



Metro Nashville
DISTRICT ENERGY SYSTEM

DES Advisory Board Meeting
Second Quarter FY19
February 21, 2019



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. FY19 Costs to Date
7. Marketing
8. FY19 Budget Update
9. DES RFP Update
10. Capital Projects Review & Status
11. Other Board Member Items
12. Adjourn



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

3. Customer Sales

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Jan 2017 - Dec 2017	Jan 2018 - Dec 2018	% Diff.	Jan 2017 - Dec 2017	Jan 2018 - Dec 2018	% Diff.
Private	Cost	\$ 1,405,097	\$ 1,512,831	7.67%	\$ 3,545,882	\$ 3,817,880	7.67%
	Usage (lbs or tonhrs)	88,494,451	104,893,733	18.53%	18,042,355	20,121,301	11.52%
State	Cost	\$ 1,714,585	\$ 1,868,790	8.99%	\$ 3,300,469	\$ 3,347,508	1.43%
	Usage (lbs or tonhrs)	95,648,808	123,945,050	29.58%	13,328,752	14,146,753	6.14%
Metro	Cost	\$ 2,001,838	\$ 1,895,606	-5.31%	\$ 5,205,898	\$ 5,141,555	-1.24%
	Usage (lbs or tonhrs)	148,855,220	155,649,051	4.56%	28,071,489	28,732,588	2.36%
Aggregate	Cost	\$ 5,121,519	\$ 5,277,227	3.04%	\$ 12,052,250	\$ 12,306,943	2.11%
	Usage (lbs or tonhrs)	332,998,479	384,487,834	15.46%	59,442,596	63,000,642	5.99%
	Unit Cost	\$ 15.38	\$ 13.73	-10.8%	\$ 0.203	\$ 0.195	-3.65%

