



Metro Nashville
DISTRICT ENERGY SYSTEM

DES Advisory Board Meeting
First Quarter FY19
November 15, 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. FY19 Costs to Date
7. FY19 Budget Update
8. FVB Report Update
9. Capital Projects Review & Status
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: Historic EDS Chilled Water Make-up
- ❖ Figure 3B: Average EDS Chilled Water Make-up

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Oct 2016 - Sept 2017	Oct 2017 - Sept 2018	% Diff.	Oct 2016 - Sept 2017	Oct 2017 - Sept 2018	% Diff.
Private	Cost	\$ 1,391,221	\$ 1,428,765	2.70%	\$ 3,527,819	\$ 3,801,716	7.76%
	Usage (lbs or tonhrs)	87,122,782	97,793,958	12.25%	18,378,658	19,995,945	8.80%
State	Cost	\$ 1,667,876	\$ 1,812,248	8.66%	\$ 3,259,444	\$ 3,367,469	3.31%
	Usage (lbs or tonhrs)	88,079,341	119,542,528	35.72%	13,195,480	14,196,589	7.59%
Metro	Cost	\$ 2,053,747	\$ 1,843,706	-10.23%	\$ 5,316,659	\$ 5,112,675	-3.84%
	Usage (lbs or tonhrs)	147,764,615	154,261,565	4.40%	28,834,145	28,435,474	-1.38%
Aggregate	Cost	\$ 5,112,844	\$ 5,084,718	-0.55%	\$ 12,103,922	\$ 12,281,860	1.47%
	Usage (lbs or tonhrs)	322,966,738	371,598,051	15.06%	60,408,283	62,628,008	3.67%
	Unit Cost	\$ 15.83	\$ 13.68	-13.6%	\$ 0.200	\$ 0.196	-2.13%

