



Metro Nashville
DISTRICT ENERGY SYSTEM

DES Advisory Board Meeting
Third Quarter FY15
May 21, 2015



Agenda

1. Call to Order
2. Review & Approval of Previous Meeting Minutes
3. Customer Sales
4. TIFS Update
5. Review of DES Contractor Performance
6. Natural Gas Purchasing Status
7. FY15 Costs to Date
8. Capital Projects Review & Status
9. Other Board Member Items
10. Adjourn



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

3. *Customer Sales*

- ❖ Table 3A: Customer Cost Comparison

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Apr 2013 - Mar 2014	Apr 2014 - Mar 2015	% Diff.	Apr 2013 - Mar 2014	Apr 2014 - Mar 2015	% Diff.
Private	Cost	\$ 1,483,949	\$ 1,515,809	2.15%	\$ 3,280,829	\$ 3,455,202	5.31%
	Usage (lbs or tonhrs)	92,899,687	96,247,402	3.60%	17,085,057	16,957,135	-0.75%
	Unit Cost	\$ 15.97	\$ 15.75	-1.4%	\$ 0.192	\$ 0.204	6.1%
State	Cost	\$ 2,114,416	\$ 2,100,201	-0.67%	\$ 3,280,775	\$ 3,316,303	1.08%
	Usage (lbs or tonhrs)	121,369,414	119,743,240	-1.34%	15,422,519	13,916,501	-9.77%
	Unit Cost	\$ 17.42	\$ 17.54	0.7%	\$ 0.213	\$ 0.238	12.0%
Metro	Cost	\$ 2,797,364	\$ 2,581,398	-7.72%	\$ 5,277,441	\$ 5,550,143	5.17%
	Usage (lbs or tonhrs)	198,953,156	170,815,595	-14.14%	29,794,610	28,295,720	-5.03%
	Unit Cost	\$ 14.06	\$ 15.11	7.5%	\$ 0.177	\$ 0.196	10.7%
Aggregate	Cost	\$ 6,469,935	\$ 6,326,148	-2.22%	\$ 11,839,045	\$ 12,431,041	5.00%
	Usage (lbs or tonhrs)	416,787,726	392,641,651	-5.79%	62,302,186	59,743,570	-4.11%
	Unit Cost	\$ 15.52	\$ 16.11	3.8%	\$ 0.190	\$ 0.208	9.50%

MFA not included in values shown

4. TIFS Update

- ❖ Figure 4A: FY14-FY15 Customer TIFS
- ❖ Table 4A: Lowest Performing Buildings
- ❖ Table 4B: Best Performing Buildings
- ❖ Caveats for following data:
 - ❖ 401 Union Bldg has no CHW service
 - ❖ St Mary's Church has no CHW meter
 - ❖ Central Services is metered from John Sevier
 - ❖ TSU has no CHW service
 - ❖ Legislative Plaza is metered from War Memorial