MFA not included in values shown; 2nd quarter billing adjustment not included

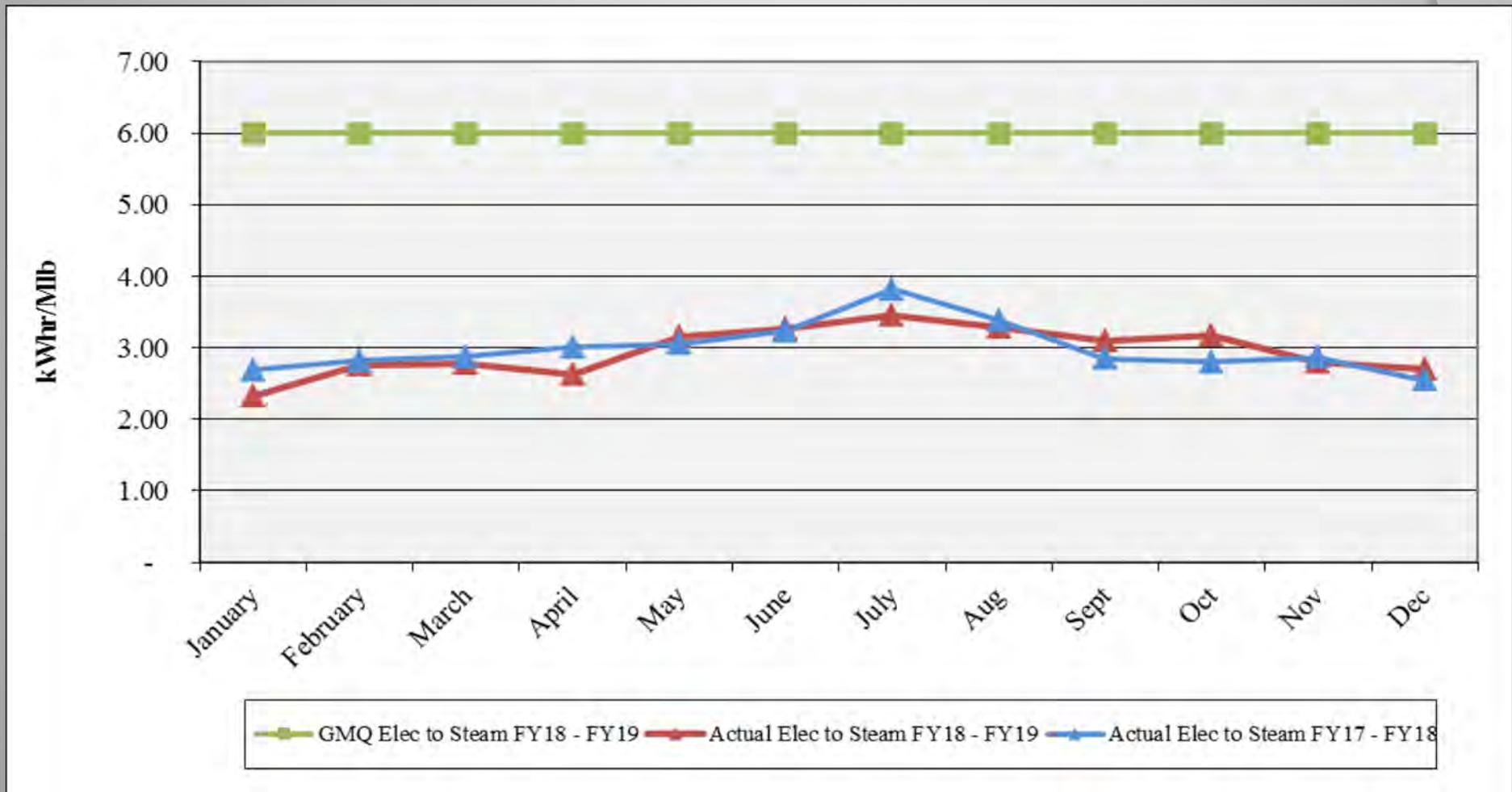


4. *Review of DES Contractor Performance*

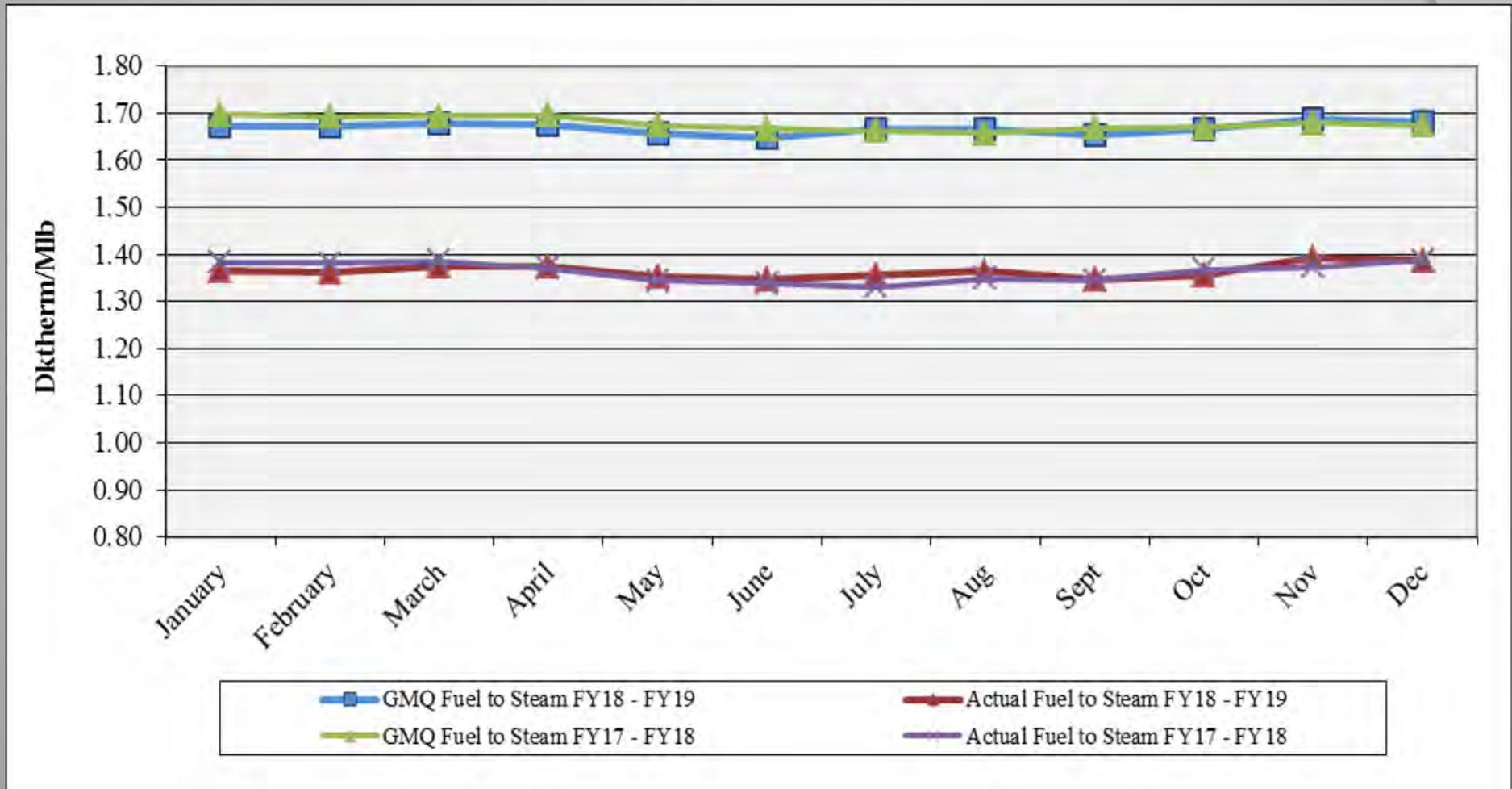
Contractor (CNE) is in compliance with their contractual obligations for FY19 to date.