MFA not included in values shown

Figure 3A: Historic EDS Chilled Water Make-up

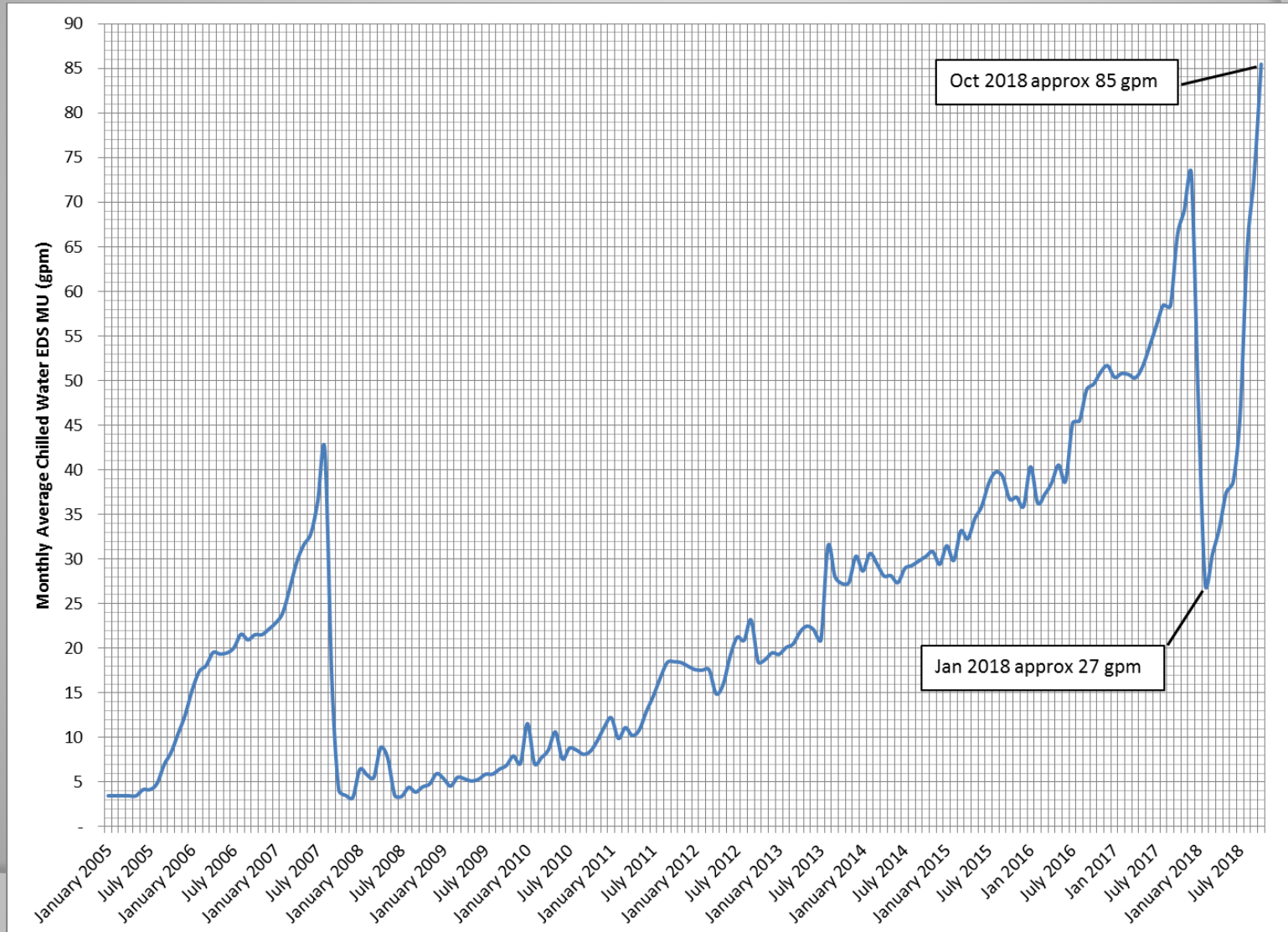
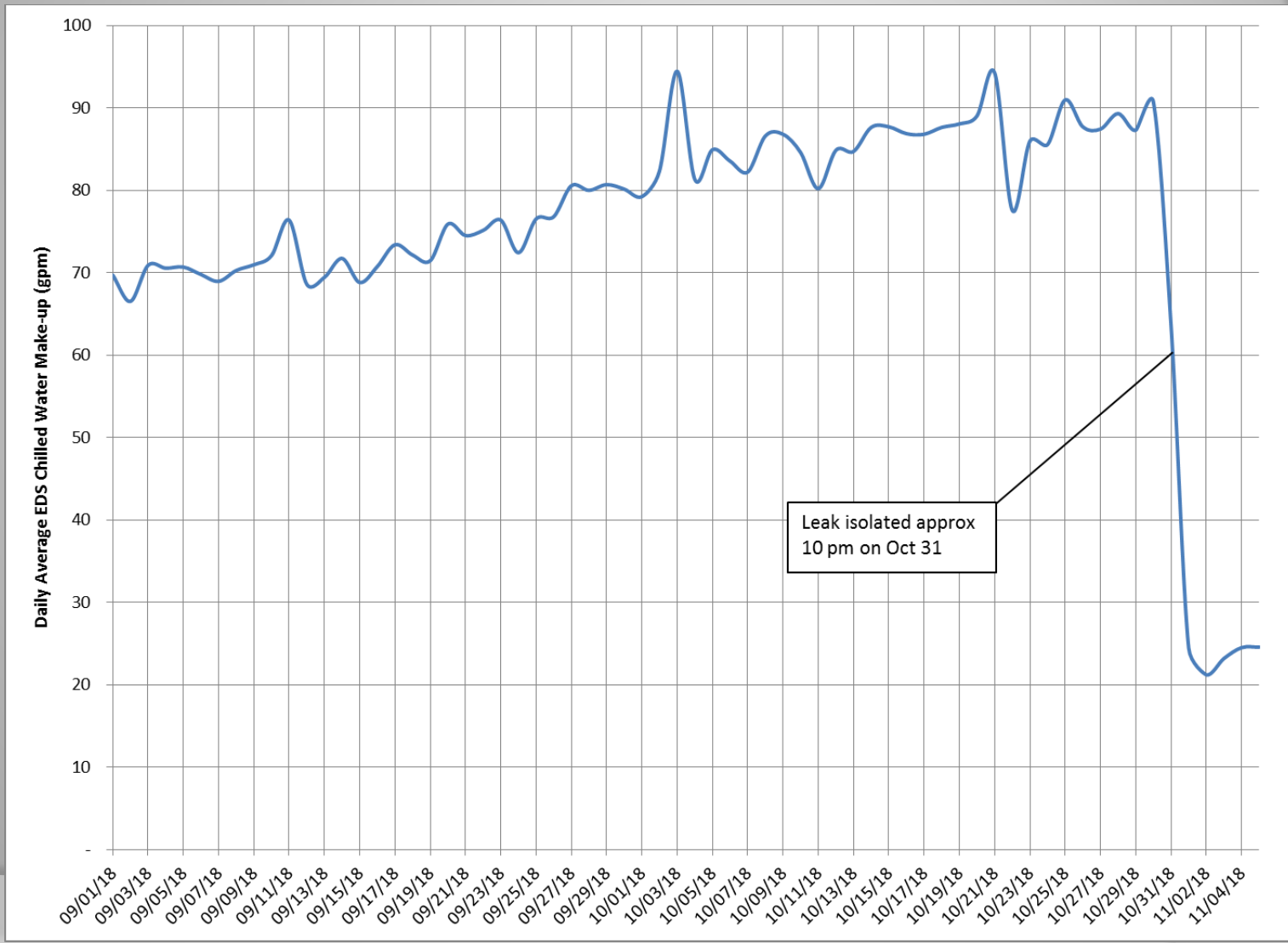


