



Metro Nashville
DISTRICT ENERGY SYSTEM

DES Advisory Board Meeting
Fourth Quarter FY18
August 16, 2018



Agenda

1. Call to Order
2. Review & Approval of Previous Meeting Minutes
3. Customer Sales
4. Review of DES Contractor Performance
5. Natural Gas Purchasing Update
6. FY18 Costs to Date
7. FY19 Budget
8. Capital Projects Review & Status
9. FVB Report
10. Other Board Member Items
11. Adjourn

1. Call to Order
2. Review & Approval of Previous Meeting Minutes

3. *Customer Sales*

- ❖ Table 3: Customer Cost Comparison
- ❖ Figure 3A: FY17 and FY18 CHW Cost Comparison
- ❖ Figure 3B: FY17 and FY18 Steam Cost Comparison

Summary Table 3: Customer Cost Comparison for the Previous 12 Months

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		July 2016 - June 2017	July 2017 - June 2018	% Diff.	July 2016 - June 2017	July 2017 - June 2018	% Diff.
Private	Cost	\$ 1,270,761	\$ 1,324,249	4.21%	\$ 3,511,105	\$ 3,646,007	3.84%
	Usage (lbs or tonhrs)	81,496,432	93,544,381	14.78%	18,739,185	18,671,217	-0.36%
	Unit Cost	\$ 15.59	\$ 14.16	-9.2%	\$ 0.187	\$ 0.195	4.2%
State	Cost	\$ 1,660,055	\$ 1,780,812	7.27%	\$ 3,271,609	\$ 3,346,892	2.30%
	Usage (lbs or tonhrs)	86,279,888	114,928,533	33.20%	13,650,178	13,769,352	0.87%
	Unit Cost	\$ 19.24	\$ 15.49	-19.5%	\$ 0.240	\$ 0.243	1.4%
Metro	Cost	\$ 3,313,186	\$ 3,019,593	-8.86%	\$ 6,742,061	\$ 6,168,520	-8.51%
	Usage (lbs or tonhrs)	148,645,352	152,358,885	2.50%	31,130,545	26,929,639	-13.49%
	Unit Cost	\$ 22.29	\$ 19.82	-11.1%	\$ 0.217	\$ 0.229	5.8%
Aggregate	Cost	\$ 6,244,003	\$ 6,124,654	-1.91%	\$ 13,524,775	\$ 13,161,418	-2.69%
	Usage (lbs or tonhrs)	316,421,672	360,831,799	14.04%	63,519,908	59,370,208	-6.53%
	Unit Cost	\$ 19.73	\$ 16.97	-14.0%	\$ 0.213	\$ 0.222	4.12%