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

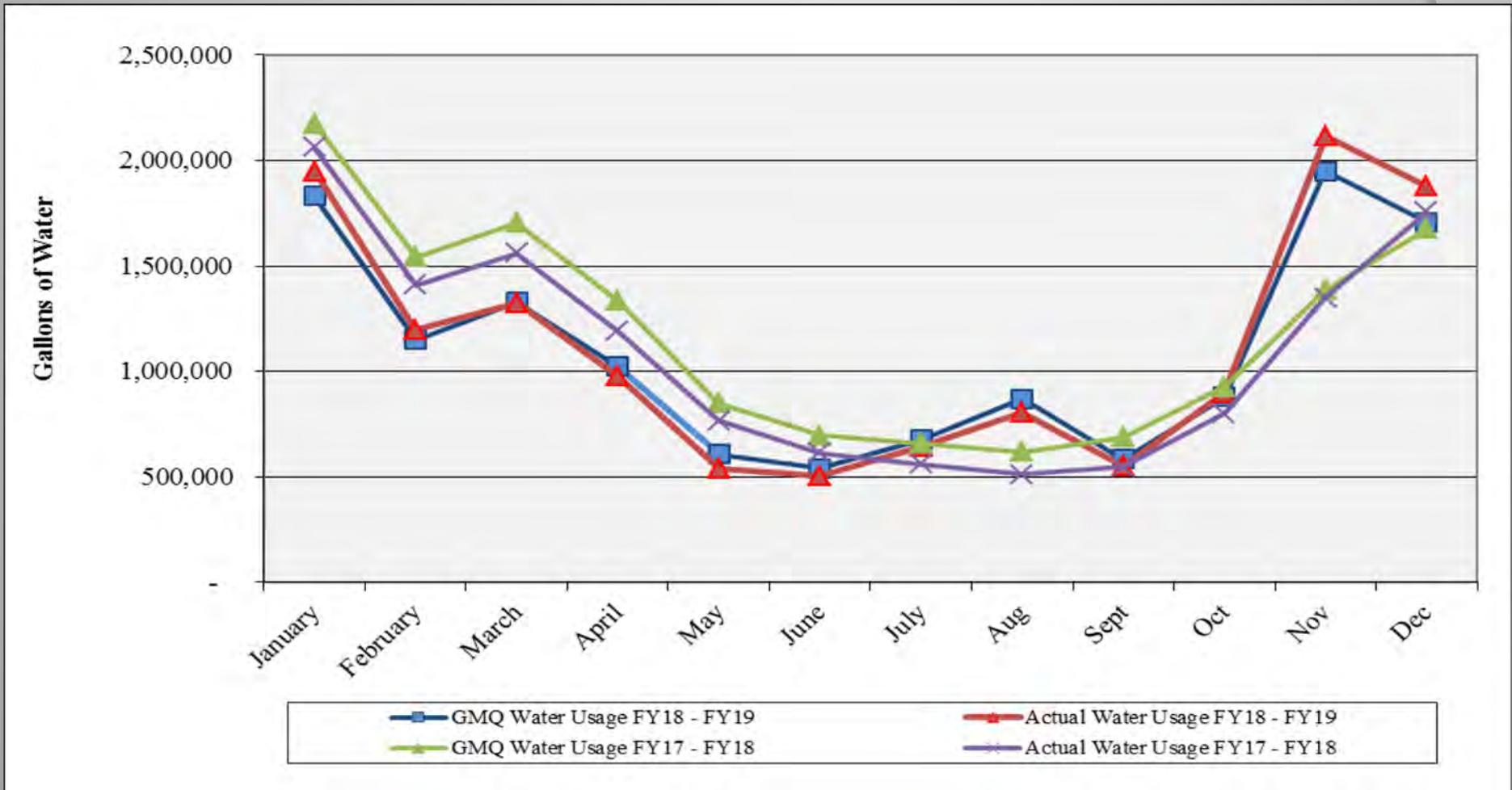
Performance Measurement FY19: Steam Electric Conversion ●