Figure 3B: Average EDS Chilled Water Make-up





Drain Valve Leak near
Nissan Stadium

Leak at 4th and Union








Excavated 6" CHW at 4th
and Union



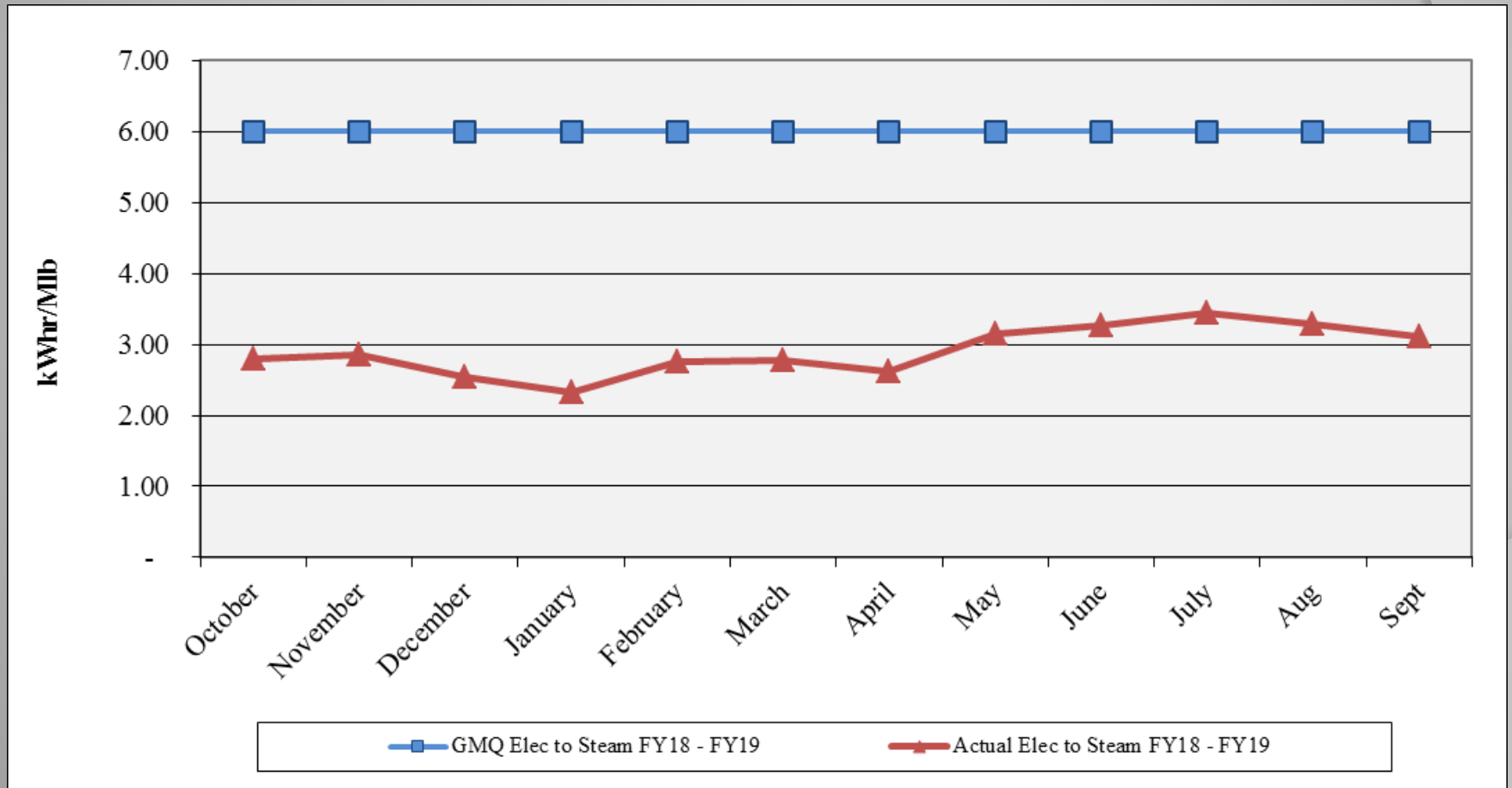