MFA not included in values shown

Figure 3A: FY17 and FY18 CHW Cost Comparison

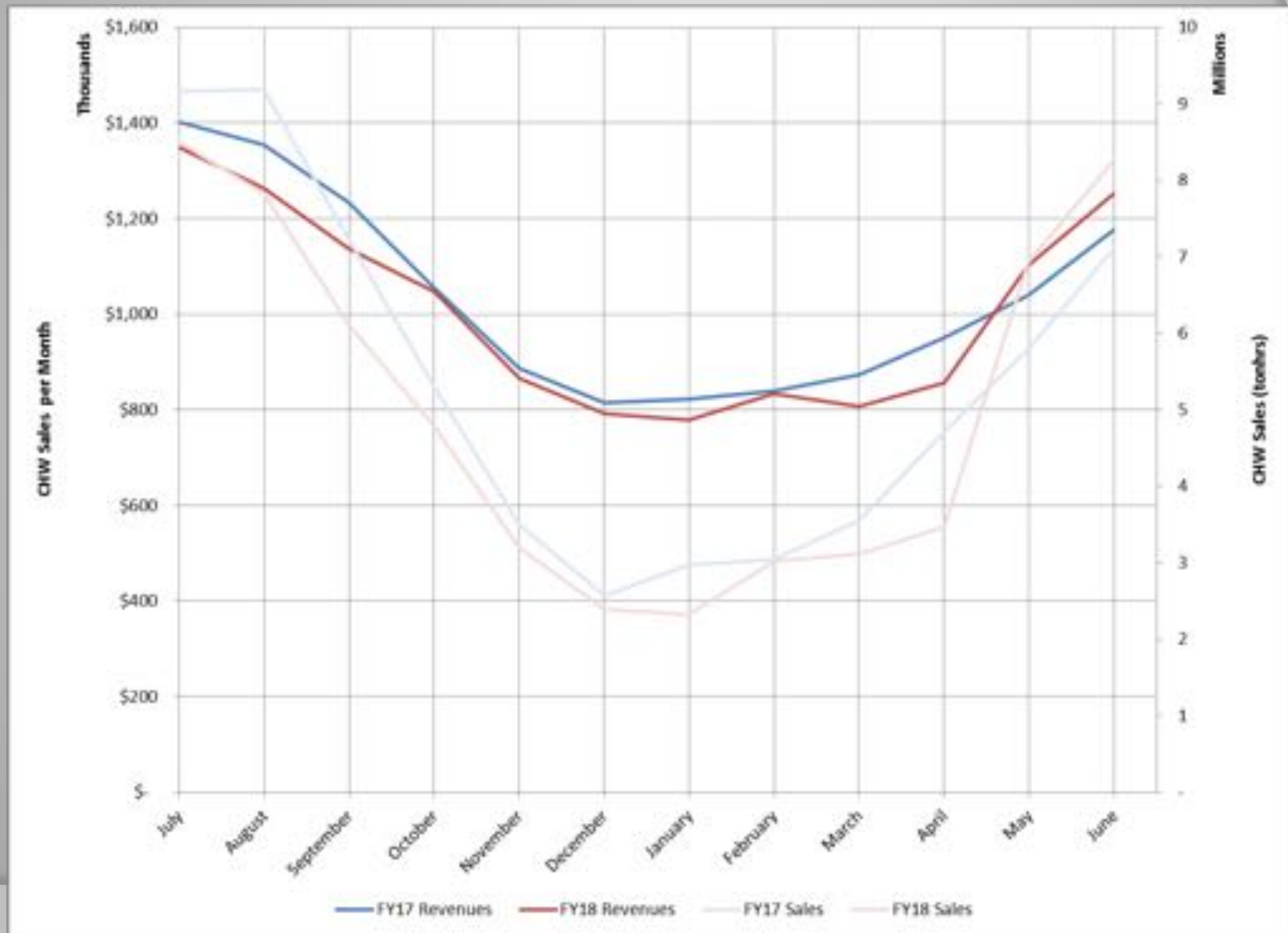
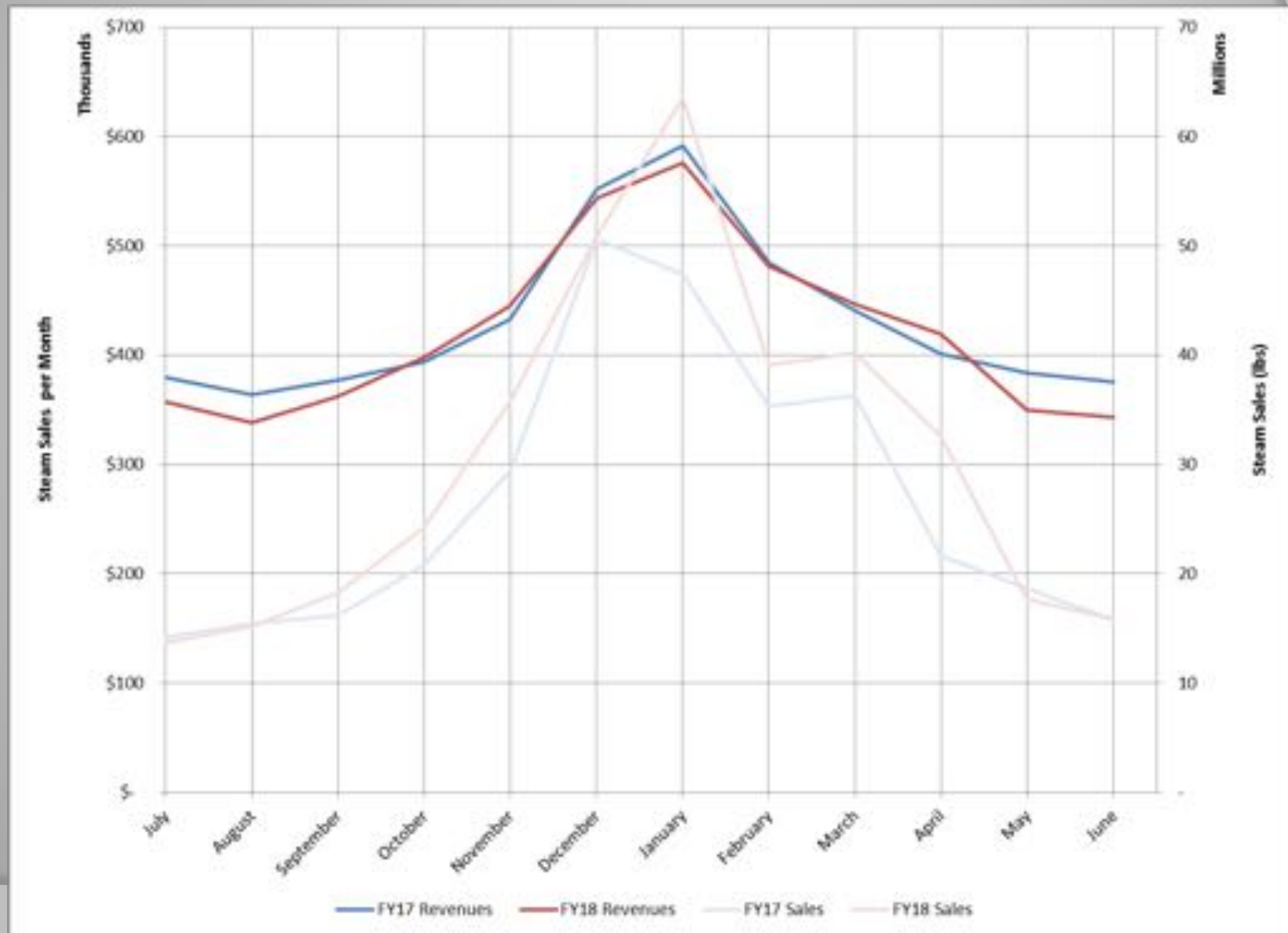





