



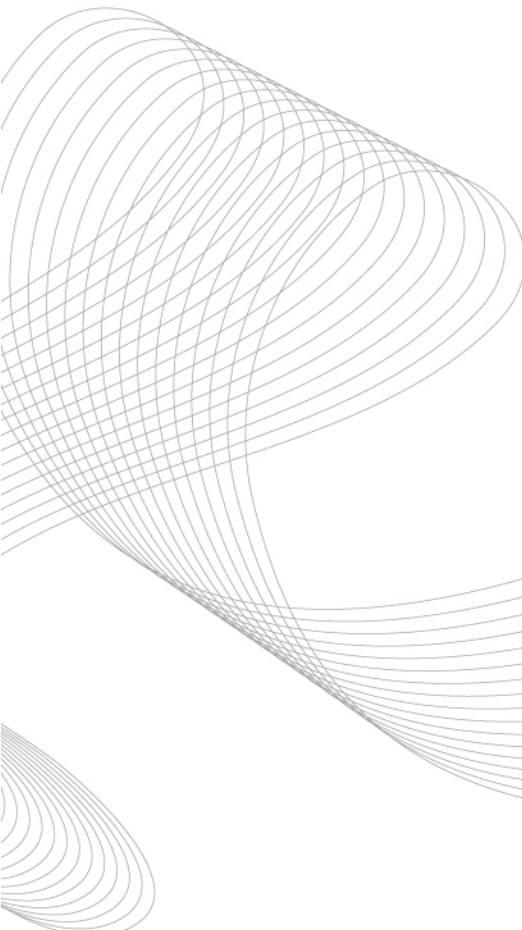
MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Simpson, Helgeson, Manning, Mital and Brown
FROM: Sue Fahey, CFO; Susan Eicher, Accounting and Treasury Supervisor
DATE: September 23, 2016
SUBJECT: 2015 Audit Management Letter Update
OBJECTIVE: Information Only

As part of the annual process, attached is the end of year status report on the comments from 2015 External Audit Management Letter.



Communication to Those Charged with
Governance and Internal Control Related Matters

Eugene Water & Electric Board

December 31, 2015

MOSS-ADAMS_{LLP}

Certified Public Accountants | Business Consultants

COMMUNICATION TO THOSE CHARGED WITH GOVERNANCE AND INTERNAL CONTROL RELATED MATTERS

To the Board of Commissioners
Eugene Water & Electric Board

Dear Commissioners:

We have audited the financial statements of Eugene Water & Electric Board (EWEB or the Board) as of and for the year ended December 31, 2015 and have issued our report thereon dated March 4, 2016. Professional standards require that we provide you with the following information related to our audit.

OUR RESPONSIBILITY UNDER AUDITING STANDARDS GENERALLY ACCEPTED IN THE UNITED STATES OF AMERICA

As stated in our engagement letter dated February 2, 2016, our responsibility, as described by professional standards, is to form and express an opinion about whether the financial statements prepared by management with your oversight are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles. Our audit of the financial statements does not relieve you or management of your responsibilities.

Our responsibility is to plan and perform the audit in accordance with generally accepted auditing standards and to design the audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control over financial reporting. Accordingly, we considered the Board's internal control solely for the purposes of determining our audit procedures and not to provide assurance concerning such internal control.

We are also responsible for communicating significant matters related to the financial statement audit that, in our professional judgment, are relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

Planned Scope and Timing of the Audit

We performed the audit according to the planned scope and timing previously communicated to you in our planning meeting on December 1, 2015.



Significant Accounting Policies

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Board are described in Note 1 to the financial statements. The Board adopted the following new accounting pronouncement in the current year:

Effective July 1, 2014, the Board adopted GASB Statement No. 68, *Accounting and Financial Reporting for Pensions* as well as GASB Statement No. 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date – an Amendment of GASB Statement No. 68*. GASB 68 provides guidance for accounting for net pension liabilities, including definition of balances to be included in deferred inflows and deferred outflows of resources. Previous standards defined pension liabilities in terms of the Annually Required Contribution. Statement No. 68 defines the net pension liability as the portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service, net of the pension plan's fiduciary net position. Statement No. 68 includes recognition of deferred inflows and outflows of resources associated with the difference between projected and actual earnings on pension plan investments. These differences are to be recognized in pension expense using a systematic and rational method over a closed five-year period. The implementation of Statement No. 68 resulted in an adjustment to the net pension asset / liability and the recording of deferred inflows and outflows for the two years presented. The Board has elected to apply regulatory accounting and defer the non-cash portion of pension expense consistent with rate-making activities.

