

# RIVERSIDE PUBLIC UTILITIES

## Board Memorandum

**BOARD OF PUBLIC UTILITIES**

**DATE:** MAY 9, 2016

**ITEM NO:** 8

File ID – 16-1237 – Discussion

**SUBJECT: OPERATIONAL DATA MANAGEMENT SYSTEM PROJECT; MODIFY SCOPE OF PROJECT, APPROVE ENTERPRISE SOFTWARE AGREEMENT WITH OSISOFT, AND APPROVE PROFESSIONAL SERVICES AGREEMENT WITH INDUSTRIAL EVOLUTION – IN THE AMOUNT OF \$3,557,000**

**ISSUES:**

The items for Board of Public Utilities consideration are: 1) approval of Enterprise Agreement with OSISOFT, LLC for the installation of PI software and services; 2) approval of professional services agreement with Industrial Evolution; and 3) approval of Work Order No. 1619634.

**RECOMMENDATIONS:**

That the Board of Public Utilities:

1. Approve the Enterprise Agreement with OSISOFT, LLC and authorize the City Manager or his designee to execute the agreement in the amount of \$2,079,832;
2. Approve the Professional Services Agreement with Industrial Evolution and authorize the City Manager or his designee to execute the agreement in the amount of \$698,000;
3. Approve Work Order No. 1619634 in the amount of \$3,557,000; and
4. Reduce Work Order No. 1424073 from \$4,430,427 to \$2,530,400.

**BACKGROUND:**

All divisions within Riverside Public Utilities (RPU) rely on data to make operational and fiscal decisions. Thousands of data points are collected daily from field equipment and monitoring devices, electric and water meters, customer interactions and financial transactions. The data is stored in various formats, such as spreadsheets, Microsoft Access databases, and a variety of systems (such as enQuesta Customer Information System) that are not integrated with one another, which makes generating reports and analyzing data cumbersome and inefficient.

The Operational Data Management System (ODMS) is foundational for Utility 2.0, as it will serve as a “data hub”, or central repository, to collect, analyze and make data-driven decisions from all systems that collect and store data throughout the utility. ODMS will be the backbone of future operational technologies such as distribution automation, outage management system, smart metering, meter data management system, and asset management. It integrates previously nonintegrated data and transforms it into meaningful information that can be displayed and consumed through visual tools such as dashboards and reports. In addition to providing readily available and easy to consume information, ODMS provides an enhanced analytics platform that RPU can leverage to improve operational performance (see Figure 1).

