record.
- 10) It is desired that the software support a wide range of data types including:
 - i. Water Quality Parameters
 - ii. Hydrometric Parameters
 - a. Rating curves
 - b. Shifts And rating blending

- iii. Meteorological Parameters
- iv. Soil Parameters
- v. Air Quality Parameters
- vi. Biological Parameters
- vii. Metadata

- 11) It is desired that the software implement different mathematical treatments for interpolating and aggregating continuous values, totals, mean (constant interval) values and discrete values.
- 12) The software should support a mechanism to identify missing data (gap tolerance) and prevent interpolation or aggregation across such regions.
- 13) It is desired that the software be able to associate ordinal quality (grade) values with data points (for example 10 = good, 3 = bad).
- 14) The software should be able to associate qualifiers with ranges of data values (e.g. "ice").

Data Input Criteria

- 15) It is desired that the software be able to accept data from a variety of sources.
- 16) The software should support many different electronic formats including:
 - i. Non-Proprietary Comma-Delimited Files or Spreadsheets
 - ii. Measurement Files Generated by Various Field Instrumentation
 - iii. SCADA Systems or Other Data Acquisition Systems
 - iv. Satellite Telemetry Systems
- 17) The software should be able to define and store file format descriptions and then re-use them for future imports.
- 18) It is desired that the software be able to accept electronic data from local and remote clients via webservice connections.
- 19) The software shall be able to automatically ingest data via Application Programming Interface (API).
- 20) It is desired that the software be able to keep up with incoming data rates in excess of several thousand per second.
- 21) The software shall provide a manual data entry interface.
- 22) The software should be able to accept many different forms of attachments including:
 - i. Pictures
 - ii. Videos
 - iii. Scanned Data Sheets
 - iv. PDFs
 - v. Excel Sheets
 - vi. Word Documents
 - vii. Text Files

Quality Assurance/Quality Control Criteria

- 23) It is desired that the software have built-in quality assurance/quality control (QA/QC) tools in a graphical environment that allow users to identify errors and issues, log any edits so that they are reversible, and provide a way to validate these data.
- 24) It is desired that the software allow for manual QA/QC of data, as well as open-ended data corrections that can be applied to new data that are appended to the system.
- 25) The QA/QC editing tools should include:
- i. Correcting Measurement Drift Over Time
 - ii. Applying a Constant Numerical Shift (Offset) on a Portion of the Data
 - iii. Deleting Invalid Data
 - iv. Filling Gaps
 - v. Filling gaps with constant values
 - vi. Identifying and Removing Data Spikes
 - vii. Copy and Pasting Data
 - viii. Freehand Data Correction
 - ix. Applying Corrections for Fouling or Drift Where Different Adjustments are Made for Different Ranges of Value and Where These Adjustments Vary Over Time
- 26) The QA/QC validation tools should include but are not limited to:
- i. Detection of Exceedance of Accepted Thresholds
 - ii. Way to Label Data as Reliable, Unreliable, or Anywhere In Between
 - iii. Automated Validation of the Data Type and Format on Ingest Including:
 - a. Ensuring Date/Time Formats are Consistent
 - b. Ensuring Rounding of Numbers is Consistent
 - c. Ensuring No Text is in Numerical Fields and Vice-Versa
 - iv. Fields for QC Checks, Comments, and Reviewer Information
 - v. Marking Data That Have Been Manually Checked, or Alternatively, Marking Data That Have Not Been Reviewed
- 27) It is desired that the software have features to help ensure no unknown or irreversible changes/damages occur to the data, including:
- i. An Easy to Apply and Reliable Back-Up Procedure
 - ii. Immediate Access to the Original Raw Data Values
 - iii. Automated Logging of Edits, Allowing Easy Tracking of All Changes to the Data
 - iv. The Ability to Query the List of Changes (Change List) Applied to Any Data, Including Name of User, Time of Application and Justification Remark

Data Workflow Criteria

- 28) It is desired that the software allow for the definition of a structured data workflow, where data is transitioned from state to state as it is reviewed, approved and published.
- 29) Each workflow state should enforce rules for access to editing the data that is at that state. (e.g., approved data should be locked for editing).