No other new accounting policies were adopted and there were no changes in the application of existing policies during fiscal year 2015. We noted no transactions entered into by the Board during the year for which there is a lack of authoritative guidance or consensus. There are no significant transactions that have been recognized in the financial statements in a different period than when the transaction occurred.

Accounting Estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most significant estimates affecting the financial statements are as follows:

Unbilled Revenue – Unbilled revenue is a measure of revenue earned through the end of the reporting period that has yet to be billed. This generally represents accounts with billing cycles that start in the reporting year and end in the subsequent year. We have evaluated the key factors and assumptions used to develop unbilled revenue in determining that it is reasonable in relation to the financial statements taken as a whole.



Allowance for Doubtful Accounts – This represents an estimate of the amount of accounts receivable that will not be collected. We have evaluated the key factors and assumptions used to develop the allowance in determining that it is reasonable in relation to the financial statements taken as a whole.

Recovery Periods for the Cost of Plant – This represents the depreciation of plant assets. Management's estimate of the recovery periods for the cost of plant is based on regulatory-prescribed depreciation recovery periods. We have evaluated the key factors and assumptions used to develop the recovery periods in determining that they are reasonable in relation to the financial statements taken as a whole.

Other Post-employment Benefit Obligations – This represents the amount of annual expense recognized for post-employment benefits. The amount is actuarially determined, with management input. No liability is recognized in EWEB's financial statements because the annual required contribution, as actuarially determined, is transferred to an external trust. We have evaluated the key factors and assumptions used to develop the annual expense in determining that it is reasonable in relation to the financial statements taken as a whole.

Mark-to-Market Adjustment – Certain derivative instruments are marked to market at year end. However, the impact to the statement of revenues, expenses, and changes in net position is deferred in accordance with GAAP. We have evaluated the key factors and assumptions used to develop year-end amounts and have determined that they are reasonable in relation to the financial statements taken as a whole.

Pension Asset (Liability) and Related Pension Expense – This represents the amount of annual expense recognized for pensions and the related pension asset or liability. The amount is actuarially determined, with OPERS management input. We have evaluated the key factors and assumptions used to develop the annual expense in determining that it is reasonable in relation to the financial statements taken as a whole.

Financial Statement Disclosures

The disclosures in the financial statements are consistent, clear, and understandable. Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. Significant disclosures include: Note 2 – Power Risk Management, Note 17 – Commitments and Contingencies and Note 14 – Retirement Benefits.



Audit Adjustments/Passed Adjustments

Audit Adjustments – For purposes of this letter, professional standards define an audit adjustment as a proposed correction of the financial statements made subsequent to the start of audit final fieldwork. An audit adjustment may or may not indicate matters that could have a significant effect on the Board's financial reporting process (that is, cause future financial statements to be materially misstated).

No audit adjustments were noted on the electric or water systems in the current year.

Passed Adjustments – Passed adjustments are those entries found during the course of the audit that management has decided to not post to the financial statements of the Board. It has been concluded by management, and agreed upon by Moss Adams, that the adjustments are immaterial to the financial statements as a whole.

No passed adjustments were noted on the electric or water systems in the current year.

Significant Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated March 4, 2016.

Consultation with Other Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Board's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Independence

Moss Adams is independent in appearance and fact with respect to Eugene Water & Electric Board.



COMMUNICATION OF INTERNAL CONTROL RELATED MATTERS

In planning and performing our audit of the financial statements of EWEB as of and for the year ended December 31, 2015, in accordance with auditing standards generally accepted in the United States of America, we considered the Board's internal control over financial reporting (internal control) as a basis for designing our auditing procedures for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control. Accordingly, we do not express an opinion on the effectiveness of the Board's internal control.

