



Metro Nashville
DISTRICT ENERGY SYSTEM

DES Advisory Board Meeting
First Quarter FY16
November 19, 2015

Agenda

1. Call to Order
2. Nomination and Election of Chair
3. Review & Approval of Previous Meeting Minutes
4. Customer Sales
5. Review of DES Contractor Performance
6. Natural Gas Purchasing Status
7. FY16 Costs to Date
8. FY16 Budget Update
9. Capital Projects Review & Status
10. Other Board Member Items
11. Adjourn



1. *Call to Order*
2. *Nomination and Election of Chair*
3. *Review and Approval of
Previous Meeting Minutes*

4. *Customer Sales*

- ❖ Table 4: Customer Cost Comparison
- ❖ Figure 4A: Historic Unit Cost of Steam and Chilled Water
- ❖ Figure 4B: Historic Total Costs and Usages of Steam and Chilled Water

Summary Table 4: Customer Cost Comparison for the Previous 12 Months

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Oct 2013 - Sept 2014	Oct 2014 - Sept 2015	% Diff.	Oct 2013 - Sept 2014	Oct 2014 - Sept 2015	% Diff.
Private	Cost	\$ 1,506,861	\$ 1,522,155	1.01%	\$ 3,395,283	\$ 3,525,336	3.83%
	Usage (lbs or tonhrs)	93,485,331	96,188,895	2.89%	17,157,050	17,850,454	4.04%
	Unit Cost	\$ 16.12	\$ 15.82	-1.8%	\$ 0.198	\$ 0.197	-0.2%
State	Cost	\$ 2,171,937	\$ 2,044,685	-5.86%	\$ 3,305,422	\$ 3,307,959	0.08%
	Usage (lbs or tonhrs)	124,365,580	115,482,382	-7.14%	14,705,922	14,026,720	-4.62%
	Unit Cost	\$ 17.46	\$ 17.71	1.4%	\$ 0.225	\$ 0.236	4.9%
Metro	Cost	\$ 2,812,909	\$ 2,381,741	-15.33%	\$ 5,584,411	\$ 5,322,161	-4.70%
	Usage (lbs or tonhrs)	194,464,622	151,245,967	-22.22%	29,935,800	26,489,581	-11.51%
	Unit Cost	\$ 14.46	\$ 15.75	8.9%	\$ 0.187	\$ 0.201	7.7%
Aggregate	Cost	\$ 6,619,672	\$ 6,077,202	-8.19%	\$ 12,285,116	\$ 12,262,981	-0.18%
	Usage (lbs or tonhrs)	418,013,825	368,755,571	-11.78%	61,798,772	58,929,643	-4.64%
	Unit Cost	\$ 15.84	\$ 16.48	4.1%	\$ 0.199	\$ 0.208	4.68%