Figure 4A: FY14-FY15 Customer TIFS

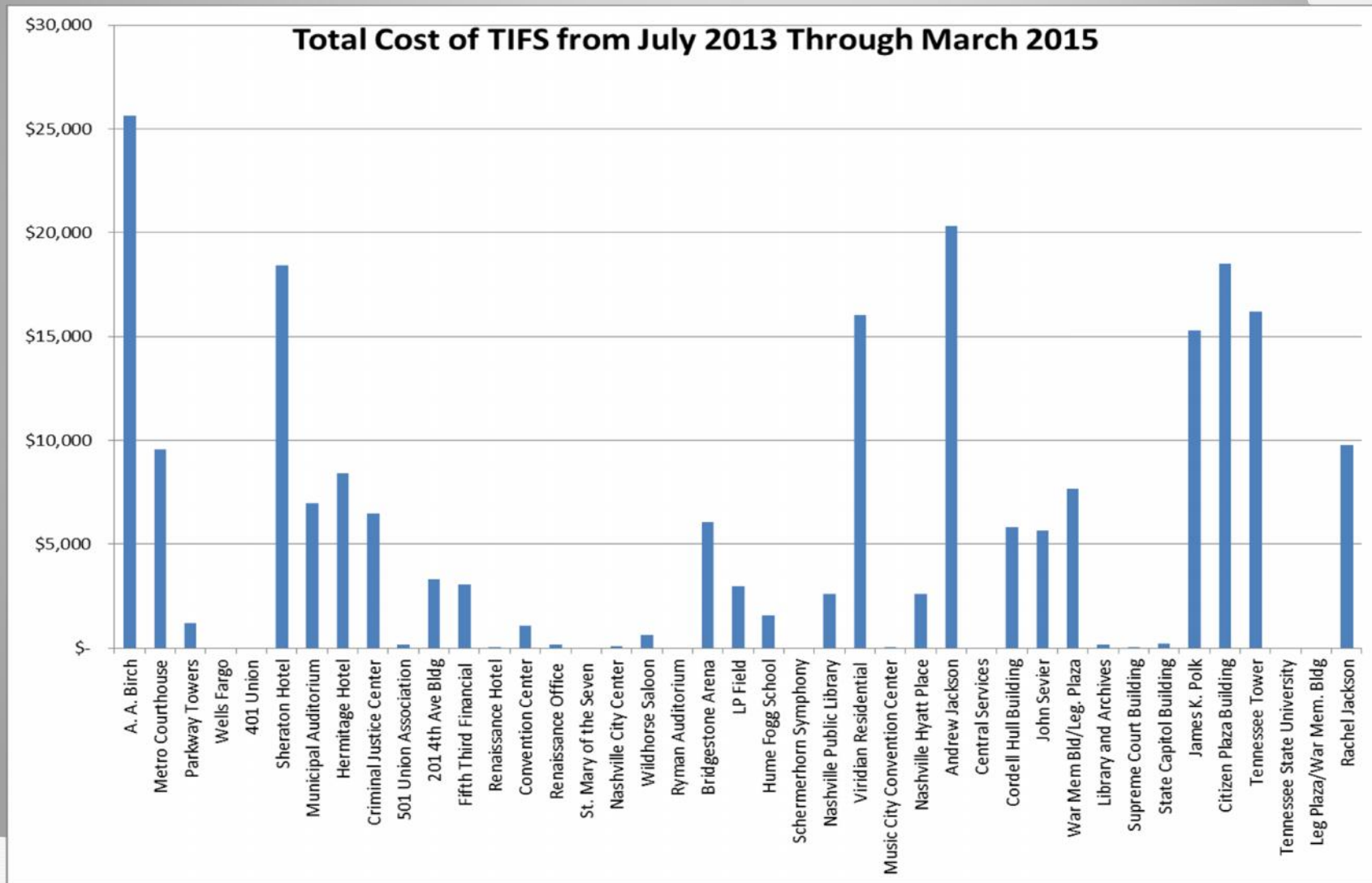


Table 4A: Lowest Performing Buildings

Top Ten Worst TIFS Customers					
Rank	Most Dollars Paid	Highest Delta T Variance	Contract Delta T	Average Variance 7/13 - 3/15	Average Delta T
1	AA Birch (M)	AA Birch (M)	14	7.8	6.2
2	Andrew Jackson (S)	Viridian (P)	14	7.4	6.6
3	Citizen's Plaza (S)	Sheraton Hotel (P)	12	6.5	5.5
4	Sheraton Hotel (P)	Hermitage (P)	12	6.5	5.5
5	TN Tower (S)	Metro Courthouse (M)	14	6.5	7.5
6	Viridian (P)	Citizen's Plaza (S)	14	5.9	8.1
7	James K Polk (S)	Rachel Jackson (S)	9.5	5.6	3.9
8	Rachel Jackson (S)	Andrew Jackson (S)	9.5	4.5	5
9	Metro Courthouse (M)	Municipal Auditorium (M)	10	4.4	5.6
10	Hermitage (P)	Criminal Justice Ctr (M)	12	3.5	8.5

“Top 10 Most Dollars Paid Customers” account for 73% of total TIFS paid over period.

Table 4B: Best Performing Buildings

Top Ten Best TIFS Customers				
Rank	Lowest Delta T Variance	Contract Delta T	Average Variance 7/13 - 3/15	Average Delta T
1	Well's Fargo (P)	8	-4.5	12.5
2	Ryman Auditorium (P)	8	-2.7	10.7
3	State Library and Arch (S)	6	-2.1	8.1
4	State Supreme Court (S)	8	-1.9	9.9
5	Music City Center (M)	12	-1.8	13.8
6	Renaissance Office (P)	9	-1.6	10.6
7	Renaissance Hotel (P)	7	-1.3	8.3
8	State Capitol (S)	7	-1	8
9	Nashville City Center (P)	9	-0.8	9.8
10	Metro Convention Center (M)	7.2	-0.5	7.7




TIFS Calculation

$$\frac{(\Delta T_{contract} - \Delta T_{average}) * Capacity_{CHW}}{100} = TIFS$$