Our consideration of internal control was for the limited purpose described in the first paragraph and was not designed to identify all deficiencies in internal control that might be material weaknesses and therefore, material weaknesses may exist that were not identified. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis.

In addition to the required communications, we have identified the following matters for your consideration. Our recommendations are based on observations and testing during the course of our audit. These recommendations should be evaluated by management and the Commissioners for implementation and EWEB should conduct a cost benefit analysis including consideration of the risks for the recommended action.

Other Matters

Overhead rate calculation and application

We noted that the WAM system does not currently have the capability to automatically allocate and apply overhead to work orders each month. Instead, the plant accountant exports the work order activity each month and performs a manual calculation outside of WAM to apply overhead to each work order. The updated spreadsheet with the overhead allocation is then re-uploaded into WAM to ensure the overhead adjustments are properly reflected on each work order. We also noted that there is no detailed review of this calculation to ensure that the correct overhead rate was applied and that the allocation was performed completely and accurately. We recommend that if management is not able to add functionality to the WAM system to allow for this calculation to be done automatically, that a detailed review of the manual calculation be completed on a monthly basis by someone other than the plant accountant.

Management response – Susan Eicher, General Accounting and Treasury Supervisor

Full automation of the overhead process requires enhancements from Oracle. Until enhancements in overhead functionality are available, the process of applying overhead will be automated as much as is possible using standard reporting and querying tools. Additionally, there will be cross training for this function during 2016 that will allow for one person to prepare the entry and another to review.

2016 Update -Management response – Susan Eicher, General Accounting and Treasury Supervisor

Automation of overhead application processes that don't require the enhancement from Oracle have been completed, and cross training of staff is in process.

Conservation loan receivable reconciliation

During the process of auditing conservation loans, we noted that the detailed loan reconciliation to the general ledger for 2015 was only performed on an annual basis. This reconciliation is from the CIS to the general ledger only, and no reconciliation of the detailed loan disbursements and repayments received is maintained within the department responsible for approving the loans. As a best practice, we recommend that loan detail of disbursements and repayments received be maintained and reconciled to the general ledger on a monthly basis by the personnel responsible for maintaining the conservation loan system so that all errors may be reconciled in a timely manner. Also, to strengthen segregation of duties, we would recommend that loans be entered into the system by personnel who are not responsible for approval or processing.

Management response – Mark Freeman, Energy Management & Customer Service Manager

The reconciliation process used to be maintained by EMS staff. The process changed when finance and reporting mechanisms changed due to WAM implementation. Management recognizes that reconciliation needs to be done on a more consistent basis. EMS and Accounting staff are working together to make this happen. Management intends that this joint effort continue, and that the frequency increase to a monthly process. EMS and Accounting staff are committed to developing and maintaining a monthly reconciliation process that uses expertise from both areas, to reconcile all loans. There are multiple levels of segregation and internal controls built around entering loans into CIS and loan disbursement. Those include a new verification that occurs between Energy Insight and CIS as an electronic stop if those loans do not match both systems. The internal controls also include multiple layers of review prior to final loan disbursement as well. Management intends to document the current controls and ensure they remain in place in the future.



***2016 Update -Management response – Mark Freeman, Customer Solutions Manager;
Susan Eicher, General Accounting and Treasury Supervisor***

EMS and Accounting staff have worked together and documented the reconciliation process which is being done monthly. There are multiple levels of segregation and internal controls built around entering loans into CIS and loan disbursement. Those include a new validation that requires Energy Insight and CIS to match in both systems. The internal controls also include multiple layers of review prior to final loan disbursement. Management has documented the current controls, and will ensure they remain in place in the future.

Change Management

Through discussions with management and based upon our observations, we noted there are different teams that support application changes and that documentation and evidence is not always retained and is not always consistent from one change to the next. While management has formalized change management policies and procedures, the activities do not consistently follow the policies and procedures. We recommend that management monitor and enforce the formalized documented procedures to ensure that different teams are consistently performing the same activities.