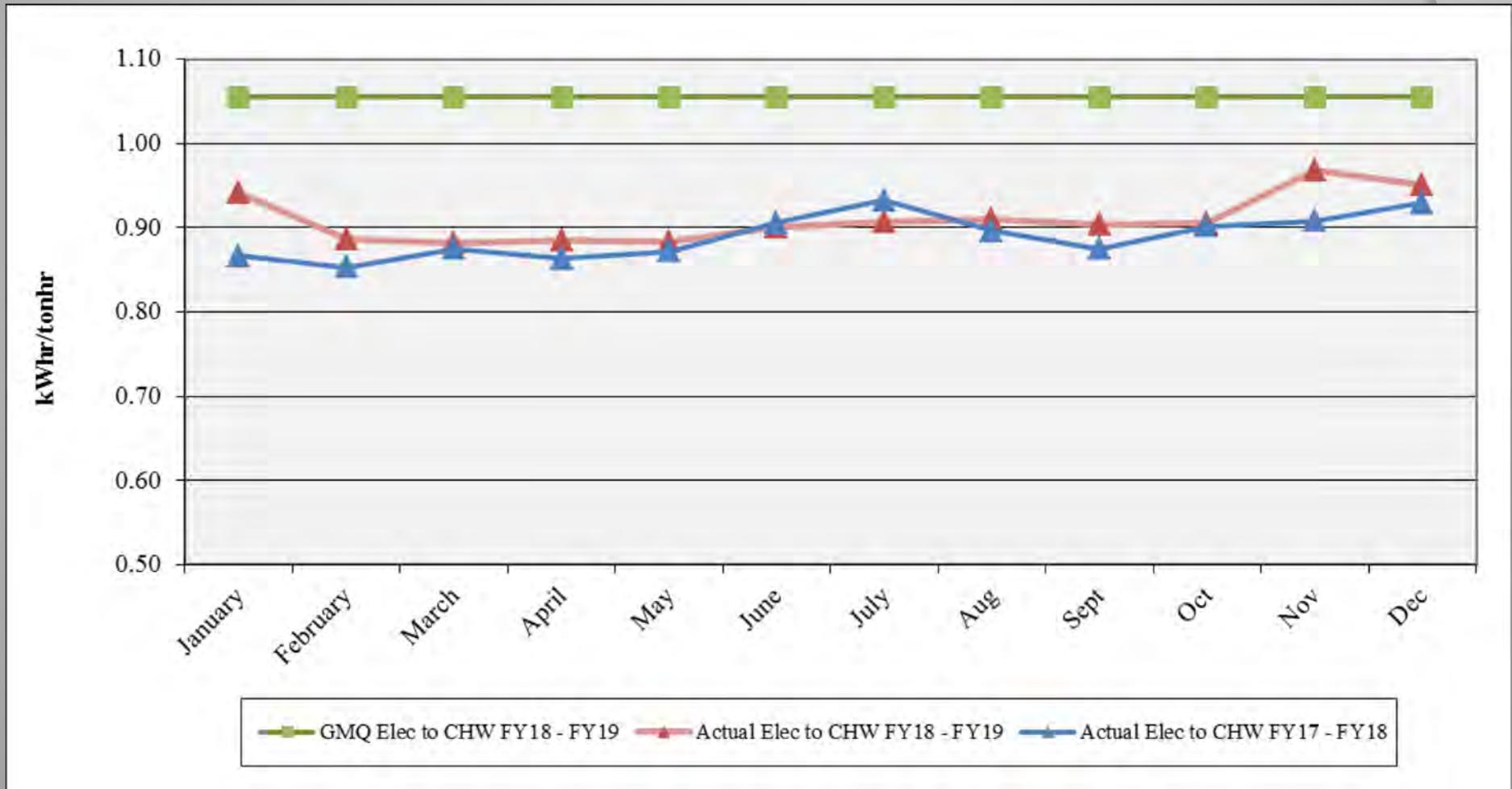
Performance Measurement FY19: Steam Plant Efficiency