Figure 3B: FY17 and FY18 Steam Cost Comparison

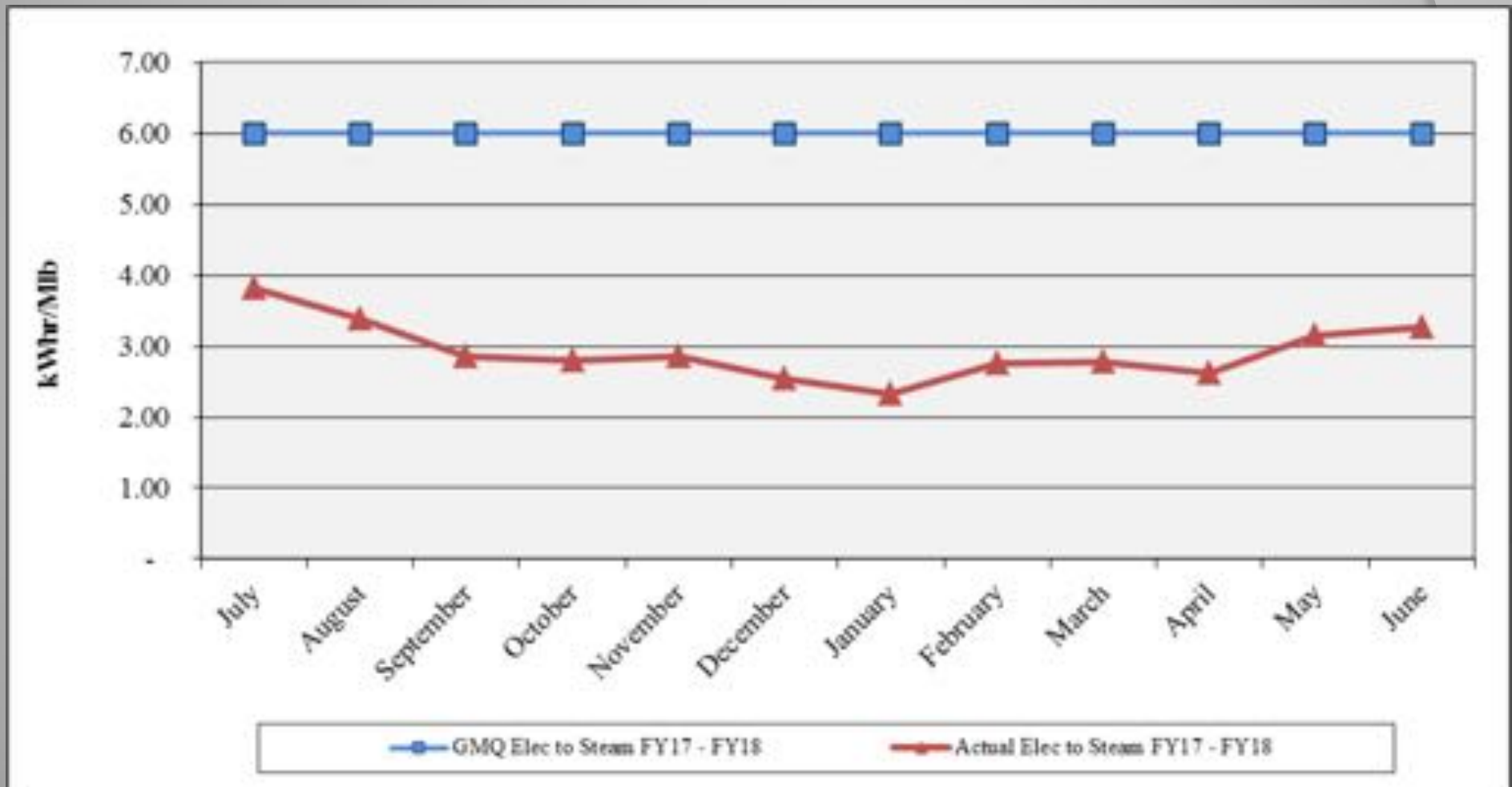


4. *Review of DES Contractor Performance*