Management response – Matt Barton, Information Services Manager

EWEB agrees with this recommendation and will continue the work that began in 2015 to address these comments related to Change Management.

2016 Update -Management response –Matt Barton, Information Services Manager

Information services has hired a Quality Assurance & Release Coordinator, assigned a Supervisor to oversee change management, and has implemented change management policies and procedures for system and report changes. EWEB will continue to improve and implement Change Management policies and procedures

User Access Conflicts

During our review of IT user access, we noted that several users have access to more than one of the applications we reviewed (WAM, SmartStream, and CIS), thus potentially allowing access to do more than what should be allowed. Due to the number of users within each system, we recommend that management consider performing an assessment of all user access rights and compare access across applications. This review should consider users within SmartStream, WAM, and CIS to ensure that each user is granted appropriate access based on their job title. Correspondingly, management should perform the review to ensure there is no inappropriate access across systems allowing a user to override controls.



Management response – Matt Barton, Information Services Manager

EWEB agrees with this recommendation and will prioritize this work into the IS work plan for 2016. Once the process is in place EWEB will conduct the review mentioned above, at minimum, on an annual basis.

2016 Update -Management response –Matt Barton, Information Services Manager

Information Services has implemented a process to perform annual monitoring for user access conflicts within and across system platforms. Any user access conflicts are resolved based on business need and job responsibilities.

In addition, during our review of user access specifically within the WAM system, we noted that 10 active accounts were assigned with admin access. This allows for full access and rights to work orders and inventory within WAM. We noted that two of the accounts belonged to consultants who no longer work with EWEB, one account was a generic user account, and the remaining seven accounts belong to core WAM team members. We recommend that management perform a user review on at least an annual basis to ensure user accounts are limited to active employees who require admin access to WAM.

Management response – Susan Eicher, General Accounting and Treasury Supervisor

Management will complete a review of administrator access, and will terminate any access that is not deemed necessary, or that creates conflicts with internal controls. Going forward, a review will be performed annually.

2016 Update -Management response – Susan Eicher, General Accounting and Treasury Supervisor

A review of administrator access has been completed, and the number of users with administrative access has been reduced to those who have an essential business need.

Finally, during our review of user access specifically within the CIS, we noted that five users have access to key roles within CIS including adjustment posting, cash accounting, customer service, rates administration and system administration. All of these users are business support analysts who management states require such access to these roles for their day-to-day duties. However, this poses a risk if user activity performed by these individuals is not properly monitored. We recommend that management continually assess the need to grant all five of these employees with access to these various areas within the CIS.

Management response – Mark Freeman, Energy Management & Customer Service Manager

Management recognizes the concern of potential risk in providing 5 users with the access levels stated above. Currently EWEB is in the planning phase of a replacement CIS system project. To be able to successfully execute on this project deliverable while



maintaining continued seamless system support to the current CIS system it has been necessary to increase the FTE of business support analysts with two limited duration positions. The incumbents of these positions began in late 2015 and will serve in this capacity no longer than 3 years. This provides the additional capacity required to support existing operations while the business support analysts who are longer serving subject matter experts are able to support the project. It is anticipated that reduction in the total FTE with these access permission will reduce through attrition in mid to late 2017. The CIS replacement project is scheduled to be completed by YE 2018.

2016 Update -Management response – Mark Freeman, Customer Solutions Manager

Management recognizes the concern of potential risk in providing 5 users with the access levels stated above. This level of access is required to support existing operations and the CIS project. The total FTE with these access permissions will reduce in late 2017.

The following comments are updates from prior year that are on-going and updates to the prior year significant deficiencies. Fully resolve issues noted in the prior year are included in Appendix A. Please see the prior year letter dated March 27, 2015 for full descriptions of the matters listed below and in Appendix A.

Coordination between key stakeholders and lack of service level agreements – In the prior year, these issues were considered significant deficiencies. We have noted significant improvement in this area, especially as it relates to WAM. Though these will always be areas of emphasis for the organization, the continuous improvement has resolved our consideration of significant deficiencies for these issues in the current year.