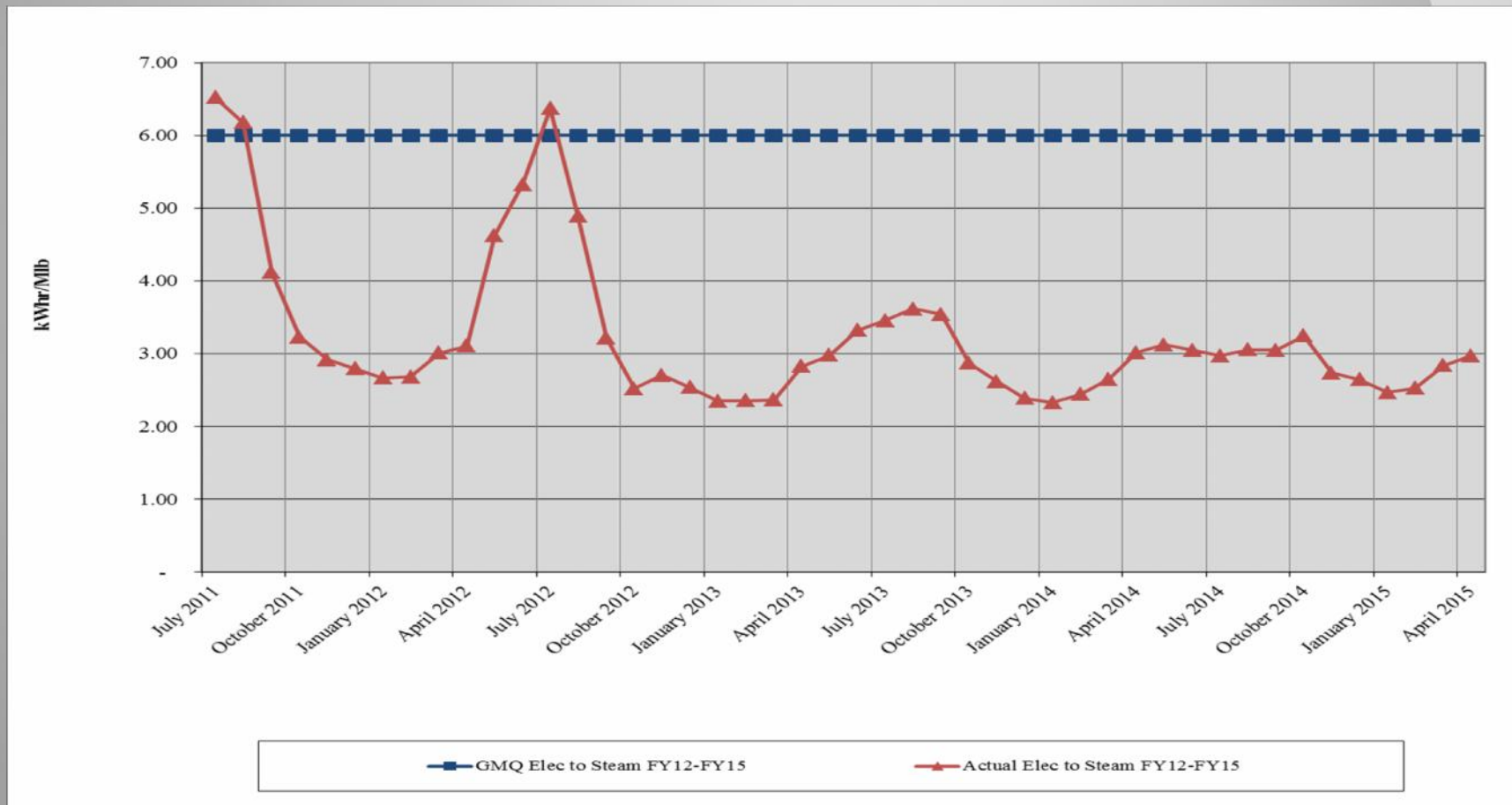
If $(\Delta T_{contract} - \Delta T_{average}) < 0, TIFS = \0