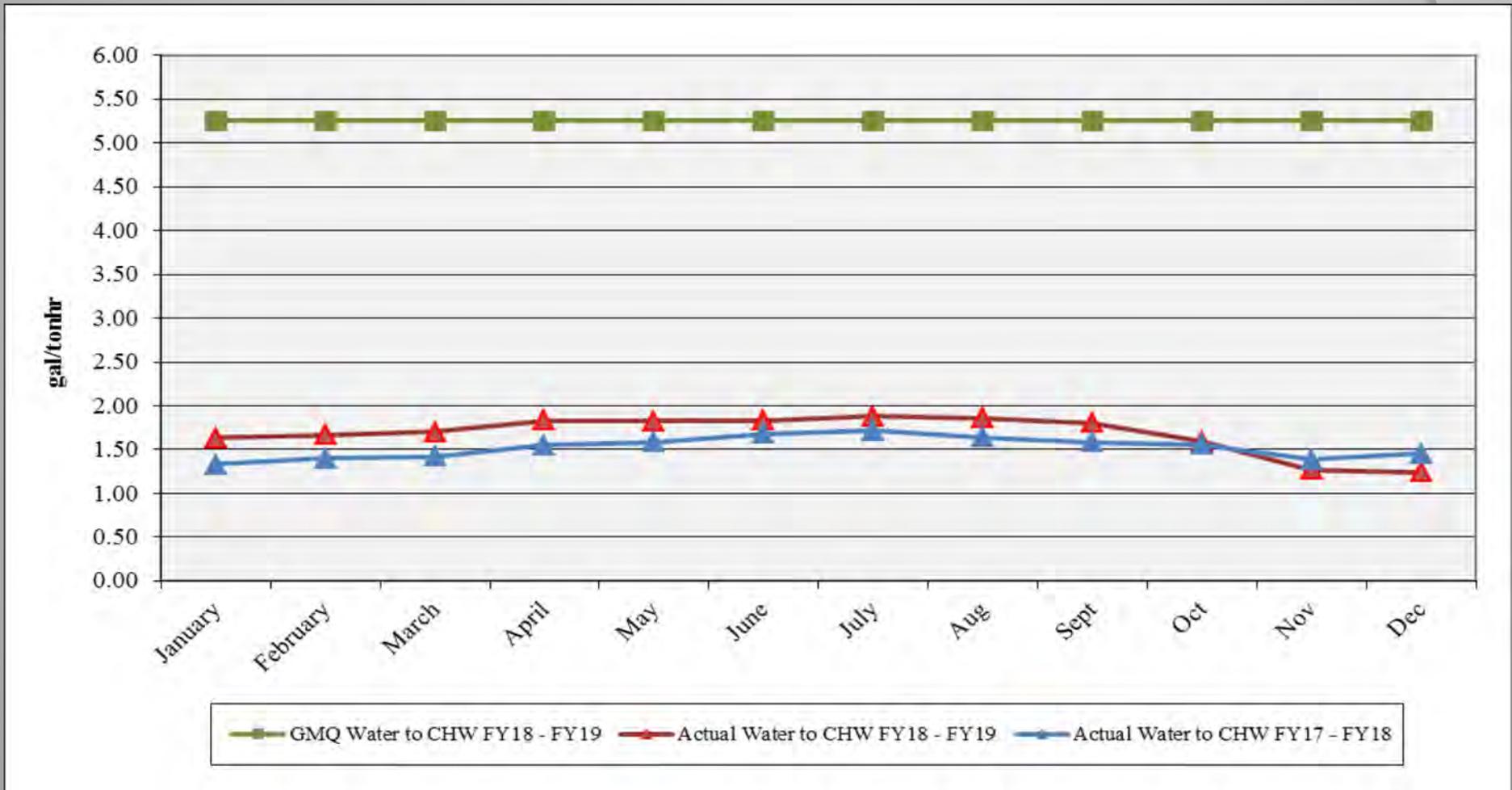
Performance Measurement FY19: Steam Water Conversion ●