MFA not included in values shown

Figure 4A: Historic Unit Cost of Steam and Chilled Water

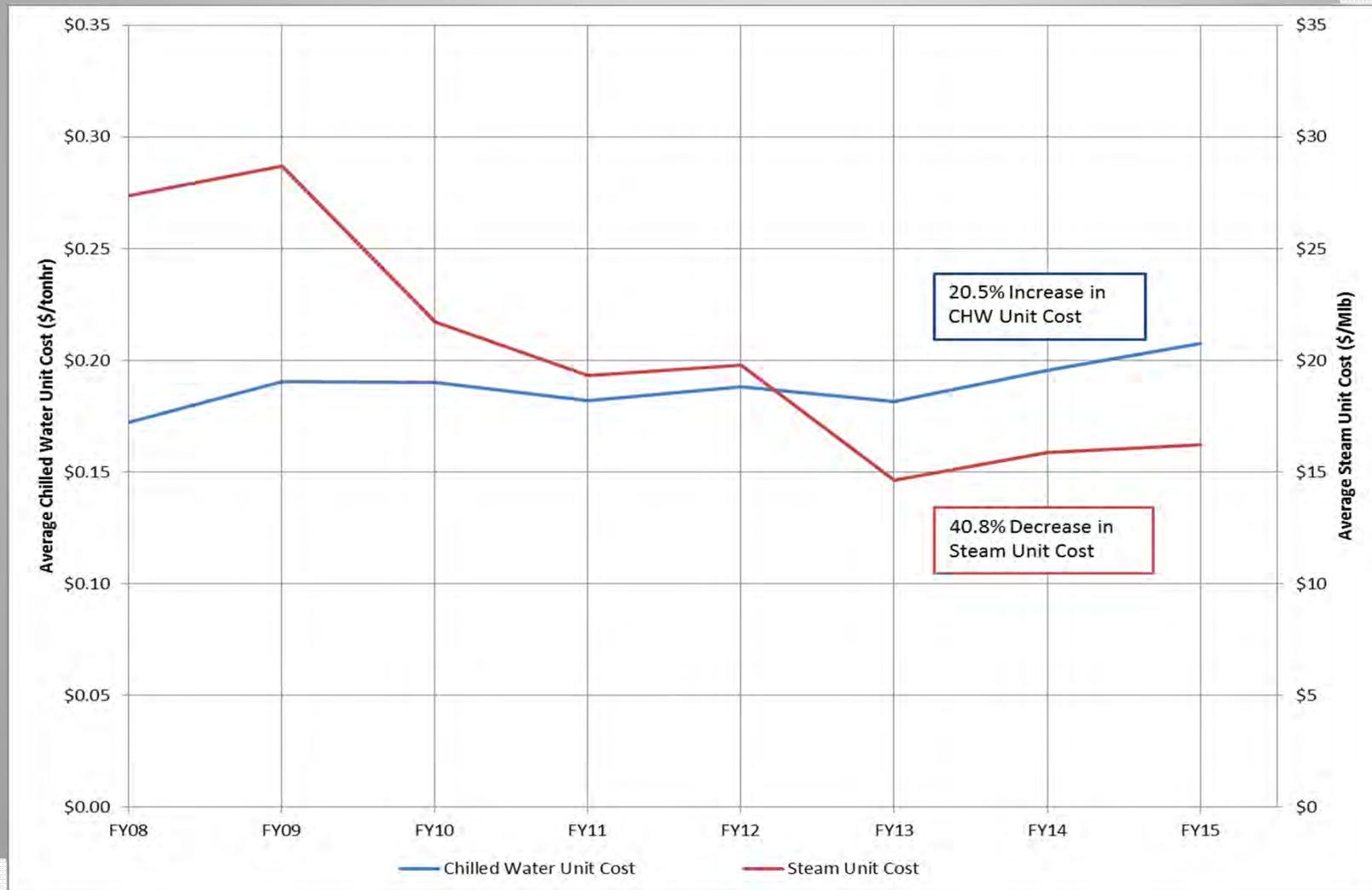
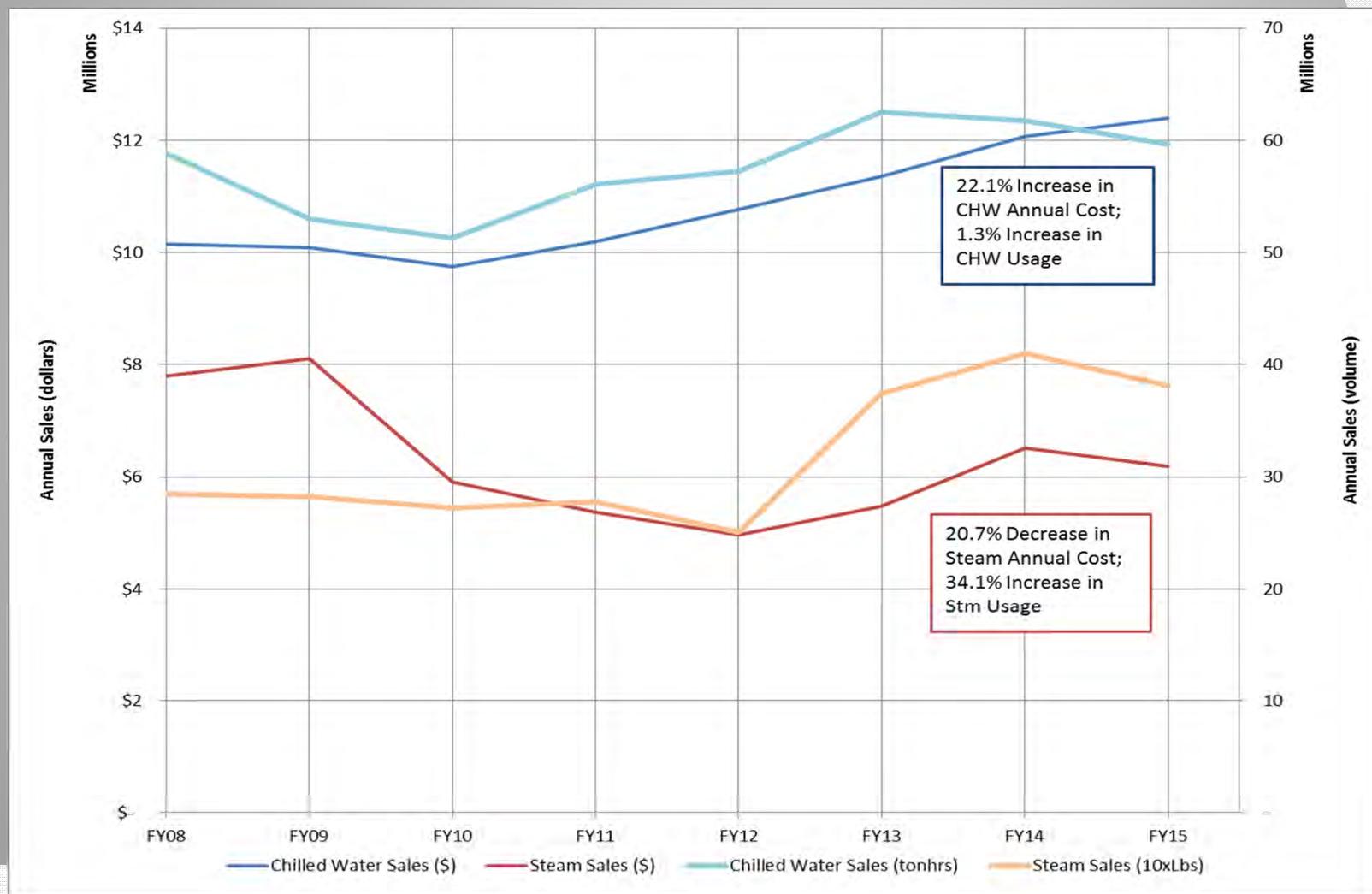