Repair Clamp on 6"
CHW at 4th and Union

4. *Review of DES Contractor Performance*

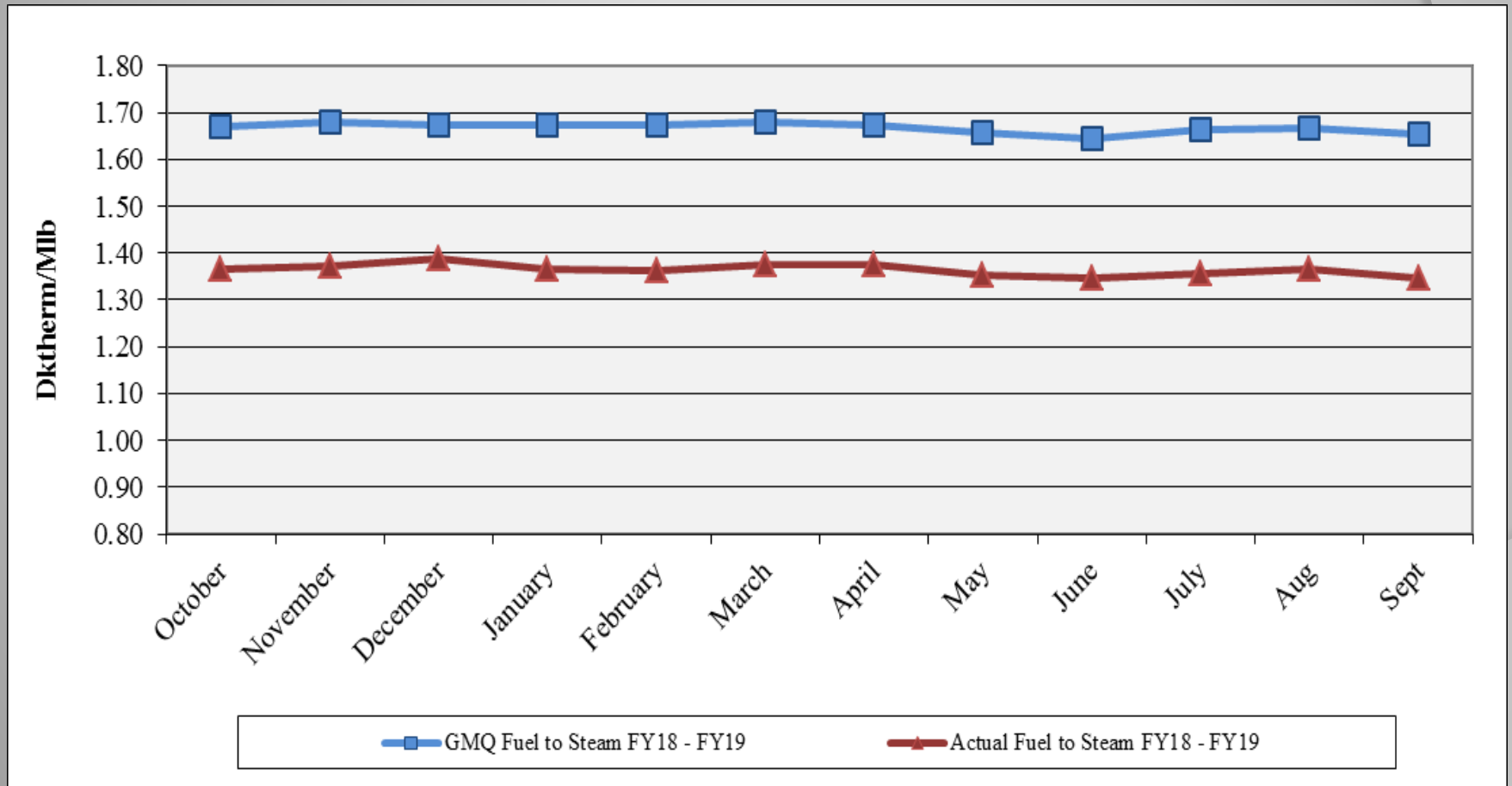
Contractor (CNE) is in compliance with their contractual obligations for FY19 to date.