Performance Measurement FY19: CHW Electric Conversion



Performance Measurement FY19: 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



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

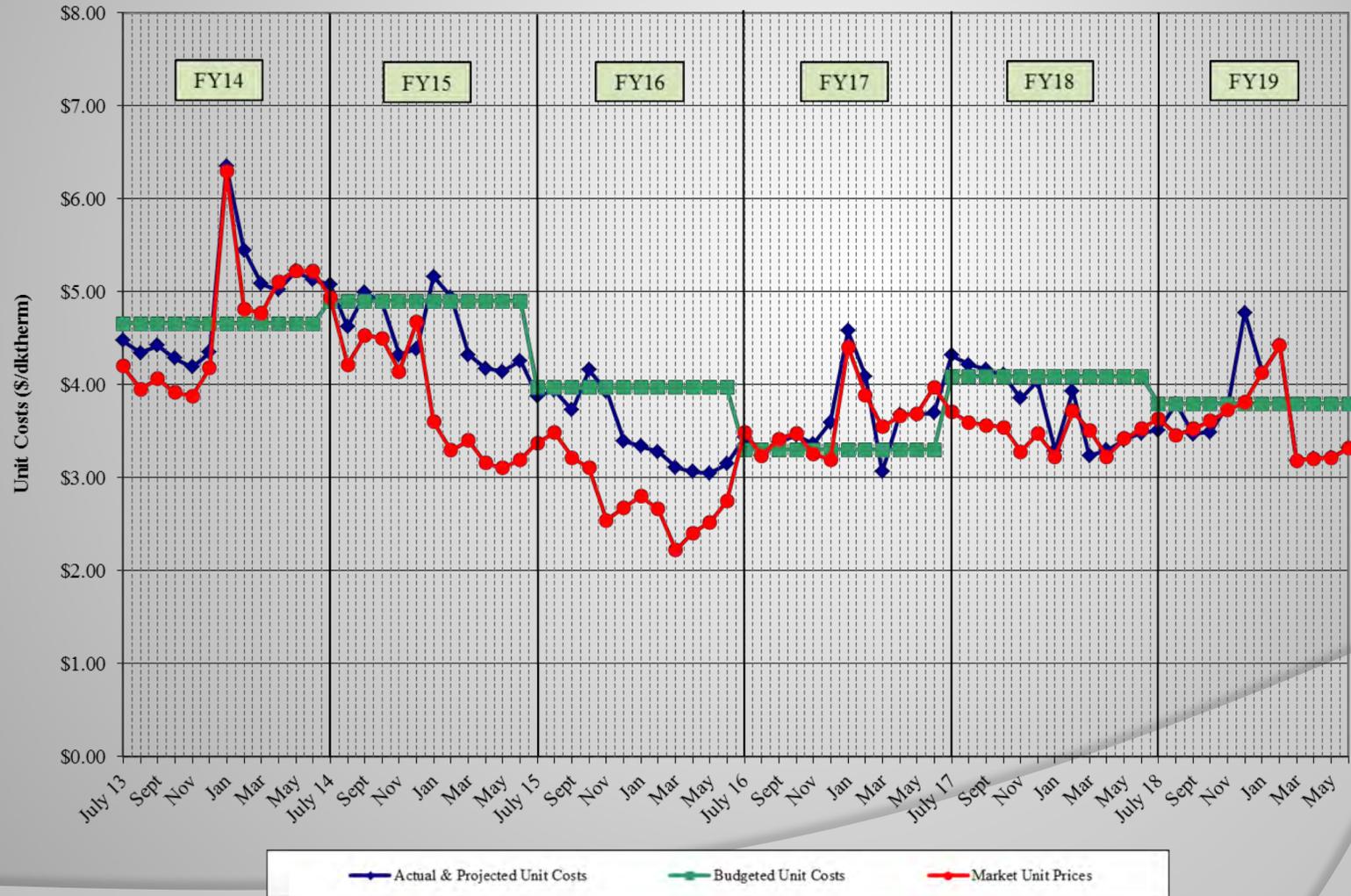
- ❖ Natural Gas Purchasing Review
 - ❖ Table 5: FY19 Gas Spending & Budget Comparison
 - ❖ Figure 5: Actual and Projected Gas Cost Comparison