5. Review of DES Contractor Performance

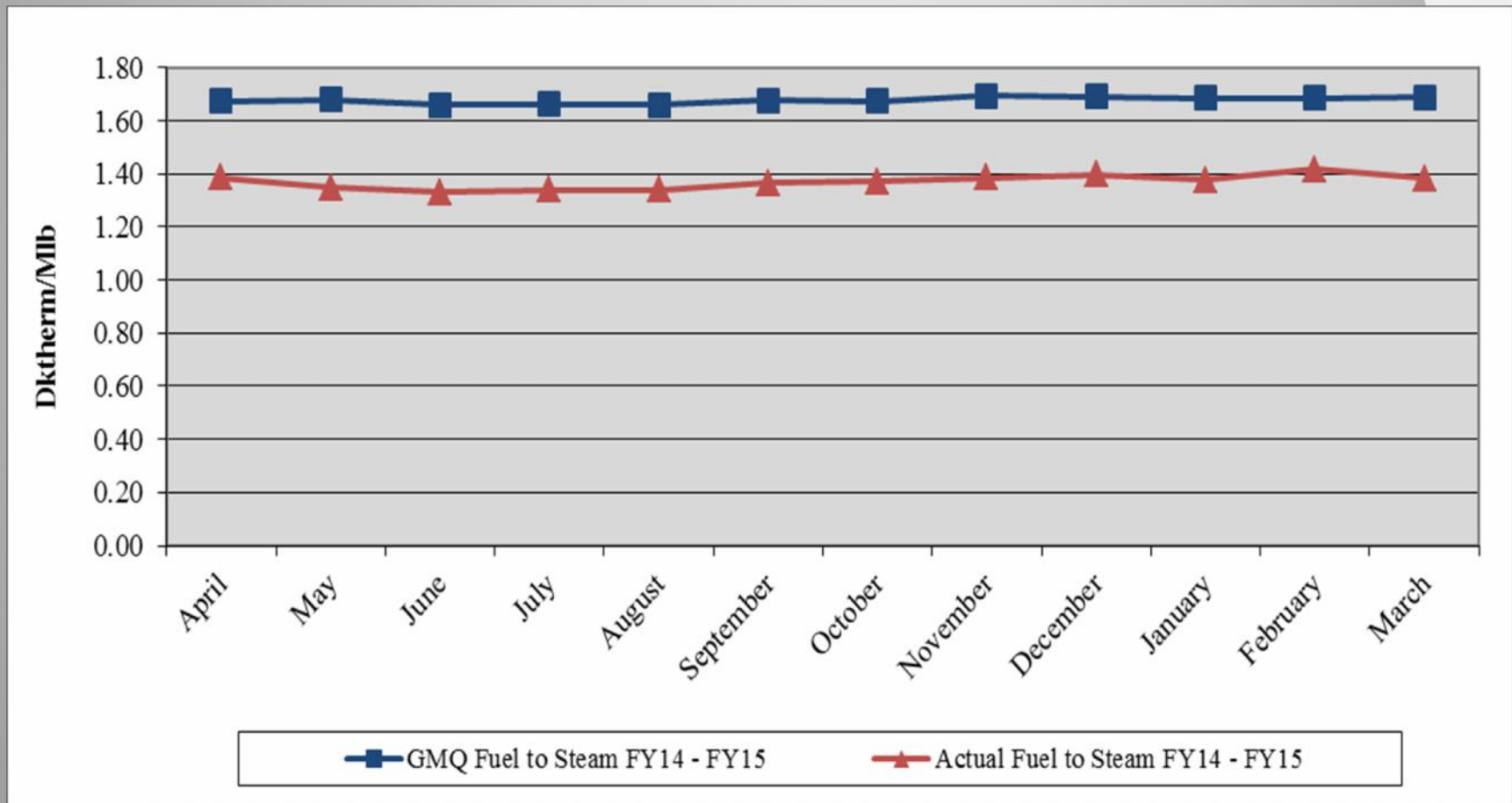
Contractor (CNE) is in compliance with their contractual obligations for FY15.