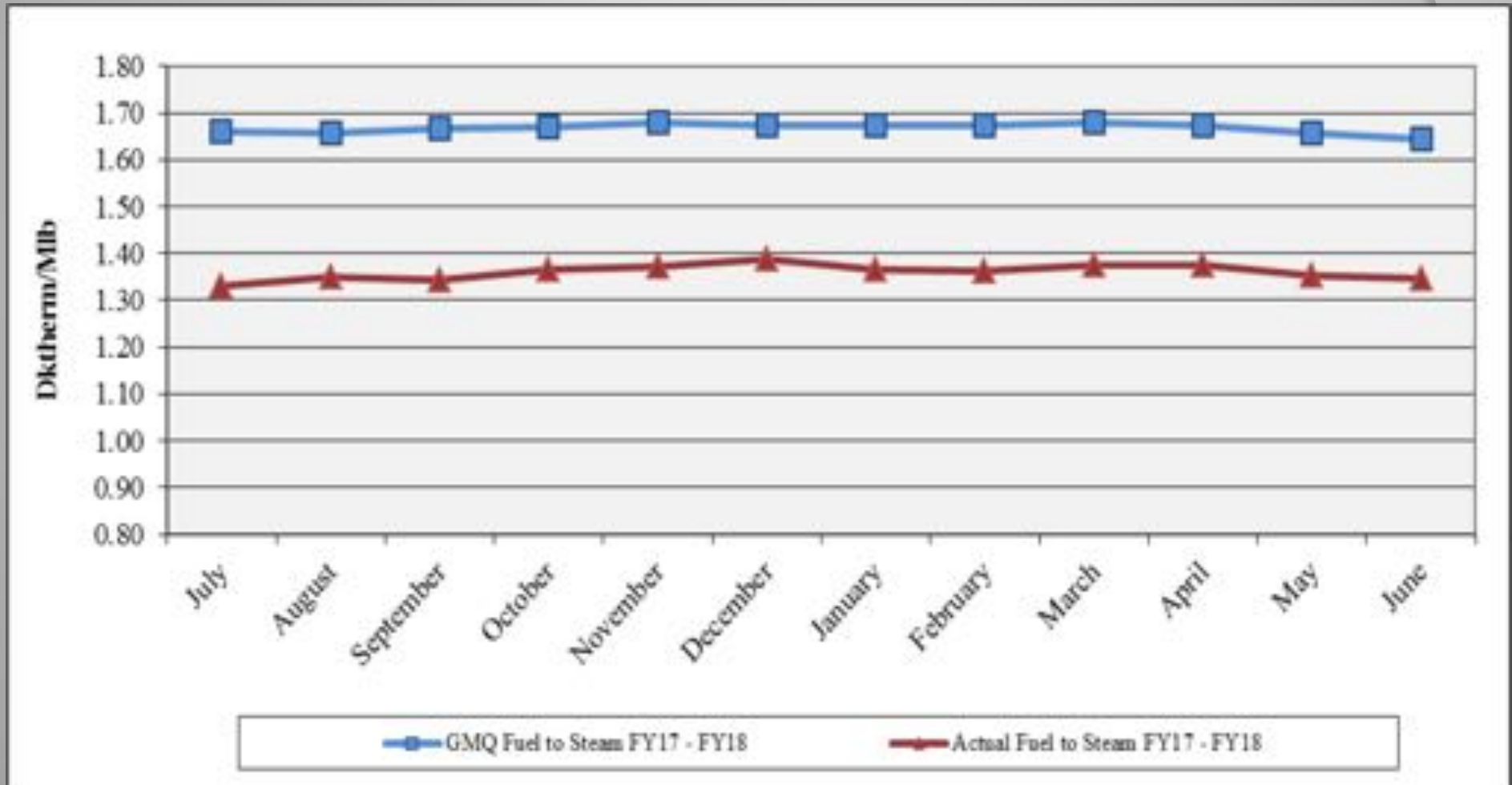
Contractor (CNE) is in compliance with their contractual obligations for FY18 to date.

