



City of Tacoma, WA

**TACOMA POWER
UTILITY TECHNOLOGY SERVICES**

REQUEST FOR INFORMATION

NATURAL RESOURCES OPERATIONAL ANALYTICS

SPECIFICATION NO. PS16-0021F





**City of Tacoma
Tacoma Power / Utility Technology Services**

**REQUEST FOR INFORMATION
PS16-0021F
Natural Resources Operational Analytics**

Submittal Deadline: 11:00 a.m., Pacific Time, Tuesday, February 2, 2016

Submittal Delivery: Sealed submittals will be received and time stamped at this location only:

City of Tacoma Procurement and Payables Division
Tacoma Public Utilities - Administration Building North, Main Floor
3628 South 35th Street, Tacoma, WA 98409

Submittal Opening: Sealed submittals in response to a RFB will be opened by a Purchasing representative and read aloud during a public bid opening held in Conference Room M-1, located on the main floor in the same building. Submittals in response to an RFP or RFQ are recorded as received but are not typically opened and read aloud. After 1:00 p.m. the day of bid opening, the names of vendors submitting proposals are posted to the website for public viewing.

Solicitation Documents: An electronic copy of the complete solicitation documents may be viewed and obtained by accessing the City of Tacoma Purchasing website at www.TacomaPurchasing.org.

- [Register for the Bid Holders List](#) to receive notices of addenda, questions and answers and related updates.
- Click here to see a [list of vendors registered for this solicitation](#).

Pre-Proposal Meeting: A pre-proposal meeting will not be held..

Project Scope: On behalf of Tacoma Power Generation – Natural Resources, Tacoma Power is issuing this Request for Information (RFI) to obtain information and general description of data management products, and determine the capabilities and interest of solutions providers available in today's market, as they relate to Power Generation – Natural Resource's needs for an operational big data analytics platform to collect, aggregate, correlate, and orchestrate reporting across various operational data silos across the organization into meaningful information and knowledge for fish hatchery operations across the 4 hydroelectric projects in the system..

Estimate: N/A

Additional Information: Requests for information regarding the specifications may be obtained by contacting Joe Parris, Senior Buyer, by email to jparris@cityoftacoma.org.

Protest Policy: City of Tacoma protest policy, located at www.tacomapurchasing.org, specifies procedures for protests submitted prior to and after submittal deadline.




Meeting sites are accessible to persons with disabilities. Reasonable accommodations for persons with disabilities can be arranged with 48 hours advance notice by calling 253-502-8468.

SUBMITTAL CHECK LIST

This checklist identifies items to be included with your submittal.

Submittals must be received by the City of Tacoma Purchasing Division by the date and time specified in the Request for Information page.

| | |
|---|---|
| The following items make up your submittal package: |  |
| One original, one copy of your complete submittal. | |
| The information being requested in Section 2, Submittal Information | |
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| | |

NATURAL RESOURCES (NR) OPERATIONAL BIG DATA ANALYTICS

SECTION 1 – INTRODUCTION / GENERAL INFORMATION

1.01 INTRODUCTION

Tacoma Power, a division of Tacoma Public Utilities (TPU), provides electric service to the cities of Tacoma, Fircrest, University Place, Fife, as well as parts of Steilacoom, Lakewood, and unincorporated Pierce County in Washington State.

Tacoma Power is organized into six business units:

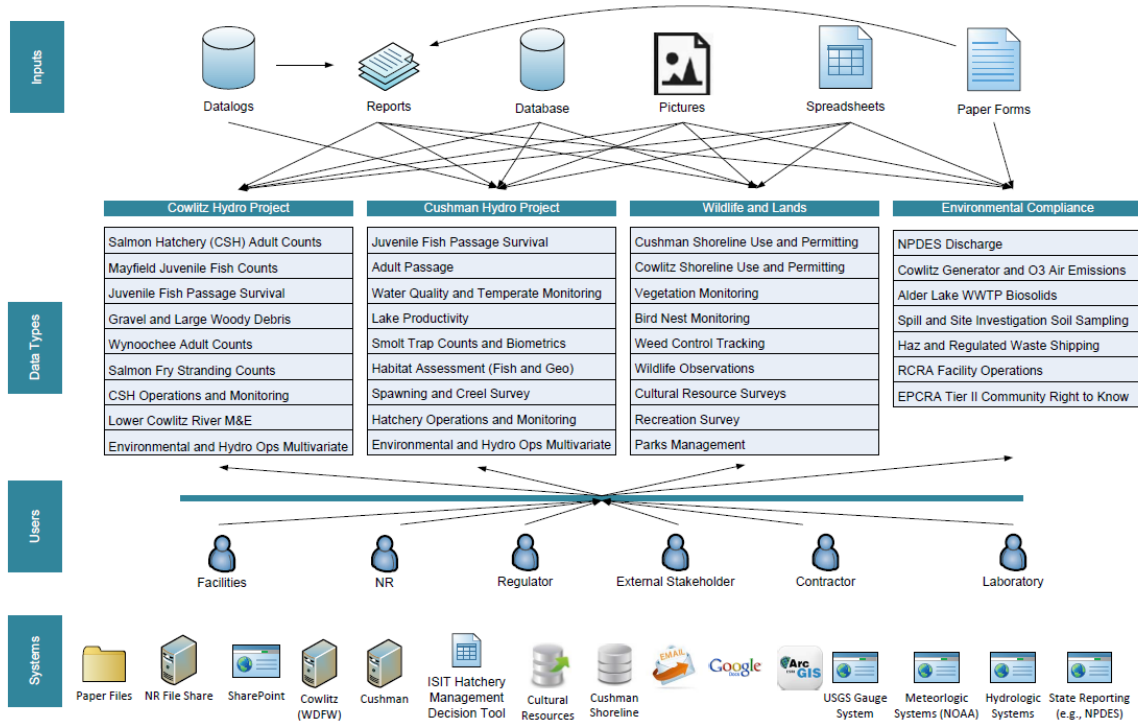
- A. Generation operates and maintains four hydroelectric generating projects and the associated recreational facilities, fish hatcheries and other project lands.
- B. Power Management plans for and manages the power supply portfolio, conducts integrated resource planning, markets bulk and ancillary power supply services, and schedules Tacoma Power-owned generation and contract power supplies, and performs power trading. The unit also plans and delivers energy efficiency services, including conservation and technical assistance.
- C. Transmission & Distribution plans, constructs, operates and maintains the overhead and underground transmission and distribution systems including substations, the underground network, system control and data acquisition systems (SCADA), and revenue metering facilities.
- D. Click! Network plans, constructs, operates and maintains the hybrid fiber-coaxial telecommunications network that supports the operation of Tacoma Power's electrical transmission and distribution systems, provides retail cable TV and wholesale high-speed Internet services to residential and business customers and data transport services to business customers.
- E. Rates, Planning, and Analysis plans for and manages the retail rate process, load and revenue forecasts, financial planning, analysis and modeling, budget strategies, the capital program, risk management, business case analysis, and coordination of business improvement processes.
- F. Utility Technology Services (UTS) is responsible for and maintains all affairs associated with Tacoma Power's compliance with NERC Reliability Standards, manages its Internal Reliability and Compliance program, including the Project Management Office that establishes and leads the utilities' IS project governance process, and implements project portfolio management tools. UTS also plans, develops, deploys and maintains communication networks, operational systems and related equipment and infrastructure in support of the operational efficiency and delivery of utility services to our customers.

Additional information about Tacoma Power is available at: <http://www.mytpu.org/>

1.02 PURPOSE OF THIS REQUEST FOR INFORMATION

On behalf of Tacoma Power Generation – Natural Resources, Tacoma Power is issuing this Request for Information (RFI) to obtain information and general description of data management products, and determine the capabilities and interest of solutions providers available in today’s market, as they relate to Power Generation – Natural Resource’s needs for an operational big data analytics platform to collect, aggregate, correlate, and orchestrate reporting across various operational data silos across the organization into meaningful information and knowledge for fish hatchery operations across the 4 hydroelectric projects in the system.

The objective of operational big data analytics is to extract unique insights by effectively discovering, and exploiting, correlations between seemingly unrelated variables. Sources of data include unstructured datasets (time series, spreadsheets, external agency feeds, etc.) and structured data (operational databases, asset databases, locations databases, etc.), multiple systems of record, a variety of business data elements, and a landscape of users as depicted in the following diagram which a big data analytics solution is needed to orchestrate.



A modern big data approach to an operational analytics platform supports OT (Operations Technology)-enabled analytic content development. Such a solution should consist of a self-contained architecture that enables engineers and operations analyst users to autonomously execute analytic workflows from data access, integration and correlation to interactive analysis. By contrast, traditional BI platforms are designed to support modular development of IT-produced analytic content, and specialized tools and skills and significant upfront data modeling, coupled with a predefined metadata layer, are required to access their analytic capabilities. The table below contrasts Tacoma Power’s understanding between traditional BI (Business Intelligence) and modern big data approaches to operational analytics.

| Analytic Workflow Component | Traditional BI Approach | Modern Big Data Operational Analytics Approach |
|----------------------------------|--|---|
| Data source | Upfront dimensional modeling required (IT-built star schemas) | Upfront modeling not required, structured and unstructured (flat files/flat tables) |
| Data integration and correlation | IT-produced | OT-enabled, integration through configuration |
| Content authoring | Primarily IT staff, but also some power users | Engineers and operational systems analyst users |
| Analysis and Visualization | Predefined, ad hoc reporting, based on predefined model | Free-form exploration, export to engineering analysis (r language, Matlab, etc.) |
| Insight delivery | Distribution and notifications via scheduled reports or portal | Sharing and collaboration, storytelling, open APIs, event driven |

A. Tacoma Power is interested in the following subjects and minimum expectations for an operational big data analytics solution:

1. Data Collection and Aggregation

a. Ability to collect and aggregate disparate sources of structured and unstructured data via standard technologies and extensible tools leveraging an existing integration middleware platform.