Figure 4B: Historic Total Costs and Usages of Steam and Chilled Water

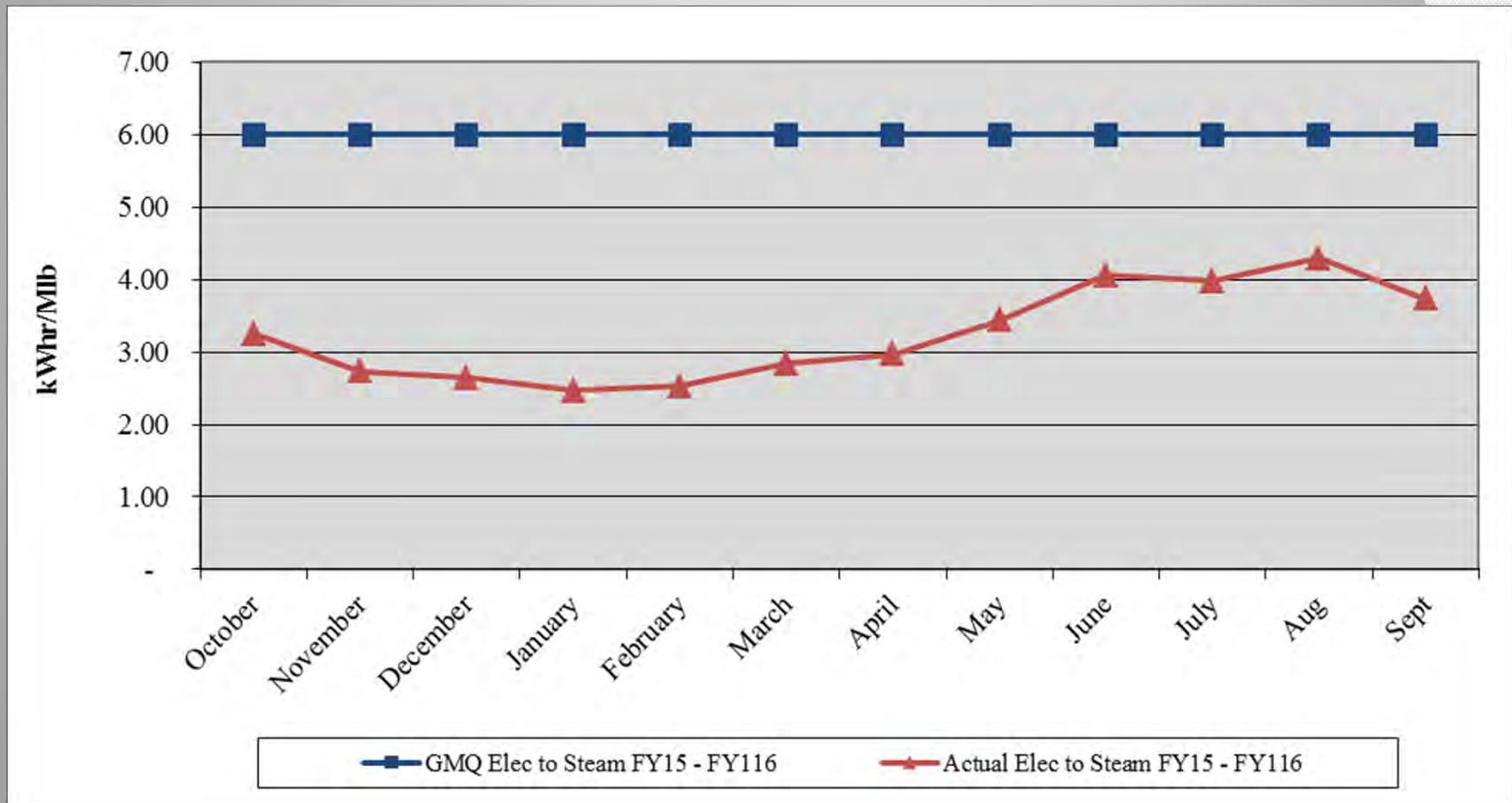


5. Review of DES Contractor Performance

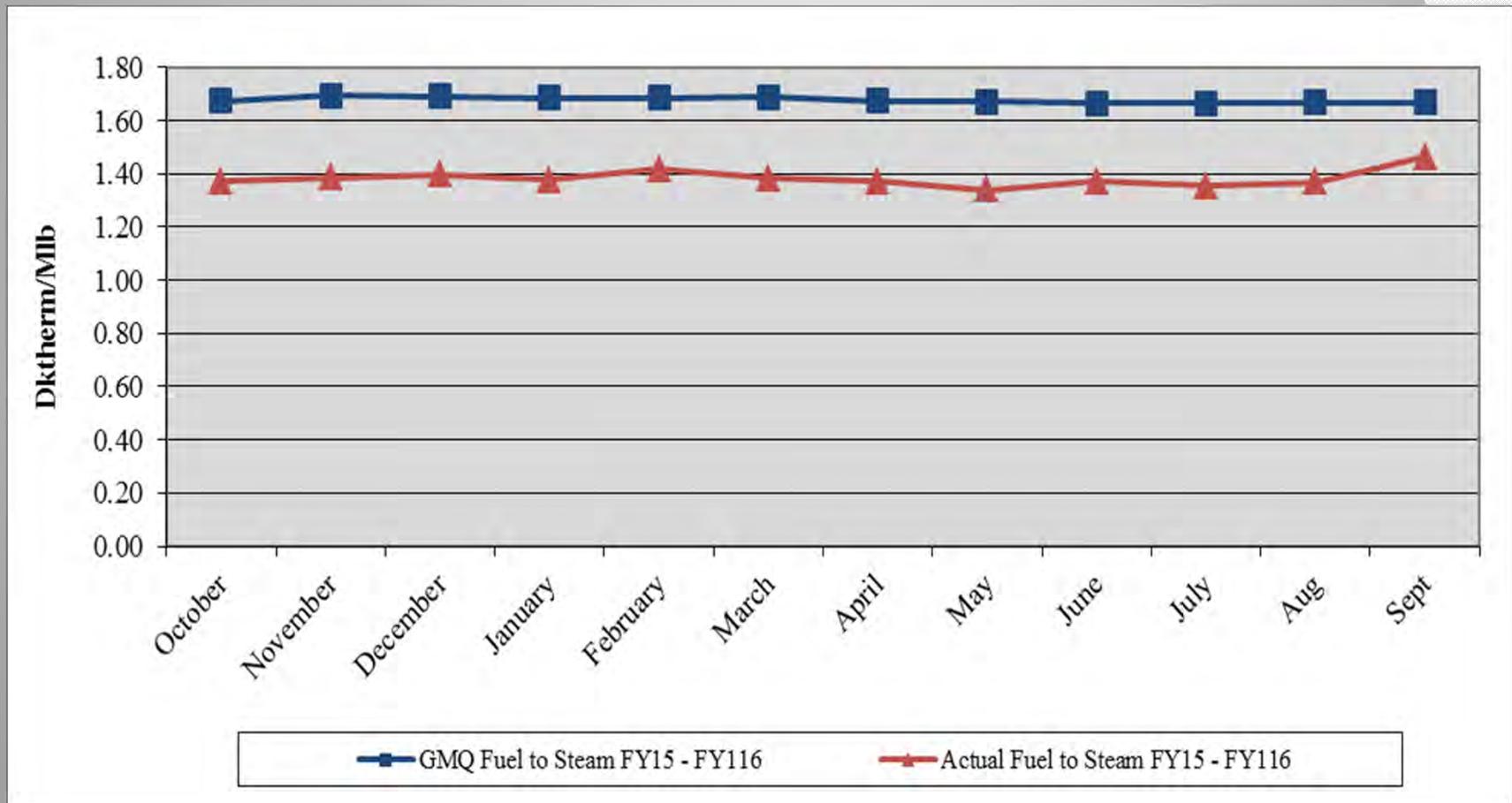
Contractor (CNE) is in compliance with their contractual obligations for FY16.

-  Excellent Performance – No Improvement Necessary
-  Satisfactory Performance – Some Improvement Could Be Made
-  Poor Performance – Much Improvement Necessary