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

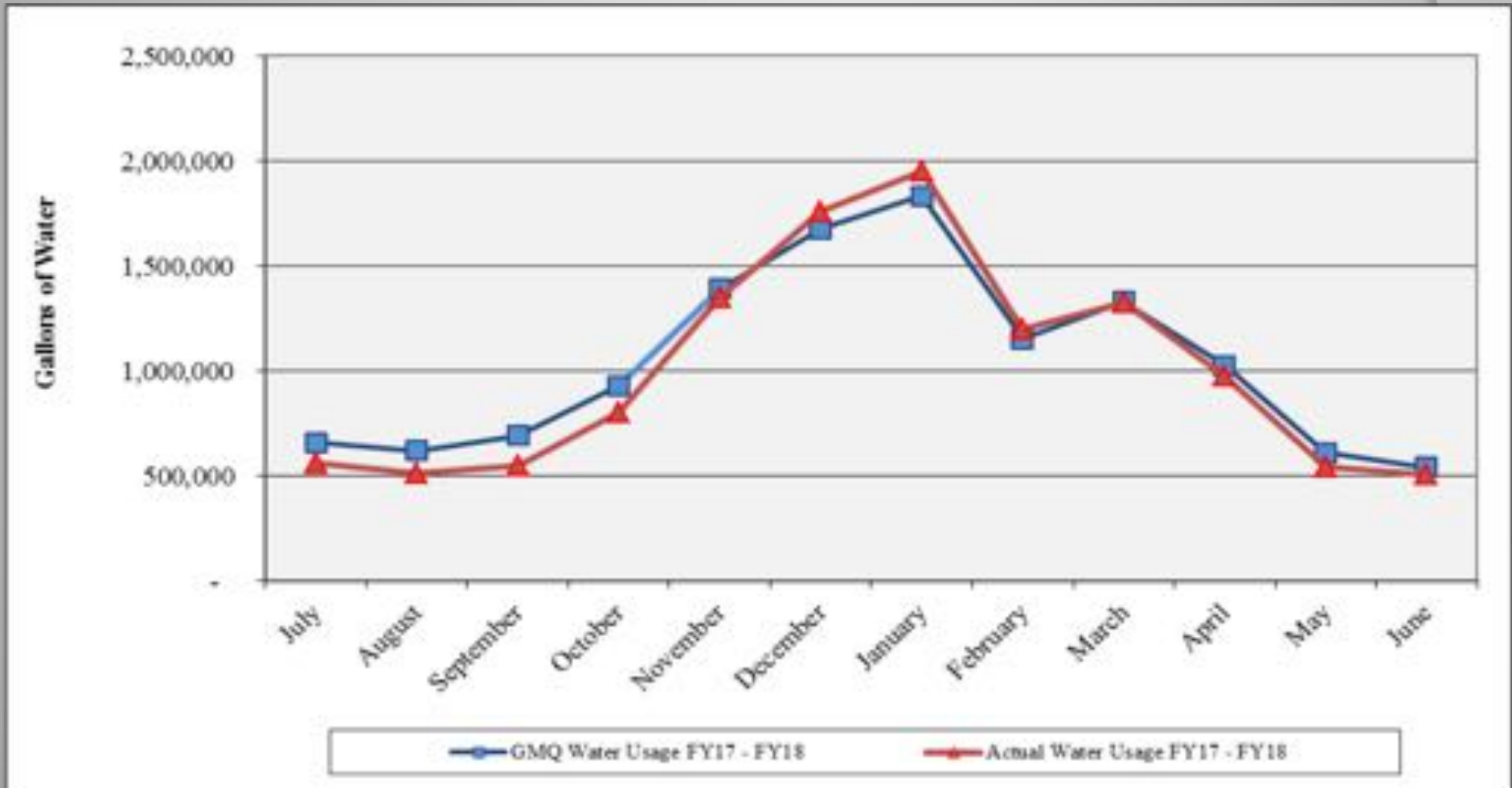
Performance Measurement FY18: Steam Electric Conversion ●