Table 5: FY19 Gas Spending & Budget Comparison

	Actual FY19 To date (Dec 31)	Budget FY19	Percent Difference
Steam Sendout (Mlbs)	202,081	178,690	13.1%
Fuel Use (Dth) (includes propane) ●	277,484	259,637	6.9%
Plant Eff (Dth/Mlb) ●	1.373	1.453	-5.5%
Total Gas Cost (includes propane) ●	\$1,092,798	\$915,740	19.3%
Unit Cost of Fuel (\$/Dth) ●	\$3.938	\$3.527	11.7%

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

Figure 5. Actual and Projected Gas Cost Comparison History



6. FY19 Costs to Date

Item	FY18 Actual	FY19 Budget	FY19 Actual to date	Percent of FY19 Budget
FOC's	\$ 4,909,600	\$ 4,804,000	\$ 2,617,800	54.49%
Pass Throughs				
Non-Energy	\$ 1,201,300	\$ 1,140,719	\$ 648,700	56.87%
Water/Sewer	\$ 560,300	\$ 751,900	\$ 331,000	44.02%
Natural Gas Base	\$ 2,105,100	\$ 2,173,300	\$ 1,130,600	52.02%
Natural Gas Contingency	\$ -	\$ 816,381	\$ -	0.00%
Electricity	\$ 5,144,000	\$ 5,685,900	\$ 2,958,900	52.04%
ORF Deposit	\$ -	\$ -	\$ -	
Debt Service	\$ 5,395,400	\$ 5,420,200	\$ 3,616,800	66.73%
Total Expenses	\$ 19,315,700	\$ 20,792,400	\$ 11,303,800	54.37%
Total Revenues	\$ 17,093,000	\$ 19,152,100	\$ 9,530,700	49.76%
Metro Funding Amount	\$ 2,222,700	\$ 1,640,300	\$ 1,230,225	75.00%

Actual Costs to Date includes some 3rd Quarter items.

7. Marketing

New Customers

- 5th + Broadway (601 Commerce)
 - CSA and Easement are in place.
 - 1,200 ton contract capacity; no steam
 - Service connection will be available Spring 2019; anticipate usage during construction in Summer 2019
- Hyatt Centric (3rd Ave and Molloy)
 - Negotiations ongoing and favorable
 - 300 to 400 ton contract capacity; no steam
 - Service during construction Spring 2020; February 2021 opening

DES Website Changes

- New DES Website; www.nashvilledistrictenergy.com
 - Targets Commercial Development Sector
 - Focuses Technical Information and Benefits Prospective Customers Should Consider
 - Includes Videos and Photographs of the EGF and Customer Buildings
- Interactive Savings Calculator
 - Calculates Customer Savings with DES Services Based on Specific Customer Inputs
 - Compares Total Costs with Self-Generation of Heating and Cooling
- Existing City Website Will Be Maintained and Will Contain Documents Required by Metro

DES Website Savings Calculator



Calculate Your District Energy Savings

Tell Us About Your Building and Service Requirements		
Cooling		
Functional Use =	OFFICE	
Water-Cooled Condensers or Cooling Towers =	Yes	
Sq ft/ton	350	
Conditioned Space =	300,000	sq ft
Load Factor =	24%	
Self-Generation Cooling Costs Estimate:		
Demand =	875	tons
Consumption =	1,813,435	tonhrs/yr
Installed Capacity =	1,175	tons
Building Area Required =	3,000	sq ft
Total Utility Cost =	\$ 252,945	per year
Total Other O&M Cost =	\$ 68,150	per year
Annualized Capital Cost =	\$ 337,201	per year
Total Cooling Cost =	\$ 658,296	per year
Average Unit Cost =	\$ 0.3630	per tonhr
Estimated CHW from DES =	\$ 592,467	per year
Average DES Unit Cost =	\$ 0.3267	per tonhr
Estimated Savings with DES Chilled Water Service	\$ 65,830	per year
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8. *DES RFP Update*

DES-139

- Metro Issued Round One of RFP November 2, 2018
 - Requests Qualified Offerors to Create Short List for Round 2
 - Short List Created After Evaluation of Round 1
 - 5 of the 9 Offerors Advanced to Round 2
 - EGF and Distribution Tour provided January 8, 2019
- Round 2 Requests Financial Offer from Qualified Offerors from Round 1 for Operations or Purchase
 - Round Two Proposals Due February 22, 2019