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

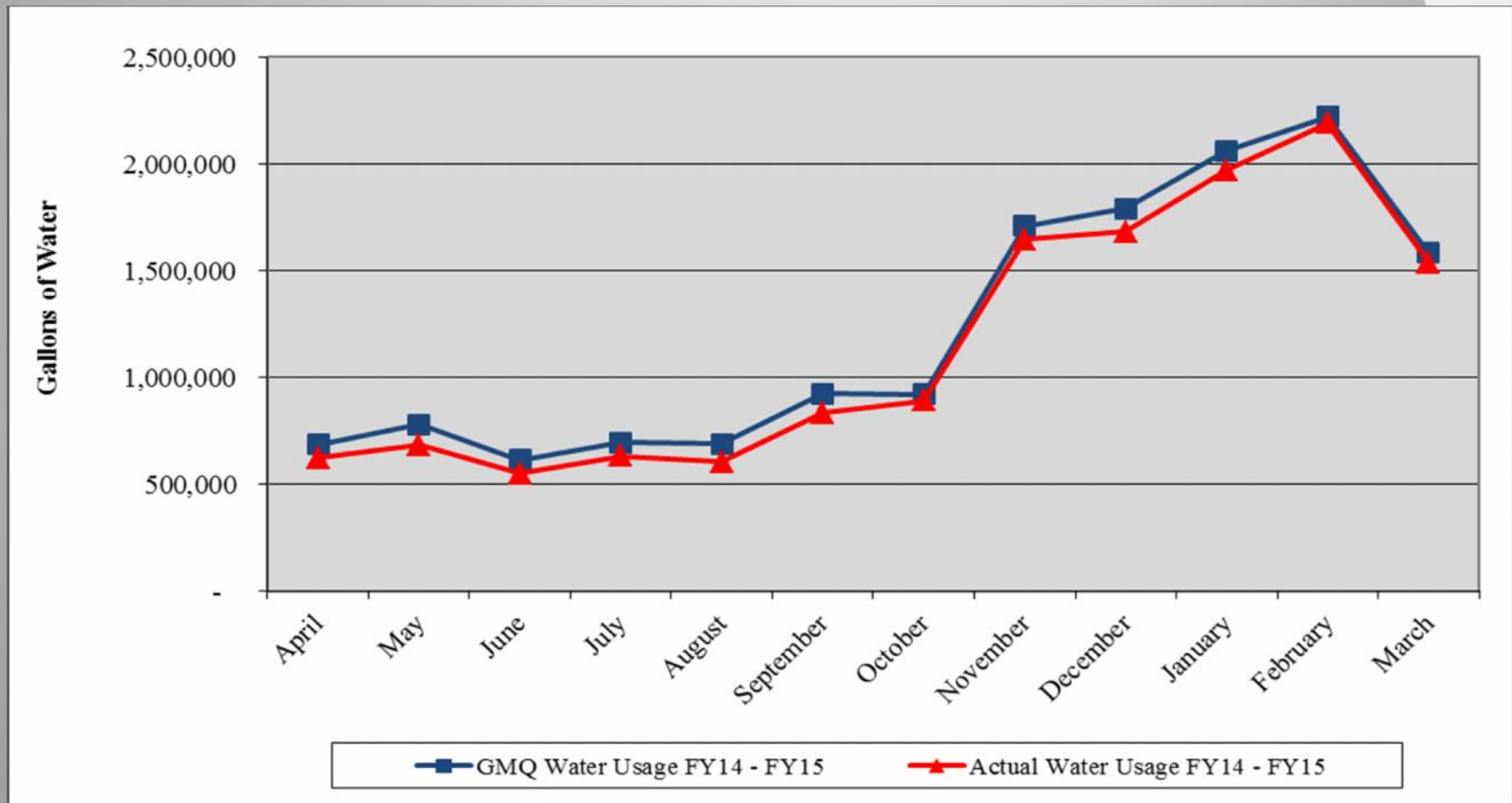
Performance Measurement FY12-FY15: Steam Electric Conversion