Management response – Roger Gray, General Manager

The WAM Business Stabilization Project was completed, but was extended in to September 2015. This project focused on the highest priority issues which were completed. This project also identified many issues that still need to be addressed now to optimize and improve overall organization performance. The system is stable and supported and we are now turning to improving business processes that interact with WAM and reporting. This new effort has already been launched. On the positive side WAM is giving us better insight in to how EWEB accounts for and tracks assets that we have historically not had. Service level agreements have been completed for the critical systems, including HRIS, Smart Stream; Allegro; WAM; CIS; Milestone; Lenel; GIS and Outlook email. The SLA work plan required that SLA Leads and SMEs produce service level agreements, up to and including successful sign off by all parties, and upload of signed agreements to EWEB's SharePoint site upon completion. Work will continue on SLAs in 2016.

2016 Update -Management response – Frank Lawson, General Manager

Coordination and collaboration among key stakeholders has improved, and current system projects, including the replacement of the CIS and HRIS systems, have been structured to include and inform key stakeholders throughout the projects. Information services staff are trained and able to deliver ongoing maintenance and support, without continued reliance on third party vendors. The WAM advancement project has resulted in increased system effectiveness and efficiencies. Continued work will occur as part of normal operations.

Internal audit department – The internal audit department continued to evolve during 2015. With the departure of key individuals, the department was reorganized under the finance department as the finance staff have experience in internal controls assessment, design and testing. We encourage EWEB to continue to assess the internal audit department and develop roles and responsibilities within that department that will support and strengthen internal controls throughout the Organization.

Management response – Susan Fahey, Finance Manager

The Enterprise Risk Department staff is currently working with divisions to identify risks which includes internal controls assessments. Once risks are identified and assessed, risk management plans will be developed and monitored. Additionally, several policies and procedures (e.g., delegated authority, ethics, self-insurance, power risk management) have been, or are in the process of being, revised to strengthen operational procedures and controls. The department also has an online intake site that allows employees to suggest internal control and compliance improvements.

2016 Update -Management response –Susan Fahey, Chief Financial Officer

Enterprise Risk Department staff continues to work with divisions to identify and assess risks as well as the related management of those risks. Several policies and procedures have been updated to strengthen internal controls. A recruitment is in process for an experienced financial internal auditor to supplement the skills of the current Internal Auditor whose focus is evaluating IS controls.

Cross training and documentation of policies and procedures for WAM

We have noted through our testing that there has been some improvement in this area, however, additional documentation and cross training is still needed. We have noted that this is in the 2016 goals provided to us by management.

Management response – Susan Eicher, General Accounting and Treasury Supervisor

During 2015, as a part of the WAM Business Stabilization Project, additional training has been delivered to end users for key modules of WAM. IS staff have received training and demonstrated the ability to support the system with minimal assistance from outside resources. System and process documentation is underway and will be continuing as



processes are refined and improvements are implemented. Management acknowledges that cross training for skills of the core team and other key system users will continue during 2016. Ongoing work will include an emphasis on documentation of processes performed by key system users.

2016 Update -Management response – Susan Eicher, General Accounting and Treasury Supervisor

The WAM Stabilization Project has ended, and the next phase, the WAM Advancement Project, has collected training needs from staff, and delivered group and individualized training. Cross training of core team members is in process and will be ongoing. As part of the WAM Advancement Project and cross training, documentation is being developed and updated.

Analysis of roles and permissions within IT systems

We updated our testing of roles and permission with IT systems during the current year audit. See ***User Access Conflicts*** under the current year comments for our recommendations.

Management response – Matt Barton, Information Services Manager

Please see the response to ***User Access Conflicts*** under the current year comments.

Cybersecurity protocols

We saw an increase of protocols across the Organization in regard to cybersecurity protocols and have no further current recommendations over this area, other than the ***Change Management*** recommendation listed in the current year comments. However, as this is an emerging area with a significant amount of public and federal scrutiny, we recommend management continue significant diligence in this area.

Management response – Matt Barton, Information Services Manager

EWEB agrees with this recommendation and will continue its efforts in cybersecurity. Please see the response to ***Change Management*** under the current year comments for additional detail.