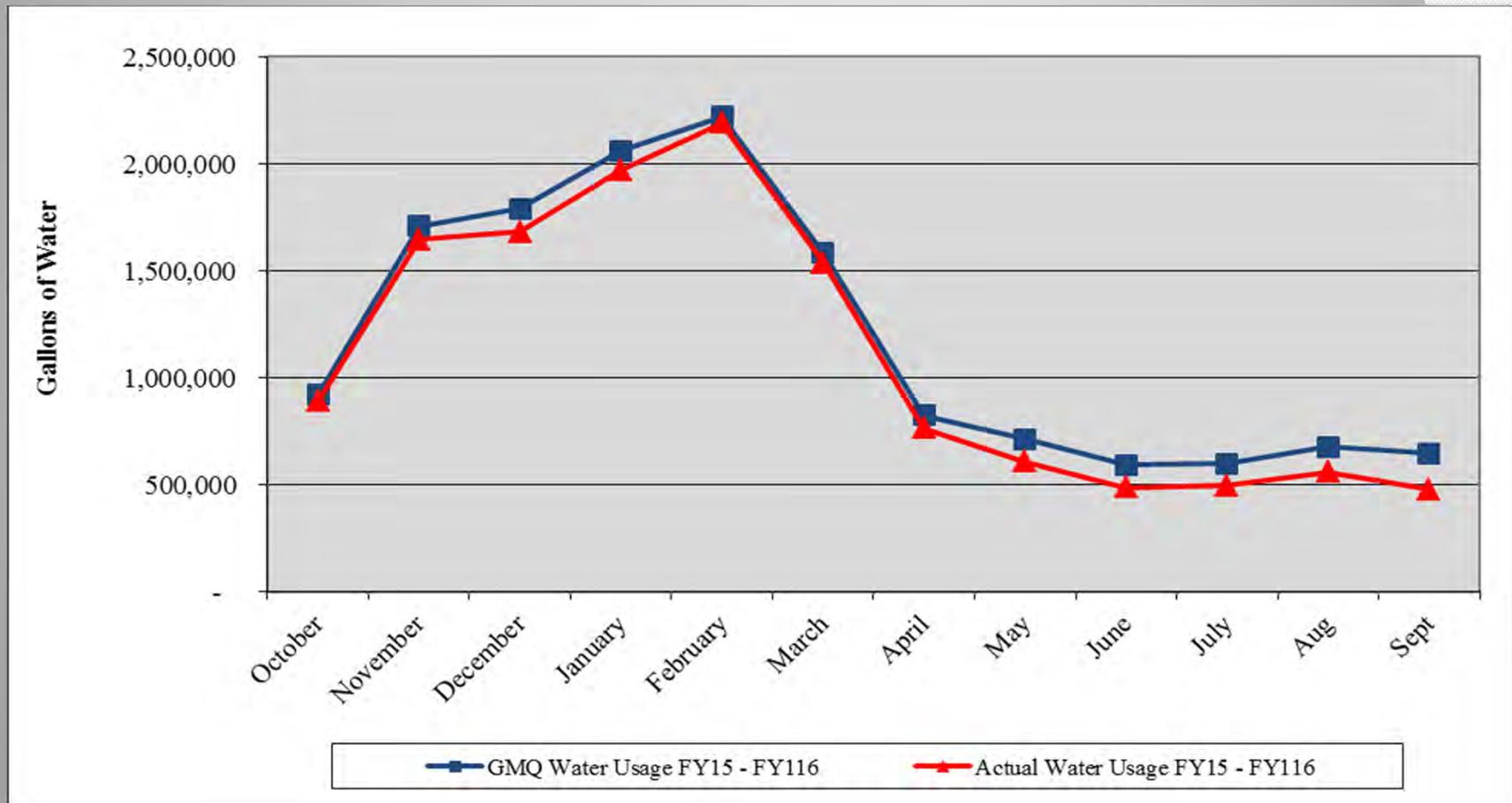
Performance Measurement FY16: Steam Electric Conversion ●



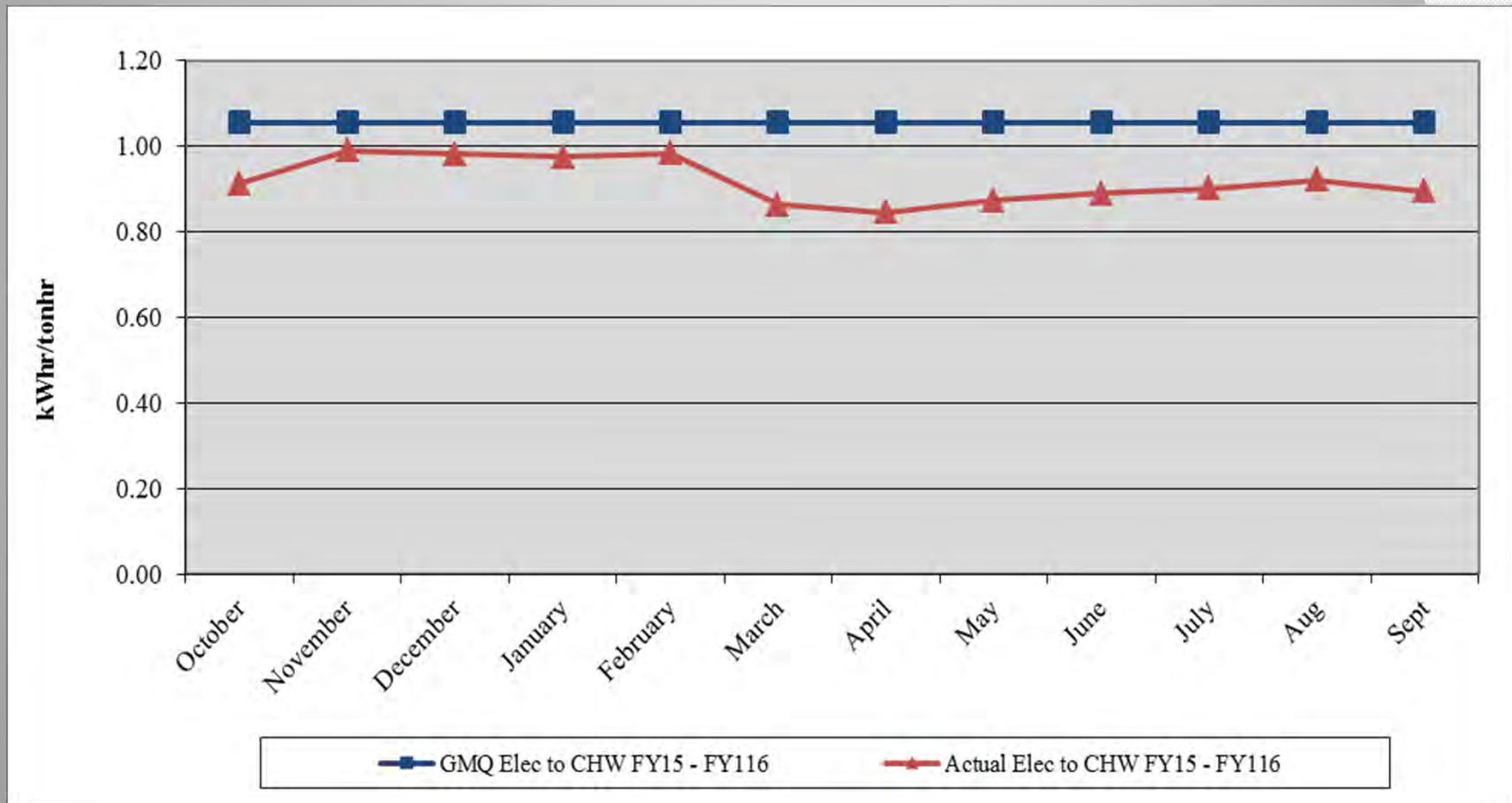
Performance Measurement FY16: Steam Plant Efficiency