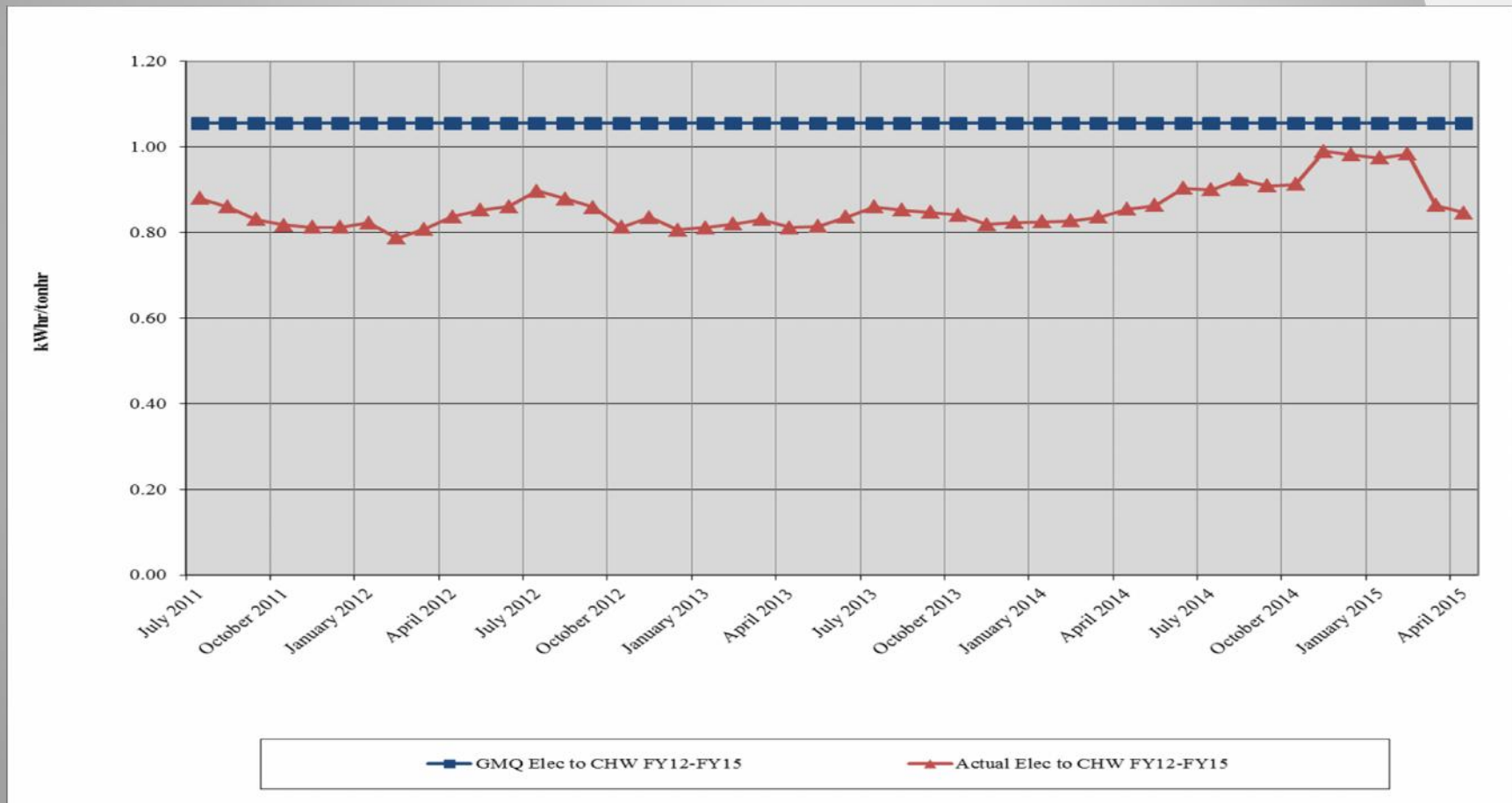
Performance Measurement FY15: Steam Plant Efficiency