Version control

Please see ***Change Management*** under the current year comments for our recommendations.

Management response – Matt Barton, Information Services Manager

Please see the response to ***Change Management*** under current year comments.

MOSS-ADAMS_{LLP}***Inventory purchases outside of the inventory system***

The tracking and purchasing of inventory items appears to have been resolved in the current year. However, management is still assessing how to handle the inventory that was found in 2013. As such, we recommend continued assessment of the inventory found in 2013.

Management response – Susan Fahey, Finance Manager

The warehouse joined the Finance Division in September 2015 and developed a remote inventory project plan. Each remote site has removed obsolete items, identified items to be included in inventory, added several stock items into the system and completed a physical count. The work is estimated to be approximately 50% complete with June 30, 2016 as the expected completion date. In addition to the remote inventory work, the inventory policy is in the final revision stage and includes strengthened internal control language.

2016 Update -Management response –Susan Fahey, Chief Financial Officer

Staff have completed the remote inventory project plan. Inventory items have been entered in the system, and consumables are being managed either by site staff or a third party. Training and support for remote inventory transactions have been provided by Central Warehouse staff. Approximately 2000 stock units have been added and are being managed by site supervisors. Each quarter, central warehouse staff count remote inventory to verify materials are being managed in accordance with the recently adopted Inventory Management Policy.

The Board's written responses to the other recommendations identified in our audit were not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

MOSS ADAMS_{LLP}

This communication is intended solely for the use of the Board and members of management and is not intended to be and should not be used by anyone other than these specified parties.

Sincerely,

Portland, Oregon
March 4, 2016

APPENDIX A

PRIOR YEAR CONTROL DEFICIENCIES RESOLVED IN 2014

***Support for Oracle application and database environments***

In the prior year, we had noted that EWEB significantly expanded its use of Oracle as a result of the recent WAM system implementation. However, resources on staff to adequately support the application and database environments were limited. We noted significant improvement in this area and consider this issue resolved.

Data protection management policy and data classification procedures

EWEB continued to classify critical system in 2015 and document policy and procedures to ensure the security and confidentiality of information. Though we consider this comment resolve, please see ***Change Management*** in the current year comments for additional recommendations over documentation.

Conflicts of interest related to the internal audit function

Based on our testing, we believe the conflicts of interest that were occurring in the internal audit department are resolved.

System passwords

We had no ongoing issues or recommendations for system passwords, therefore, we consider this resolved.

Timely reconciliation of bank reconciliations

Bank reconciliations were timely reconciled during 2015. We consider this matter resolved.

Customer adjustments report

We found that customer adjustment reports are being reviewed at the appropriate level in a timely manner. We consider this matter resolved.



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Simpson, Helgeson, Manning, Mital and Brown
FROM: Erin Erben, Chief Customer Officer, Bert Dunn, Lead Mid-Term Trader and
Catherine Gray, Energy Resource Analyst II
DATE: September 22, 2016
SUBJECT: Wholesale Market Price Impacts and Mitigation
OBJECTIVE: Information Only – Response to Board Questions

Issue

The Board has requested information to better understand how wholesale prices impact EWEB retail prices and how we mitigate those impacts.