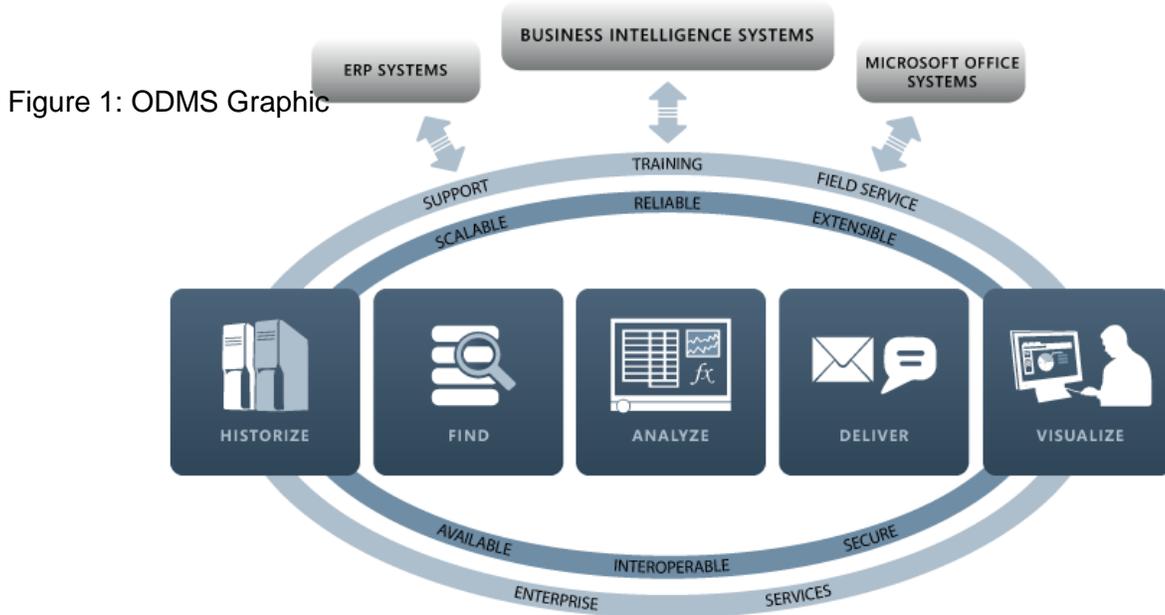


Figure 1: ODMS Graphic

Some of the benefits of the ODMS include improved performance and production via increased visibility, better enterprise-wide decision making with real-time key performance indicator (KPI) information, better alignment of operations with overall business goals, and increased regulatory and environmental reporting and compliance. ODMS will also reduce risks and costs of potential equipment failures, optimize operational processes, and improve asset maintenance and field workforce management. Customers will benefit from reduced operating costs and improved service quality, reliability and resiliency.

#### *Development of the ODMS project*

In 2011, the Board of Public Utilities (Board) approved the ODMS project, beginning with a Professional Services Agreement (PSA) with Westin Engineering, Inc. (Westin) for an amount not-to-exceed \$271,260. The agreement allowed RPU, with the support of Westin, to start the process of developing and implementing a data management system to integrate water quality, operations and maintenance information into one database. The scope of work included the consultant developing a database management plan, assisting in the procurement of software, and assisting with oversight of the software implementation.

On December 7, 2012, the Board approved the first amendment to the PSA with Westin in the amount of \$90,709. The amendment increased the total Westin contract to \$361,969 and the scope expanded to include development of an asset structure hierarchy, a critical component in establishing a data management system.

On June 20, 2014, the Board approved Work Order No. 1424073 for the implementation of the Operations Data Management System; the second amendment in the amount of \$2,400,000 to the Professional Services Agreement with Westin Engineering, Inc. for consulting services; and a purchase order with OSISOFT, LLC in the amount of \$480,427.50 for procurement of the selected ODMS, "PI" system. The scope of work included entering water asset data in the existing Oracle Utilities Work and Asset Management System (UWAM) and utilizing the UWAM system for work order management to track costs to specific assets.

In early 2015, RPU completed the Strategic Technology Plan, which outlines a plan to move toward "Utility 2.0," with strategic investments in new operational technologies. The future increase in

operational technologies will lead to an increase in data collection, and RPU needs to be prepared to collect, analyze and report on that data to make solid data-driven decisions. To support today's needs and prepare for the increased needs of tomorrow, the ODMS project was re-evaluated and staff recommends a change in project scope to support current and future operational technology implementations.

The original agreements with OSIsoft and Westin were recommended to the Board of Public Utilities following a competitive procurement process through the City's standard process as outlined in the Administrative Manual. Staff's current recommendations build on those original procurement processes.

#### *Expansion of the ODMS Project*

Although the work and testing that has been completed thus far is beneficial, it was limited to collecting data from only the SCADA and UWAM systems. The ODMS system, PI, has proven viable through this testing process, and the scope now needs to be expanded to support the future expansion and include data from all systems. The Operational Technology Office (OTO), formed at the recommendation of the Strategic Technology Plan, will now oversee the project management of the ODMS project. The project will be restructured and divided into two projects. Much of the work completed thus far has been focused on asset management data in the UWAM system. That will now become a separate project, called the Water Asset Management System (AMS) Project. Westin will continue to support this effort under the existing PSA.