- 30) It should be possible to assign different users the rights to transition data from workflow state to workflow state (e.g. only senior scientists have permission to do final approval).
- 31) It is desired that the software enforce the restriction that no derived data can be further along in the workflow than any of its source data (e.g. not possible to do a final approval on daily mean values until the source values are approved).

Product/Report Generation

- 32) The software shall be able to generate final products from stored data.
- 33) It is desired that the software be able to automate the generation of these products on a scheduled basis, ranging from hourly to annually.
- 34) It is desired that reports allow users to define custom calculations, custom product/report generation and custom data formatting.
- 35) Some examples of these products/calculations include, but are not limited to:
- i. Provisional Instantaneous Discharge Computation on an Hourly Basis
 - ii. Finalized Mean Daily Discharge Computations on a monthly basis,
 - iii. Stage/Discharge Rating Curve Generation and Manipulation
 - iv. Descriptive Statistics on Water Quality and Water Quantity Parameters Including:
 - a. Max
 - b. Min
 - c. Average
 - v. Visual Aids such as Graphs and Trend lines
 - vi. Intensity analysis
 - vii. Event analysis

Programmatic Interface Criteria

- 36) The software shall support inter-system integrations based on RESTful web-service Application Programming Interfaces (APIs).
- 37) Access to the APIs shall be controlled via account credentials according to standard methods.
- 38) It is desired that the APIs allow data to be brought into the system:
- i. Time-series data
 - ii. Field measurement data
 - iii. Location data
 - iv. System configuration settings
 - v. Time-series configurations
 - vi. Time-series processing settings
 - vii. Time-Series meta Data
- 39) It is desired that the APIs shall allow for the creation of:
- i. New measurement locations
 - ii. New time-series

- iii. New field visits
- iv. Other data types within the system
- v. Time-series processing settings

40) It is desired that the APIs allow for data to be deleted or replaced.

41) It is desired that the APIs be able to retrieve data based on a wide variety of flexible data queries including:

- i. Date Range
- ii. Measurement Parameter
- iii. Measurement Location
- iv. Time-Series, Field Data or Rating Information
- v. All Data or Only Recent Changes (From Previous Query)

42) It is desired that the API give access to all data stored in the system in a form that is easy to incorporate into integration software or reporting engines.

Data Storage, Access, and Security Criteria

43) The software should allow many business divisions to store data on a central database server.

44) It is desired that the software allow access to the data on the central server by various clients via a username/password mechanism. Furthermore, the software shall allow access to the data on the central server via Single Sign On using Microsoft Active Directory or Open ID Connect protocols.

45) The software should allow administrators to:

- i. Assign Users Differing Access/Permissions to the Data
- ii. Rights to Create and Remove Data
- iii. Assign Permissions to Other Users

Rating Curve Development Tool Requirements

46) The software shall use a graphical tool for rating curve development, and this tool shall be the same tool used by many leading national agencies, including but not limited to:

- i. U.S. Geological Survey (USGS) (USA)
- ii. Water Survey Canada (WSC) (Canada)
- iii. National Institute of Water and Atmospheric Research (NIWA) (New Zealand)

Technical Support & Software Upgrade Criteria

47) It is desired that the software vendor include external technical support for the first year after initial purchase, at no additional charge.

48) It is desired that technical support provide for troubleshooting over the phone, web or via remote connection.

49) It is desired that technical support be available during normal business hours for day-to-day operations.

50) It is desired that the software vendor include regular updates to the software (roughly quarterly), at no additional charge. These updates will include bug fixes as well as new features and functionality (driven by direct customer input).

Training

Training is requested to be included by the Vendor for City staff. Training should emulate a real-world hydrometric workflow using the data management system and a hypothetical water level monitoring station. The course will cover manual processes for loading, inspecting and correcting data through to the use of sophisticated automated processes. The course should cover all of the quality management processes required to produce a full water year of stage and discharge records, from the initial establishment of a station to final report generation.