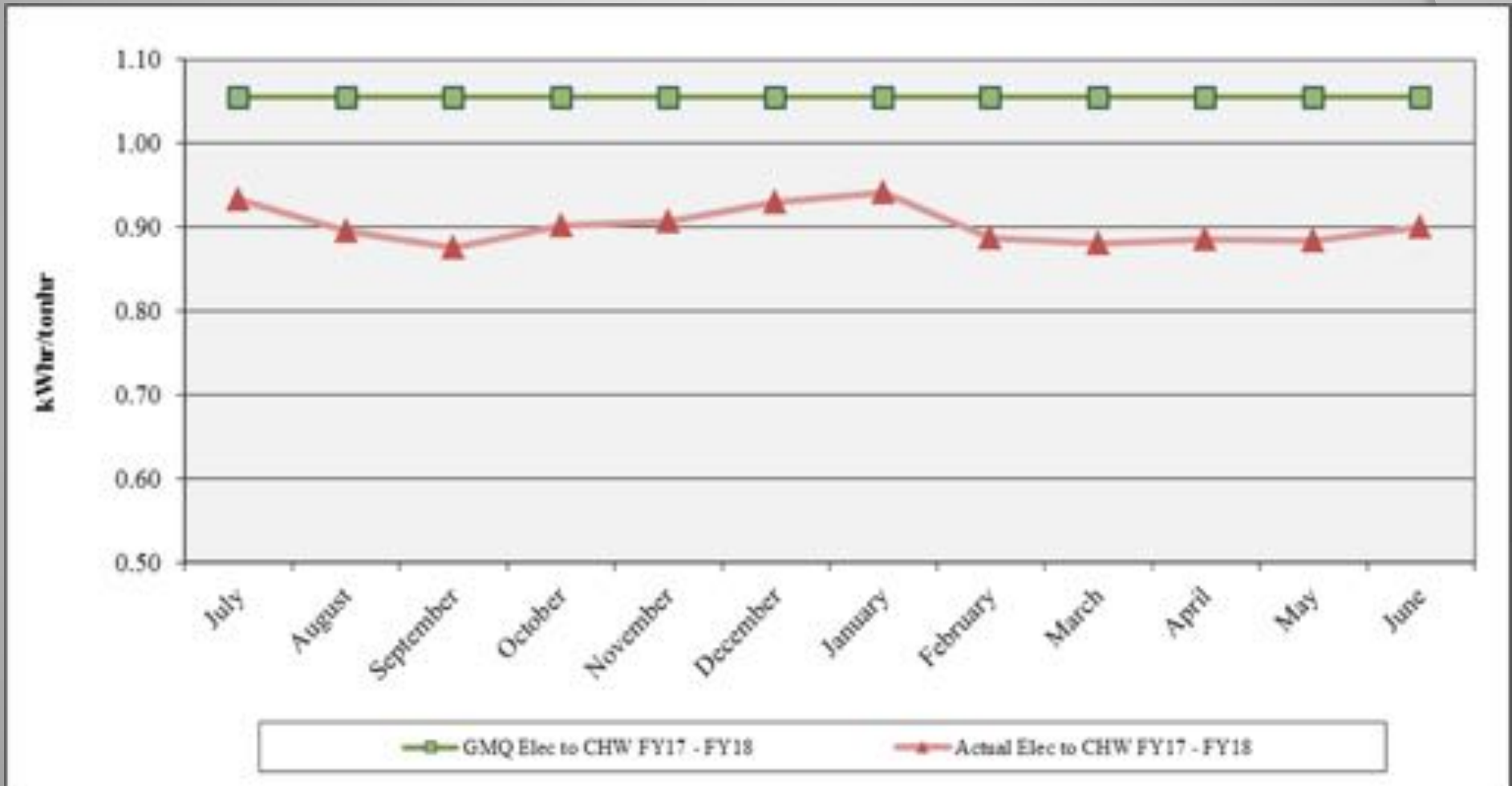
Performance Measurement FY18: Steam Plant Efficiency