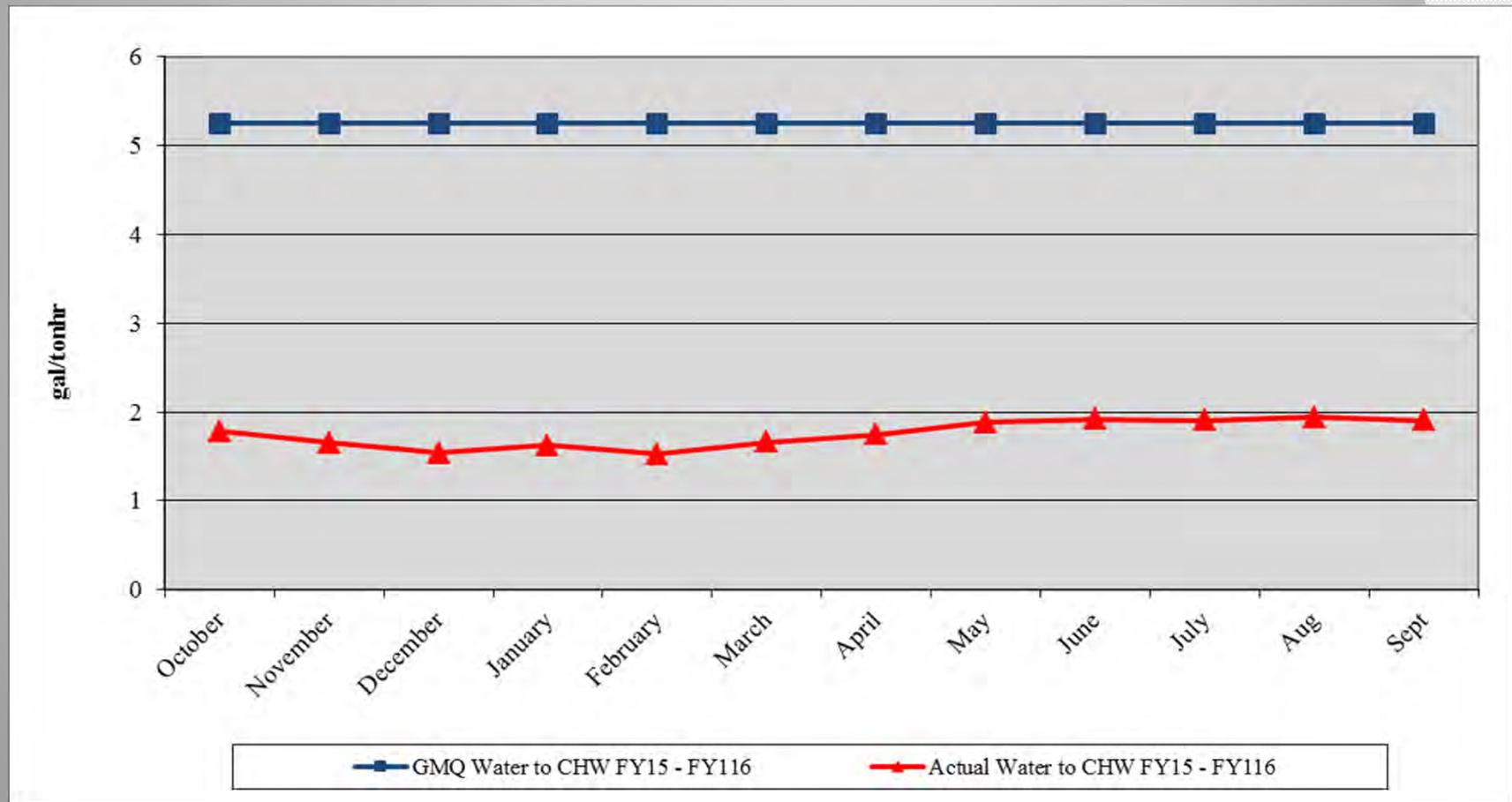
Performance Measurement FY16: Steam Water Conversion ●