Performance Measurement FY15: Steam Water Conversion

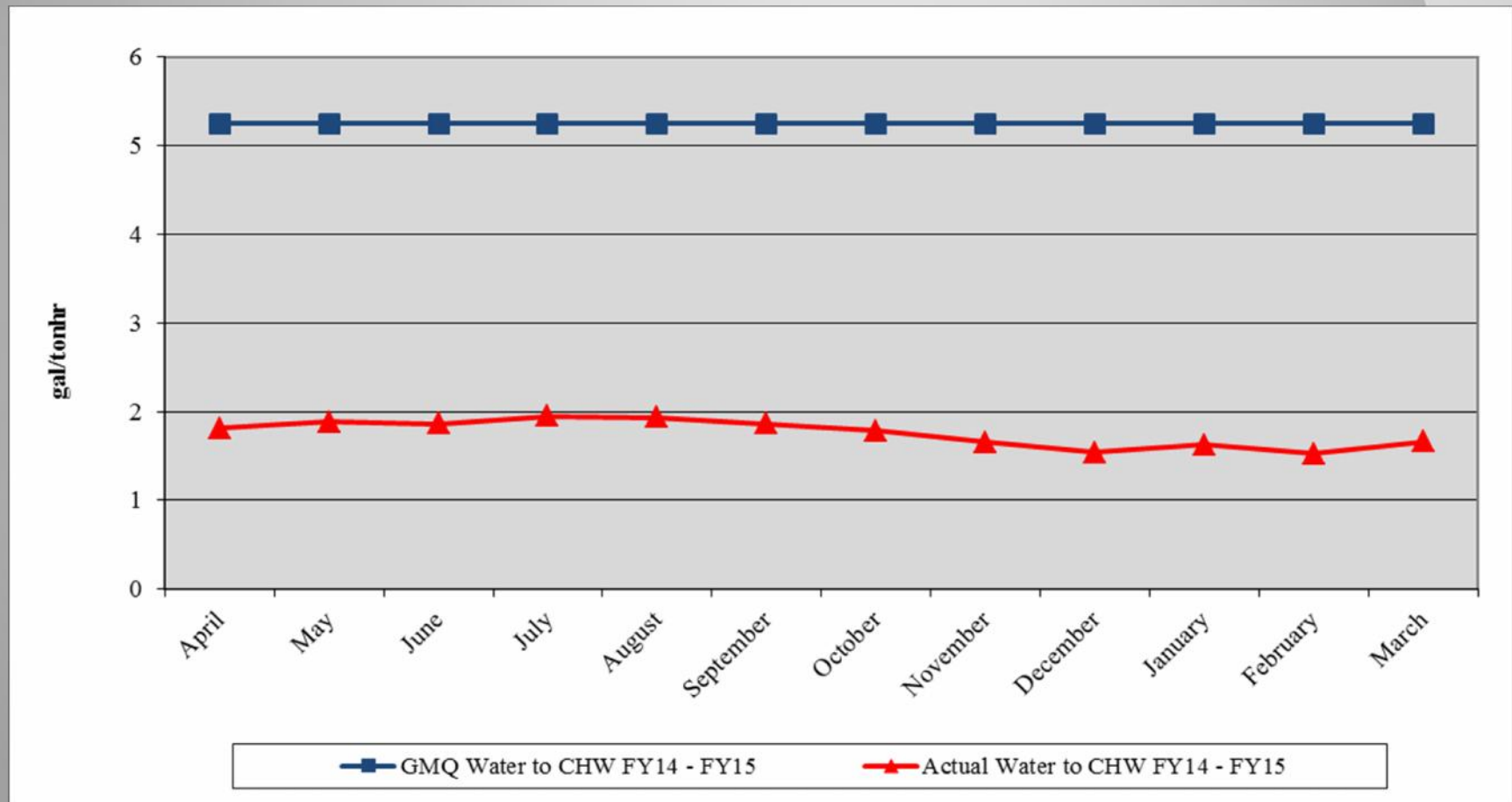


Performance Measurement FY12-FY15: CHW Electric Conversion



Performance Measurement FY15: 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: FY15 Gas Spending & Budget Comparison
 - ❖ Figure 6: Actual and Projected Gas Cost Comparison

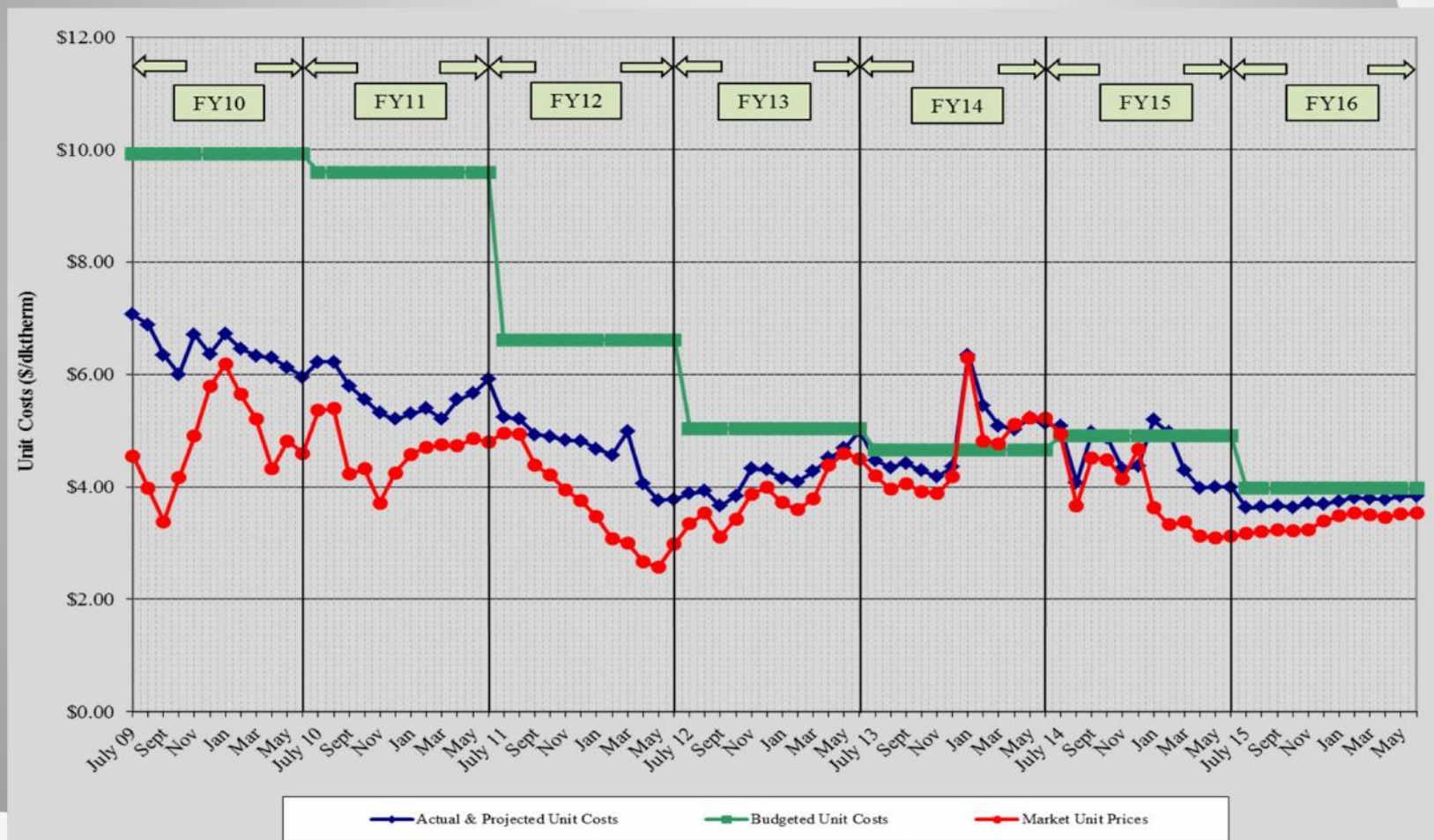
Table 6: FY15 Gas Spending & Budget Comparison