9. Capital Expenditure Update

	Spent to End of FY18	FY19 Spending	Balance to Date (02/01/19)
R&I Projects	\$3,353,083	\$256,080	\$36,006
49109-2010 Bond	\$2,497,999	\$86,931	\$20,986
49107-DES Infrastructure Fund	\$8,466,205	\$31,573	\$2,221
49116-DES Infrastructure Fund	\$0	\$45,467	\$1,714,533
Total	\$14,317,287	\$420,051	\$1,773,746



Capital Projects Review

Active Capital Projects

- DES 124.4: CJC Reconnection – Services re-energized December 2019; anticipate new occupancy Summer 2019
- DES 133.1: Broadway Tunnel Damage Recovery
- DES 135: CHW Leak at 5th & Union: ongoing; discovered leaks at Nissan Stadium and 4th/Union – both repaired; M-U reduced ~100 gpm, but no impact on leak @ JK Polk; will conduct add'l partial CHW isolations; MWS has leak 1 block south and will replace main, hopeful that this is primary source of leak at JK Polk
- DES 144: MH 6 Repair – construction completed; anticipated closure in 3rd Qtr FY19
- DES 149: 1st and Molloy Hot Spot – add'l. invoice from insulator not submitted in timely manner; project now closed



Capital Projects Review

Active Capital Projects - continued

- DES 151: Manhole 23 Repairs – metal corrosion & concrete repairs; bid in 2nd Qtr FY19; award and work to be completed in 3rd Qtr FY19
- DES 152: Manhole A and M Coating Repairs – on hold
- DES 153: Manhole L Repairs - metal corrosion repairs, concrete repairs, CND piping hammer; in design; anticipated award in 3rd Qtr FY 19
- DES 154: Manhole K Repairs – metal corrosion repairs; design started; other projects are higher priority; anticipated bidding and award in 1st Qtr FY20
- DES 155: 7th & Broadway CND Leak Repair – CND leak in tunnel; work completed; project closed
- DES 156: Broadway Tunnel Kicker Repair – badly corroded metal brace in Broadway Tunnel replaced; work completed; project closed



Capital Projects Review

Active Capital Projects - continued

- DES 157: Manhole 9 Repairs - metal corrosion & concrete repairs; in design; anticipated bid and award in late 3rd Qtr FY19 or early 4th Qtr FY19
- DES 158: Manhole 18A Repairs – metal corrosion repairs; bid and award to take place in 3rd Qtr FY19
- DES 159: Manhole B2 Repairs - metal corrosion & concrete repairs; in design; anticipated bid and award in late 3rd Qtr FY19 or early 4th Qtr FY19
- DES 160: 5th + Broadway Service Connection – connections designed, bid and awarded; scheduling work with affected customers for end of February
- DES 162: Hyatt Centric Service – negotiations with new customer ongoing



Capital Projects Review

Active Capital Projects - continued

- DES 163: MDHA Parcel K Service – negotiations with new customer in early stages
- DES 164: Broadway Tunnel Repairs – repairs needed as a result of 5th+Broadway Development blasting; work to be awarded and started in 3rd Qtr FY19
- DES 165: AA Birch Tunnel Repairs – repairs needed resulting from groundwater intrusion; work to be awarded and started in 3rd Qtr FY19
- DES 166: Miscellaneous Tunnel Repairs – needed remediation and prevention repairs in the 4th and 7th Avenue Tunnels; work to be awarded and started in 3rd Qtr FY19



Capital Projects Review

Capital Projects in Close-out/Closed

- DES 124: CJC Reconnection
- DES 133: 5th + Broadway Development
- DES 143: Manhole N1 & N2 Insulation
- DES 155: 7th & Broadway CND Leak Repair
- DES 156: Broadway Tunnel Kicker Repair

10. Other Board Member Items

11. Adjourn

- *Advisory Board Meeting Schedule*
- FY19 – 3rd Quarter Meeting – May 16, 2019
- FY19 – 4th Quarter Meeting – August 15, 2019
- FY20 – 1st Quarter Meeting – November 21, 2019
- FY20 – 2nd Quarter Meeting – February 20, 2020