Performance Measurement FY16: CHW Electric Conversion



Performance Measurement FY16: CHW Water Conversion ●





Water Treatment

❖ Steam and Condensate ●

- ❖ Corrosion
- ❖ Iron
- ❖ Hardness
- ❖ Chlorine/Sulfite

❖ Condensing Water ●

- ❖ Conductivity
- ❖ Biologicals

❖ Chilled Water ●

- ❖ Hardness
- ❖ Corrosion
- ❖ Biologicals
- ❖ Delta T Issue



EGF Walkthrough

- ✓ Equipment Maintenance ●
- ✓ Operations ●
- ✓ Electrical ●
- ✓ Housekeeping ●
- ✓ Building Structure ●
- ✓ Building Exterior and Grounds ●



EDS Walkthrough

- ✓ Vault/Tunnel Housekeeping ●
- ✓ Maintenance Items ●
 - ✓ Insulation Repair/Replacement ●
 - ✓ Water Infiltration ●
 - ✓ Corrosion of Structural Metal Components ●
- ✓ Safety Items ●



6. *Natural Gas Purchasing*

- ❖ Natural Gas Purchasing Review
 - ❖ Table 6: FY16 Gas Spending & Budget Comparison
 - ❖ Figure 6: Actual and Projected Gas Cost Comparison

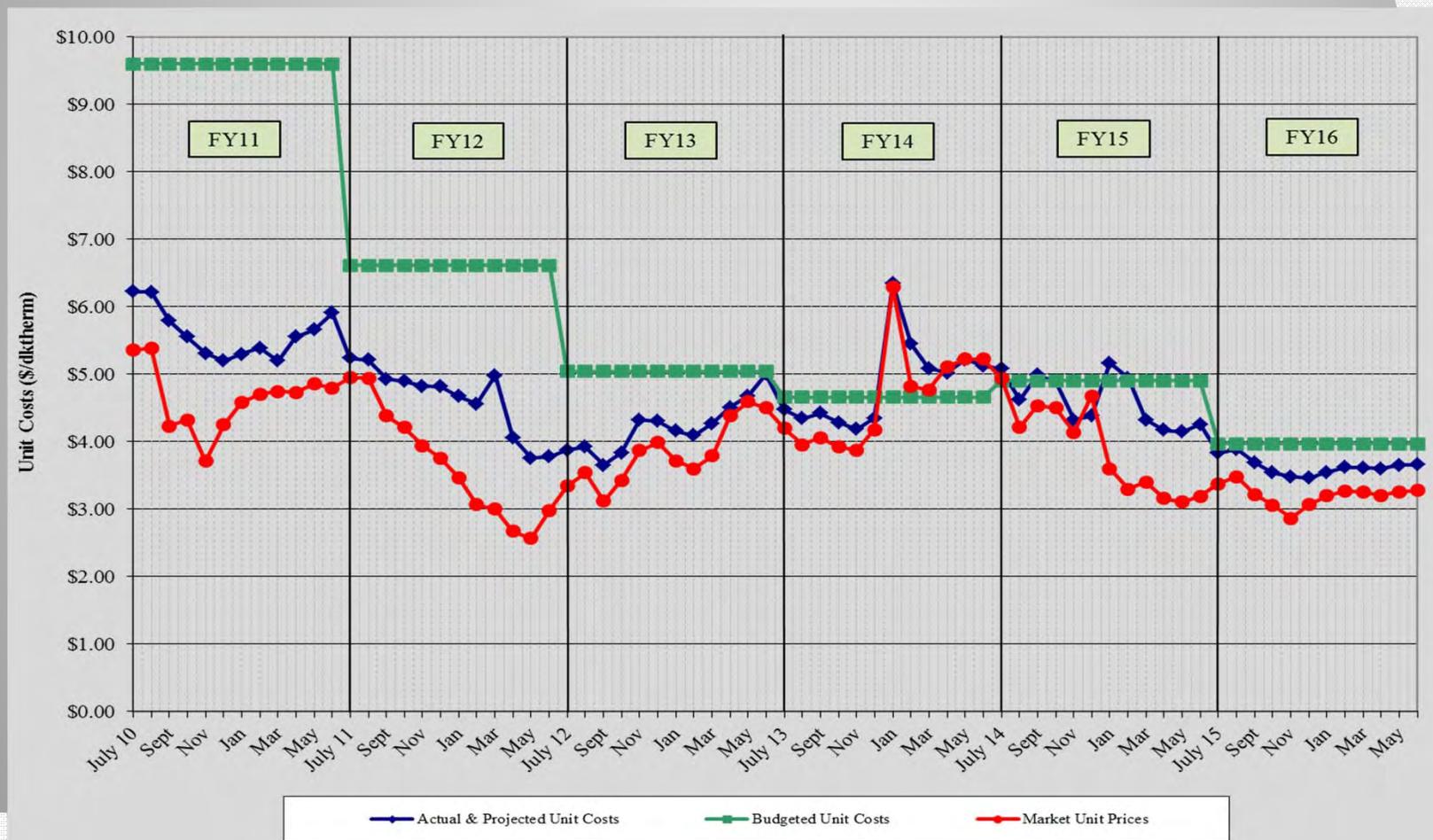
Table 6: FY16 Gas Spending & Budget Comparison