		Actual FY15 To date (Mar 31)	Budget FY15	Percent Difference
Steam Sendout (Mlbs)		370,822	366,120	1.3%
Fuel Use (Dth) (includes propane)	●	512,675	508,540	0.8%
Plant Eff (Dth/Mlb)	●	1.383	1.389	-0.4%
Total Gas Cost (includes propane)	●	\$2,475,288	\$2,492,357	-0.7%
Unit Cost of Fuel (\$/Dth)	●	\$4.828	\$4.901	-1.5%

Excludes consultant fees and FEA and budget contingency;

Includes transportation and propane costs

Figure 6. Actual and Projected Gas Cost Comparison History



7. FY15 Costs to Date

Item	FY14 Actual	FY15 Budget	FY15 Actual to date	Percent of FY15 Budget
FOC's	\$ 4,459,927	\$ 4,606,800	\$ 3,399,057	73.78%
Pass Throughs				
Non-Energy	\$ 1,082,270	\$ 1,190,567	\$ 971,962	81.64%
Water/Sewer	\$ 485,337	\$ 724,600	\$ 388,972	53.68%
Natural Gas Base	\$ 3,354,335	\$ 2,972,673	\$ 2,488,048	83.70%
Natural Gas Contingency	\$ -	\$ 635,260	\$ -	0.00%
Electricity	\$ 5,225,956	\$ 6,574,600	\$ 3,972,823	60.43%
Debt Service	\$ 5,705,732	\$ 5,470,700	\$ 5,098,838	93.20%
Total Expenses	\$ 20,313,558	\$ 22,175,200	\$ 16,319,700	73.59%
Total Revenues	\$ 18,396,977	\$ 20,325,700	\$ 14,097,148	69.36%
Metro Funding Amount	\$ 1,916,581	\$ 1,849,500	\$ 1,387,125	75.00%

8. *Capital Expenditure Update*

	Spent to End of FY14	FY15 Spending	Balance to Date (04/22/15)
R&I Projects	\$2,293,259	\$78,551	\$368,148
49109-2010 Bond	\$1,891,257	\$397,692	\$336,967
49107-Customer Connection Fund	\$6,575,530	\$81,380	\$1,850,019
Total	\$10,760,046	\$557,623	\$2,555,134

Capital Projects Review

Active Capital Projects

- DES 061: MH & Tunnel Steel Corrosion Repair & Prevention – ongoing
- DES 104: TOU – developing TOU invoicing changes
- DES 106: MCH Chilled Water Mods – Phase II awarded; Completion in FY15Q4
- DES 107: West Riverfront Park Manhole Repairs
- DES 110: EGF Alternate Fuels Evaluation – Awaiting Final Report from CNE
- DES 111: EGF Combined Heat and Power – Development Phase
- DES 112: Condensate Repair at Cordell Hull Building (State)

Capital Projects Review

Capital Projects in Close-out

- DES 089: AA Birch Tunnel Repairs
- DES 105: Vertical Tunnel Shaft Repairs at Suntrust Building
- DES 108: 7th Avenue Tunnel Insulation Repairs
- DES 109: Indigo Hotel Sparge Tube



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9. Other Board Member Items

10. *Adjourn*

- *Advisory Board Meeting Schedule*
- FY15 – 4th Quarter Meeting – August 20, 2015
- FY16 – 1st Quarter Meeting – November 19, 2015
- FY16 – 2nd Quarter Meeting – February 18, 2016
- FY16 – 3rd Quarter Meeting – May 19, 2016