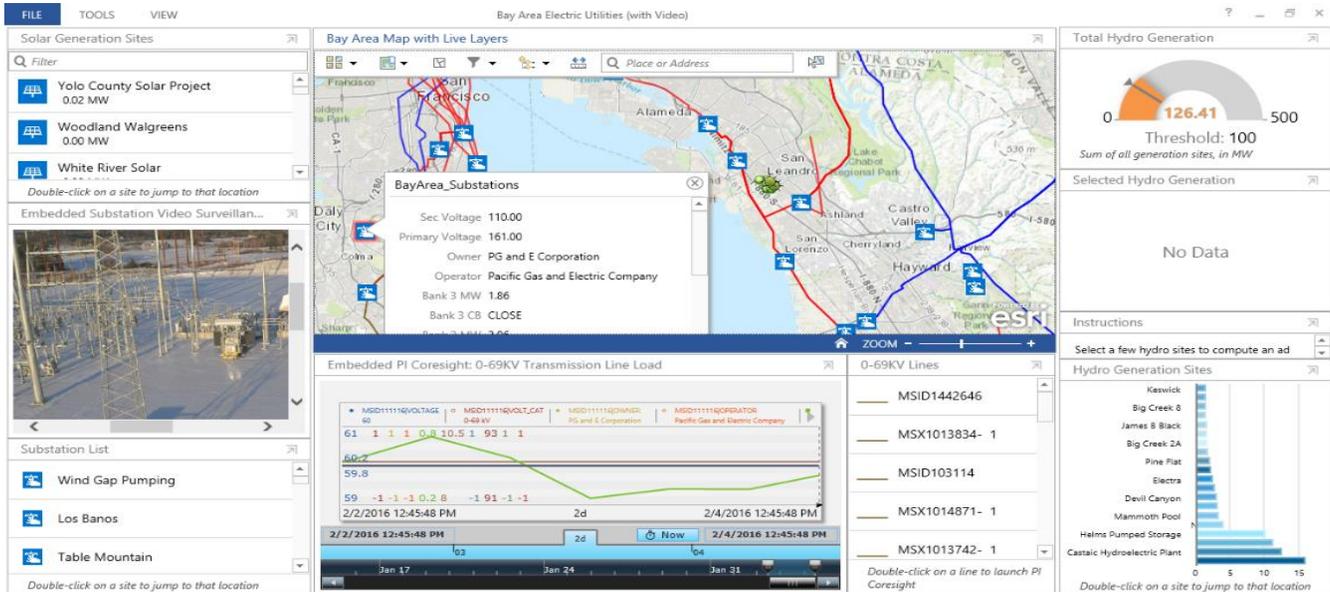
#### *OSIsoft, LLC Enterprise Agreement*

A separate project will be formed, called the Operational Data Management System Project, and will be expanded to include the needs of all RPU divisions - Water, Electric, Marketing, Finance, and Power Resources. It will include the collection of data from not only Water SCADA and UWAM, but through an enterprise agreement with OSIsoft, LLC, RPU has the ability to integrate an unlimited number of datasets with 10 initial data sets planned in year 1. This will allow for cohesive collection of data to conduct extensive analysis on multiple data sets. The OSIsoft, LLC Enterprise Program Agreement (Attachment 1) is for a 5 year term with an initial cost of \$2,079,832.

OSIsoft, LLC is a leader in the data management field and is utilized by many local utilities including but not limited to California Independent System Operator, San Diego Gas & Electric, and Sacramento Municipal Utility District. Public Service Electric and Gas Company reported saving over \$84 million through the use of PI for their condition-based monitoring, enabling the utility to reduce asset failures. Similarly, RPU plans to monitor and track return on investment through similar measures. For example, RPU can prevent catastrophic assets failures through regular condition-based monitoring as staff will be able to see asset temperature, pressure and asset failure trends.

In addition to improved asset monitoring, one of the key deliverables of the PI system will be dashboards (figure 2) that provide real-time information to staff, management and executives for data-driven decision-making. The enterprise agreement with OSIsoft is five (5) years and requires an annual licensing fee of approximately \$350,000 that will be included in future fiscal operating budgets.