	Actual FY16 To date (Sept 30)	Budget FY16	Percent Difference
Steam Sendout (Mlbs)	59,226	68,503	-13.5%
Fuel Use (Dth) (includes propane)	● 82,728	94,000	-12.0%
Plant Eff (Dth/Mlb)	● 1.397	1.372	1.8%
Total Gas Cost (includes propane)	● \$314,074	\$392,356	-20.0%
Unit Cost of Fuel (\$/Dth)	● \$3.796	\$4.174	-9.1%

Excludes consultant fees and FEA and budget contingency;

Includes transportation and propane costs

Figure 6. Actual and Projected Gas Cost Comparison History



7. FY16 Costs to Date

Item	FY15 Actual	FY16 Budget	FY16 Actual to date	Percent of FY16 Budget
FOC's	\$ 4,532,100	\$ 4,668,200	\$ 1,133,000	24.27%
Pass Throughs				
Non-Energy	\$ 1,249,000	\$ 1,069,500	\$ 319,600	29.88%
Water/Sewer	\$ 509,000	\$ 745,400	\$ 210,500	28.24%
Natural Gas Base	\$ 2,897,000	\$ 2,832,858	\$ 315,400	11.13%
Natural Gas Contingency	\$ -	\$ 555,142	\$ -	0.00%
Electricity	\$ 5,459,700	\$ 6,545,700	\$ 2,353,100	35.95%
ORF Deposit	\$ 600	\$ -	\$ -	
Debt Service	\$ 5,646,000	\$ 5,565,900	\$ 878,300	15.78%
Total Expenses	\$ 20,293,400	\$ 21,982,700	\$ 5,209,900	23.70%
Total Revenues	\$ 18,425,800	\$ 20,188,200	\$ 5,434,000	26.92%
Metro Funding Amount	\$ 1,867,600	\$ 1,794,500	\$ 448,625	25.00%

8. FY16 Budget

Item	FY15 Budget	FY16 Budget	Percent Change
FOC's	\$ 4,606,800	\$ 4,668,200	1.33%
Pass Throughs			
Non-Energy	\$ 1,041,300	\$ 1,069,500	2.71%
Water/Sewer	\$ 724,600	\$ 745,400	2.87%
Natural Gas Base	\$ 3,121,940	\$ 2,832,858	-9.26%
Natural Gas Contingency	\$ 635,260	\$ 555,142	-12.61%
Electricity	\$ 6,574,600	\$ 6,545,700	-0.44%
ORF Deposit	\$ 600	\$ -	-100.00%
Debt Service	\$ 5,645,900	\$ 5,565,900	-1.42%
Total Expenses	\$ 22,351,000	\$ 21,982,700	-1.65%
Total Revenues	\$ 20,501,500	\$ 20,188,200	-1.53%
Metro Funding Amount	\$ 1,849,500	\$ 1,794,500	-2.97%

9. Capital Expenditure Update

	Spent to End of FY15	FY16 Spending	Balance to Date (10/31/15)
R&I Projects	\$2,579,384	\$123,820	\$17,098
49109-2010 Bond	\$2,309,419	\$12,115	\$304,382
49107-Customer Connection Fund	\$6,711,621	\$11,214	\$1,777,165
Total	\$11,600,424	\$147,149	\$2,098,645

Capital Projects Review

Active Capital Projects

- DES 061: MH & Tunnel Steel Corrosion Repair & Prevention – Ongoing
- DES 104: TOU – CNE Implementing Program
- DES 110: EGF Alternate Fuels Evaluation – Awaiting Final Report from CNE
- DES 111: EGF Combined Heat and Power – Engineer Selected
- DES 117: Manhole S5 Rebuild State Library and Archives – Nearing Completion
- DES 119: Chilled Water System Delta T – Proposal Phase

Capital Projects Review

Capital Projects in Close-out

- DES 107: Manholes A, B and M Modifications at the New West Riverfront Park
- DES 112: Condensate Return Piping Replacement Cordell Hull Building

Potential Customer: Lifeway

- Approx 257,000 sq ft Office Building Next Door
- Anticipated CHW Demand of 492 tons
- Anticipated Steam Demand of 2,500 pph
- Anticipated Completion in Fall 2017
- Building Design Progressing with DES Service
- DES Service Agreement Commitment Anticipated

10. Other Board Member Items

Notification for Inclement Weather

11. Adjourn

- *Advisory Board Meeting Schedule*
- FY16 – 2nd Quarter Meeting – February 18, 2016
- FY16 – 3rd Quarter Meeting – May 19, 2016
- FY16 – 4th Quarter Meeting – August 18, 2016
- FY17 – 1st Quarter Meeting – November 17, 2016