2. Analytics & Reporting

a. Ability for engineering staff to perform queries, correlate data sources, identify trends, and perform sensitivity analysis of aggregated operational data.
b. Ability to generate reports via standard configuration and wizards based on current/validated data and searchable by the broader organization.
c. Ability to export and/or integrate with statistical modeling solutions including r language, Matlab, etc. Offers analytical functions such as time series analysis, clustering, estimation, classification, affinity analysis, attribute importance, scenario modeling and goal seeking.

3. Advanced Visualization

a. Capabilities in advanced data visualization and dynamic manipulation of reports using intuitive tools and methods. Ability to generate charts including time-series, scatter, pie, bar, stacked bar, line, high/low, radar, area histogram and switch between chart types. Also the ability to visualize correlations or clusters in a data set, display decision tree, etc.

4. Event Alerting & Scheduling

a. Ability deliver of alert to users based on defining thresholds in a report where you would want to be notified if a specific condition exists and the options that exist to centrally or personally define such conditions and alert notifications.
b. Ability to schedule reports and dashboards to be distributed based on date/time and events that have occurred.

B. Tacoma Power's interests in maintenance services for software include:

a. Assignment of a dedicated account manager
b. Download facility for software and documentation

- c. Online user forum, technical support and trouble ticket review
 - d. 9x5 on-call technical support (8am-5pm weekdays)
 - e. Critical defect repairs within a set number of business days
 - f. Published escalation procedures
 - g. Regular version releases of all software components
- C. Tacoma Power is interested in consulting services to perform the solution implementation and system integration functions required to meet the objectives. Activities include but are not limited to:
- a. Development of functional requirements for NR/Generation operations intelligence and reporting
 - b. Development of technical specifications for integration into existing architecture
 - c. Design of integration and reporting processes
 - d. Implementation functionality of software products recommended in the solution
 - e. Provide user training
 - f. Provide post-implementation consulting support, as needed, to enable the solution to scale with additional data sources and views

1.03 INQUIRIES

Any questions regarding this RFI should be in writing and directed to Joe Parris, Purchasing Division, via email to jparris@cityoftacoma.org.

SECTION 2 – SUBMITTAL INFORMATION

2.01 FORMAT AND PRESENTATION

Organization of your submittal should follow the sequence of contents below so that essential information can be located easily during review.

2.02 CONTENT TO BE SUBMITTED

A. Company Information

1. Company name
2. Main office address
3. Primary contact name / telephone number / e-mail address
4. Additional contacts for further technical inquiries (name / telephone number / e-mail address), if different
5. Internet address

B. Products and Services Provided

1. Describe the products and services provided by your firm with respect to the subject areas listed in Section 1.02 (above). Please reference the corresponding section number, as appropriate.
2. If reference is made to supporting literature or documentation included with your submittal, direct the reader using specific reference to the document that address the topic, including document name, section and page number.

C. Pricing Information

1. Please provide as much general information as possible about your firm's pricing.

Note: Information provided in response to this RFI will be considered "General Industry Estimates" and **WILL NOT** be used for the selection of vendors or to limit participation in any potential future Request for Bids or Request for Proposals. Pricing information is requested only to assist in the evaluation process and to develop general budgetary guidelines.

SECTION 3 – PROPRIETARY OR CONFIDENTIAL DESIGN INFORMATION

Washington State Public Disclosure Act (RCW 42.56 et seq.) requires public agencies in Washington to promptly make public records available for inspection and copying unless they fall within the specified exemptions contained in the Act, or are otherwise privileged. Documents submitted under this Specification shall be considered public records and, with limited exceptions, will be made available for inspection and copying by the public.

Information that is confidential or proprietary must be clearly marked. Further, an index must be provided indicating the affected page number(s) and location(s) of all such identified material. Information not included in said index will not be reviewed for confidentiality or as proprietary before release.

SECTION 4 – DISCLAIMER

Please note that this Request for Information is not a Request for Bids (RFB) or a Request for Proposals (RFP), and there is no guarantee that either a RFB or RFP will be issued.

A Respondent's decision to respond, or not to respond, to this RFI will NOT be a factor in evaluating any later RFB or RFP.

While the intent of this RFI is to help identify vendors who meet various requirements for a competitive solicitation, there is no guarantee that any specific information presented by any Respondent will ultimately be included in any future solicitation issued by the City.

Each Respondent shall bear all expenses incurred by the preparation and presentation of its RFI response. The City will therefore reject any claim made against them in this matter, regardless of the results of the subsequent processes, if any.