Background

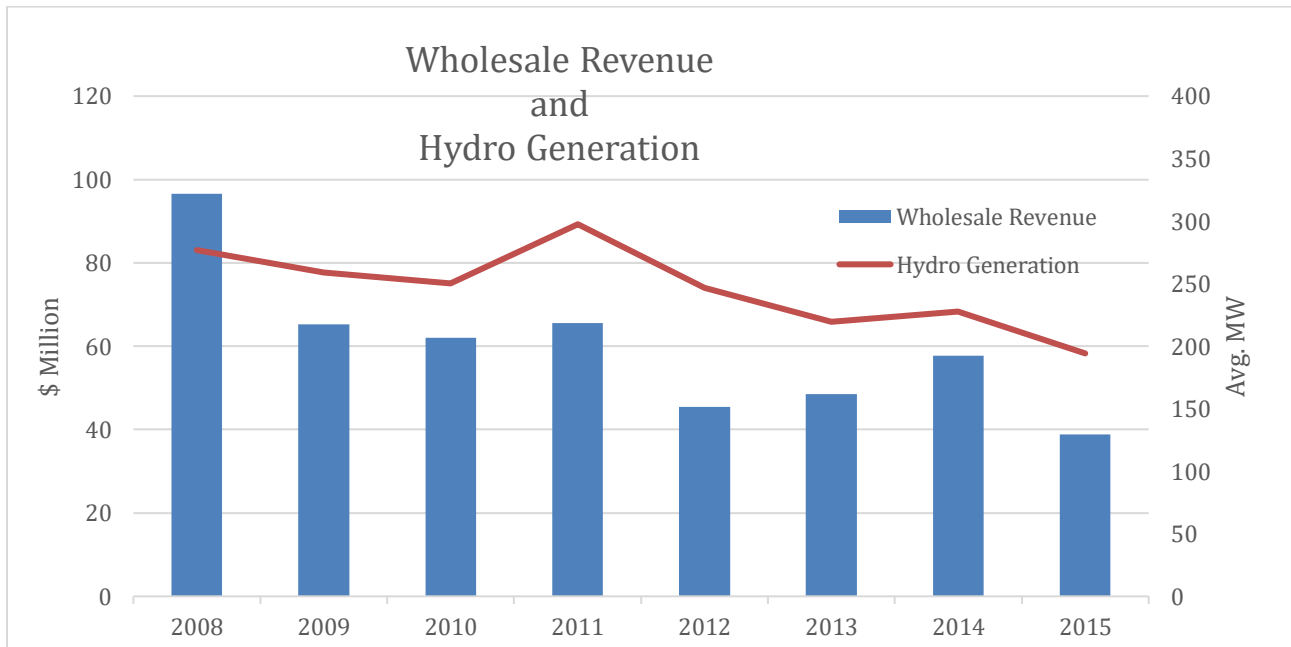
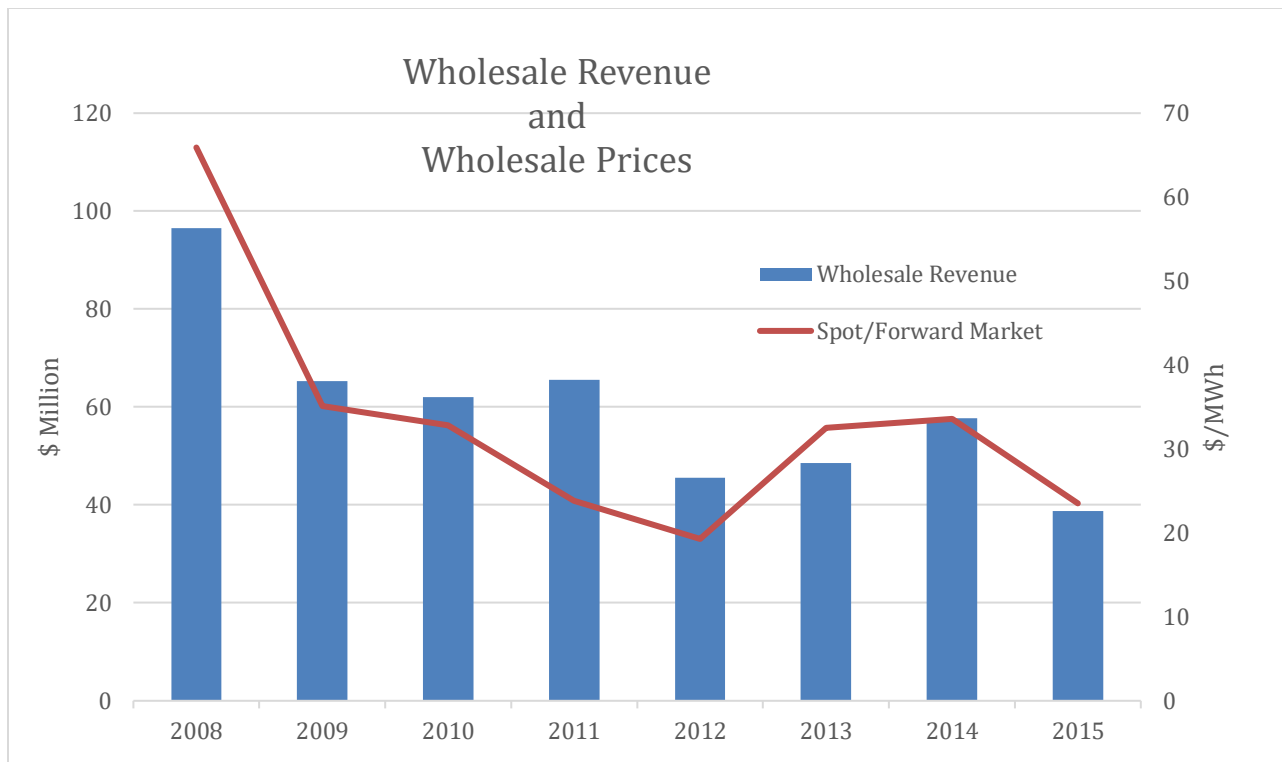
EWEB has substantial financial exposure to wholesale market prices, hydro generation volumes, and retail sales volumes. Wholesale prices and generation volumes affect wholesale revenues directly. Retail sales volumes affect retail revenues directly. Both wholesale revenue and retail revenue are major factors influencing retail prices (rates).