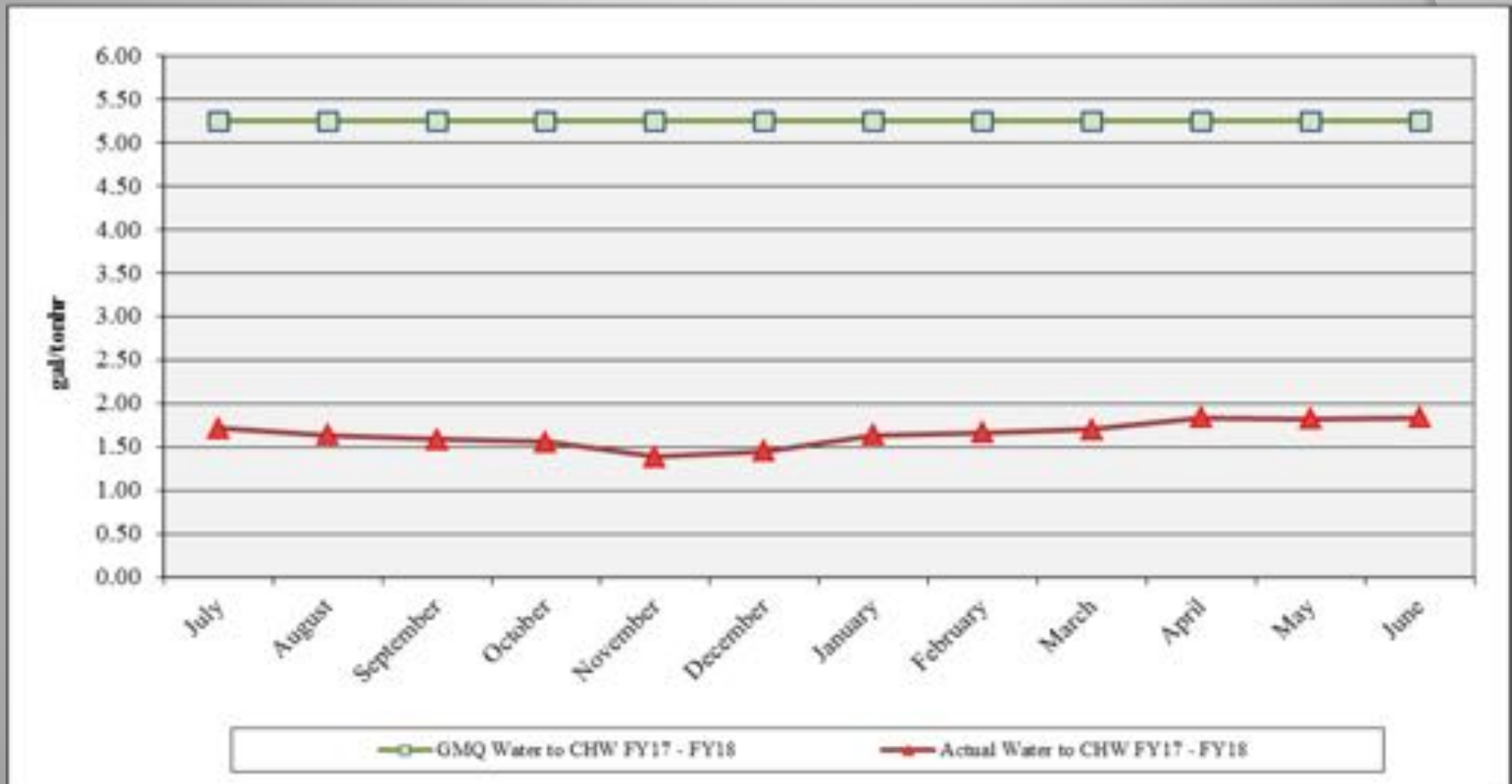
Performance Measurement FY18: Steam Water Conversion ●



Performance Measurement FY18: CHW Electric Conversion



Performance Measurement FY18: CHW Water Conversion ●





Water Treatment

- ❖ Steam and Condensate ●
 - ❖ Corrosion
 - ❖ Iron
 - ❖ Hardness
 - ❖ Chlorine/Sulfite
- ❖ Condensing Water ●
 - ❖ Conductivity
 - ❖ Biologicals
- ❖ Chilled Water ●
 - ❖ Hardness
 - ❖ Corrosion
 - ❖ EGF and Customer Biologicals Good
 - ❖ Deposits – CNE Added Dispersant Q1FY18



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 ●

5. Natural Gas Purchasing

- ❖ Natural Gas Purchasing Review
 - ❖ Table 5: FY18 Gas Spending & Budget Comparison
 - ❖ Figure 5: Actual and Projected Gas Cost Comparison

Table 5: FY18 Gas Spending & Budget Comparison

	Actual FY18 To date (June 30)	Budget FY18	Percent Difference
Steam Sendout (Mlbs)	427,398	412,256	3.7%
Fuel Use (Dth) (includes propane) ●	583,510	601,081	-2.9%
Plant Eff (Dth/Mlb) ●	1.365	1.458	-6.4%
Total Gas Cost (includes propane) ●	\$2,023,721	\$2,345,418	-13.7%
Unit Cost of Fuel (\$/Dth) ●	\$3.468	\$3.902	-11.1%

Excludes consultant fees and FEA and budget contingency; Includes transportation and actual propane costs