Figure 2: Example Dashboard



### PI System Enterprise Support Services

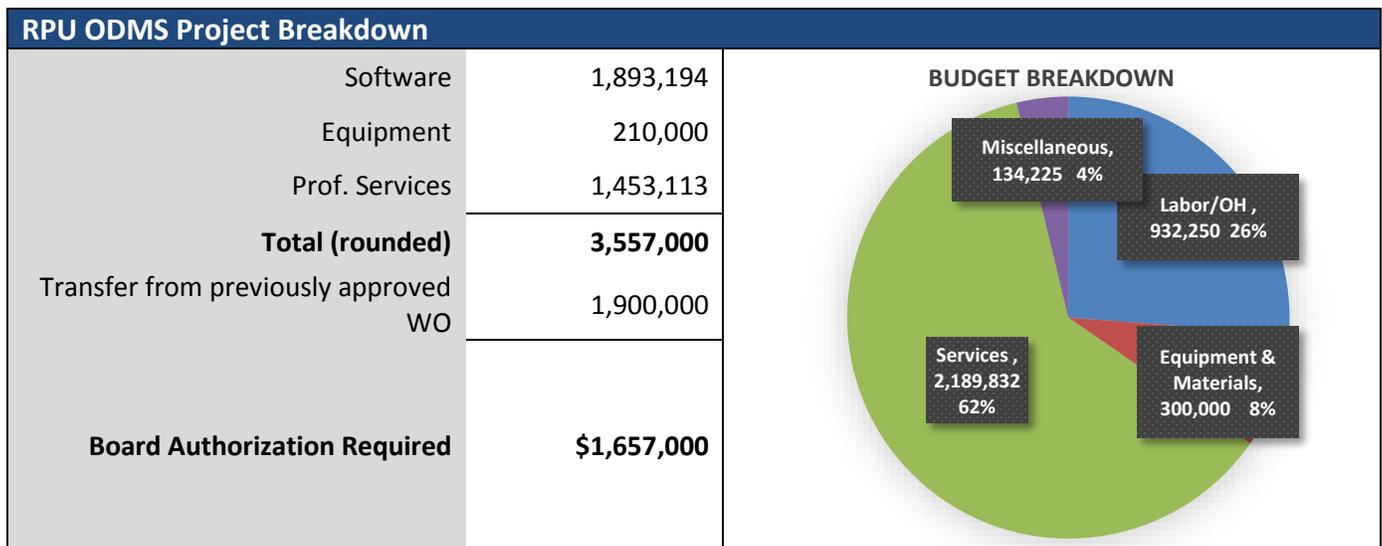
RPU has determined that additional expertise is needed to ensure a successful implementation of an ODMS, and is proposing that resources be procured through a Professional Services Contract with Industrial Evolution (Attachment 2). Industrial Evolution is a recommended business partner of OSIsoft, and has been evaluated by staff through reference checks with other public agencies. Staff recommends a sole-source procurement in the amount of \$698,000 for Industrial Evolution and the Purchasing Services Manager concurs with this procurement. The professional services being procured through Industrial Evolution includes three (3) full-time persons that will serve as extension of staff and will support system integration, data migration, and the development of dashboards and reports. Long-term operational support of the PI system requires two FTE's that will be filled through current vacancies.

### Project Funding

The total previously approved project funds on work order 1424073 is \$4,430,427. Total project expenditure as of March 2, 2016 is \$2,042,400, leaving a Work Order balance of \$2,388,027. Of the Work Order balance, \$488,000 is needed to complete the water asset management project and therefore will remain on Work Order No. 1424073. Approval is requested to revise the scope of Work Order 1424073 to include the work to date and complete the water asset management project; reducing the amount to \$2,530,400 to cover expenses to date plus the funds needed to complete the water asset management project and use the unencumbered balance of \$1,900,000 to partially fund Work Order No. 1619634, the new work order for the expanded ODMS project. The balance of the project funding is available in current and proposed capital and operating water and electric division budgets as detailed in the Fiscal Impact section of this report.

Category	Initial Budget	Spend to Date (3/2/2016)	Est. to Complete	Delta
OSI Soft PO (Software and Support)	\$480,427	\$452,927	\$0	\$27,500
Westin PO (Integration)	\$2,400,000	\$1,292,350	\$270,000	\$837,650
RPU Staff Support	\$850,000	\$169,626	\$95,000	\$585,374
City IT Support	\$600,000	\$82,209	\$85,000	\$432,791
Hardware (Servers)	\$100,000	\$45,288	\$38,000	\$16,712
<b>TOTAL PROJECT (as of 3/2/16):</b>	<b>\$4,430,427</b>	<b>\$2,042,400</b>	<b>\$488,000</b>	<b>\$1,900,000</b>
<b>TOTAL PROJECTED PROJECT SPEND (TO COMPLETE WATER AMS PROJECT):</b>			<b>\$2,530,400</b>	
<b>REMAINING BOARD APPROVED:</b>			<b>\$1,900,000</b>	

The project budget for the new ODMS project is \$3,557,000 and includes the costs of the five (5) year agreement with OSIsoft and phase I costs for the ODMS project, which includes professional services, software and equipment. Ongoing costs to be budgeted in future fiscal years include an annual licensing cost for the PI system of \$346,638.



**FISCAL IMPACT:**

The total cost of the project is \$3,557,000 with \$2,312,000 available in Public Utilities’ Energy Delivery Account No. 6130000-470822 and \$345,000 available in Public Utilities’ Water Account No. 6230000-470822. The remaining \$900,000 is included in fiscal year 2016/2017 budget in Public Utilities Water Account No. 6230000-470818 approved by Board of Public Utilities on March 14, 2016 and pending City Council approval.

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 Approved by: John A. Russo, City Manager  
 Approved as to form: Gary G. Geuss, City Attorney

Certifies availability of funds: Laura Chavez-Nomura, Public Utilities Assistant General Manager/Finance

- Attachments:
1. Enterprise Agreement – OSIsoft, LLC
  2. Professional Services Agreement – Industrial Evolution
  3. Presentation