EWEB exposure to wholesale market prices is due to ongoing surplus power in excess to the needs of our retail customers. EWEB sells its surplus power in wholesale markets with the revenues offsetting power supply expenses. As wholesale prices have fallen sharply in the last eight years, wholesale revenues have also fallen. The fall in wholesale revenues has also significantly reduced BPA revenues and a key driver for the rising costs of BPA power. These reduced revenues have put upward pressure on retail prices and EWEB has implemented comprehensive activities to minimize the impacts.

Discussion

EWEB and BPA hydroelectric resources commonly produce surplus power due to uncertain stream flows. EWEB has also gained additional surplus from the acquisition of renewable resources and retail load loss.

Wholesale market power prices and wholesale revenues, after peaking in 2008, have since dropped sharply. Primary market drivers include lower natural gas prices, new renewable resource additions and modest to stagnant load growth.



Although wholesale prices have fallen since 2008 and generation volumes have sometimes been below average, reduced wholesale revenues are not the only contributing factor. Other factors have also put pressure on retail prices, such as lower retail sales, higher BPA costs, and increased operating expenses.



EWEB revenues, whether wholesale or retail, have differing sensitivities to the key drivers. The table below illustrates the relative impact for each of the drivers using the same assumptions used for sizing financial power reserves.

2017 Revenue Sensitivity to Key Drivers (relative to budget results)	
Wholesale Prices (30% drop)	-\$ 1,000,000
Hydro Generation (drop to Firm levels)	-\$ 3,300,000
Retail Sales (4% drop)	-\$ 4,900,000

Note that 2017 has less surplus power due to forward sales and therefore is less sensitive than other years. EWEB sells surplus power in forward markets to reduce wholesale revenue volatility. Current practice is to sell EWEB surplus power over a 5 year period. In 2008 we were selling surplus power over a 3 years period.

Strategies deployed to mitigate the impact of surplus resources, variance of market prices, and maintain competitive retail pricing include the following:

- Hedge Trades
 - Forward sales and option purchases up to five years in advance.
- Asset sales
 - Smith Creek Hydroelectric project sold in 2016.
- Cost Management
 - Reductions in capital spending such as Carmen-Smith
 - Reductions in operation and maintenance expenses
 - Bond refinancing to reduce ongoing debt payments
- Pricing (Rate) Design
 - Revisions to customer pricing to better align with current costs of service.

In summary, EWEB is a net seller in the wholesale market due to the surplus of resources that exceed our retail customer demand and lower wholesale prices contribute to higher retail prices. In response we have taken measures to mitigate the impact to retail pricing using various strategies.

Recommendation

For information only

Requested Board Action

No action is requested