Figure 5. Actual and Projected Gas Cost Comparison History



6. FY18 Costs to Date

Item	FY17 Actual	FY18 Budget	FY18 Actual to date	Percent of FY18 Budget
FOC's	\$ 4,559,300	\$ 4,695,900	\$ 4,664,100	99.32%
Pass Throughs				
Non-Energy	\$ 1,375,000	\$ 1,114,300	\$ 988,700	88.73%
Water/Sewer	\$ 607,200	\$ 649,300	\$ 646,700	99.60%
Natural Gas Base	\$ 1,912,500	\$ 2,565,500	\$ 2,217,600	86.44%
Natural Gas Contingency	\$ -	\$ 787,200	\$ -	0.00%
Electricity	\$ 5,400,400	\$ 6,002,100	\$ 5,403,200	90.02%
ORF Deposit	\$ -	\$ -	\$ -	
Debt Service	\$ 5,525,000	\$ 5,473,800	\$ 5,473,800	100.00%
Total Expenses	\$ 19,379,400	\$ 21,288,100	\$ 19,394,100	91.10%
Total Revenues	\$ 17,626,400	\$ 19,597,800	\$ 17,197,200	87.75%
Metro Funding Amount	\$ 1,753,000	\$ 1,690,300	\$ 1,690,300	100.00%

7. FY19 Budget

Item	FY18 Budget	FY19 Budget	Percent Change From FY18 Budget
FOC's	\$ 4,695,900	\$ 4,804,000	2.30%
Pass Throughs			
Non-Energy	\$ 1,114,341	\$ 1,140,719	2.37%
Water/Sewer	\$ 649,300	\$ 751,900	15.80%
Natural Gas Base	\$ 2,565,500	\$ 2,173,300	-15.29%
Natural Gas Contingency	\$ 787,159	\$ 816,381	3.71%
Electricity	\$ 6,002,100	\$ 5,685,900	-5.27%
ORF Deposit	\$ -	\$ -	n.a.
Debt Service	\$ 5,473,800	\$ 5,420,200	-0.98%
Total Expenses	\$ 21,288,100	\$ 20,792,400	-2.33%
Total Revenues	\$ 19,597,800	\$ 19,152,100	-2.27%
Metro Funding Amount	\$ 1,690,300	\$ 1,640,300	-2.96%

8. *Capital Expenditure Update*

	Spent to End of FY17	FY18 Spending	Balance to Date (06/30/18)
R&I Projects	\$3,155,808	\$197,275	\$104,285
49109-2010 Bond	\$2,491,290	\$23,973	\$107,917
49107-DES Infrastructure Fund	\$7,387,802	\$1,061,691	\$33,795
Total	\$13,034,900	\$1,282,940	\$245,997

Total does not include the remaining balance for fund 49116 for the DES CHP Project

Capital Projects Review

Active Capital Projects

- DES 124: CJC Redevelopment – Bldg under construction; AA Birch Tunnel repairs needed – postponed until building roof is constructed
- DES 124.4: CJC Reconnection – Reconnection complete; awaiting instrument installation by contractor – service expected July 2018
- DES 133: 5th and Broadway Development – Draft contract issued to OM for review; Easement in place
- DES 133.1: Repairs needed due to blasting; proposed NES vault in Broadway will impact Broadway Tunnel
- DES 133.2: Stand-by Equip (rental chillers and boiler) at Bridgestone Arena completed
- DES 133.3: Tunnel Reinforcement – Completed in December



Capital Projects Review

Active Capital Projects - continued

- DES 135: CHW Leak at 5th Ave and Union – Discovered chilled water near 3rd & Charlotte; leak repaired; still looking for leak near JK Polk Bldg
- DES 139: DES Options Review – FVB to provide report discussion
- DES 143: Manholes N1, N2 and S6 Insulation and Repair – on hold
- DES 144: Manhole 6 Repair – Piping structural steel replacement, cleaning, and painting; Pre-Bid meeting to take place early in 1st Qtr FY19 with bids to follow
- DES 147: 3rd Ave Insulation Repair – utility contractor damaged DES steam piping insulation; work completed during 4th Qtr FY18; cost substantiation being reviewed; DES to be reimbursed
- DES 148: Site I Development – Blasting to begin May 2018 and end Sept 2018; blasting mitigation/monitoring; Emergency Plan in place
- DES 149: 1st and Molloy Hot Spot; repairs completed during 4th Qtr FY18; cost substantiation being reviewed
- DES 150: Federal Courthouse and 7th Ave Tunnel – Potential for damage to DES tunnel due to blasting; blasting expected to begin in September; awaiting meeting with contractor to review blasting plan; Emergency Plan in place

Capital Projects Review

Capital Projects in Close-out/Closed

- DES-146: Ryman Steam Meter Replacement



9. *FVB Report Discussion*

DES-139

- FVB to provide report discussion at conclusion of this presentation

10. Other Board Member Items

11. Adjourn

- *Advisory Board Meeting Schedule*
- FY19 – 1st Quarter Meeting – November 15, 2018
- FY19 – 2nd Quarter Meeting – February 21, 2019
- FY19 – 3rd Quarter Meeting – May 16, 2019
- FY19 – 4th Quarter Meeting – August 15, 2019