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

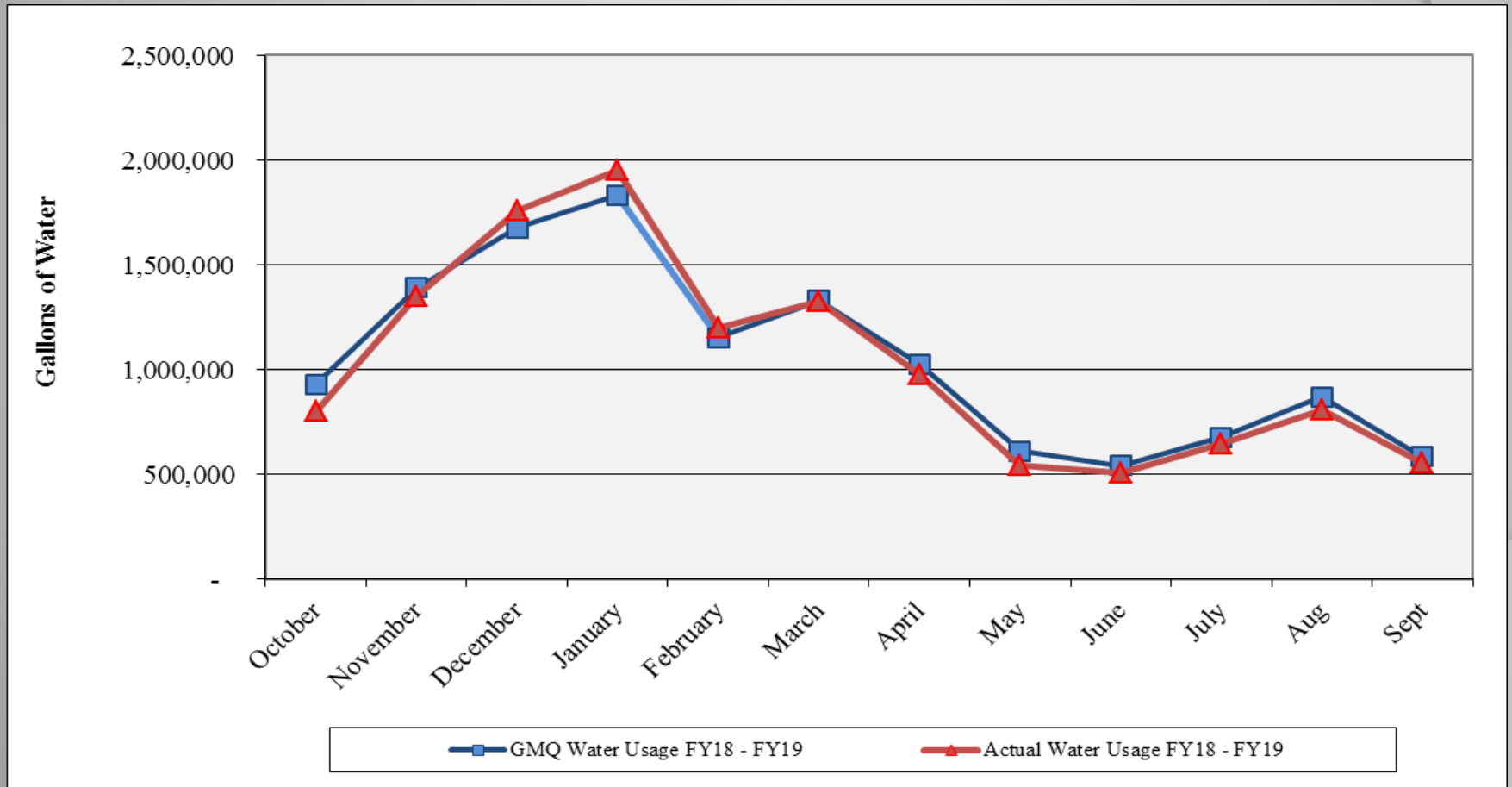
Performance Measurement FY19: Steam Electric Conversion ●



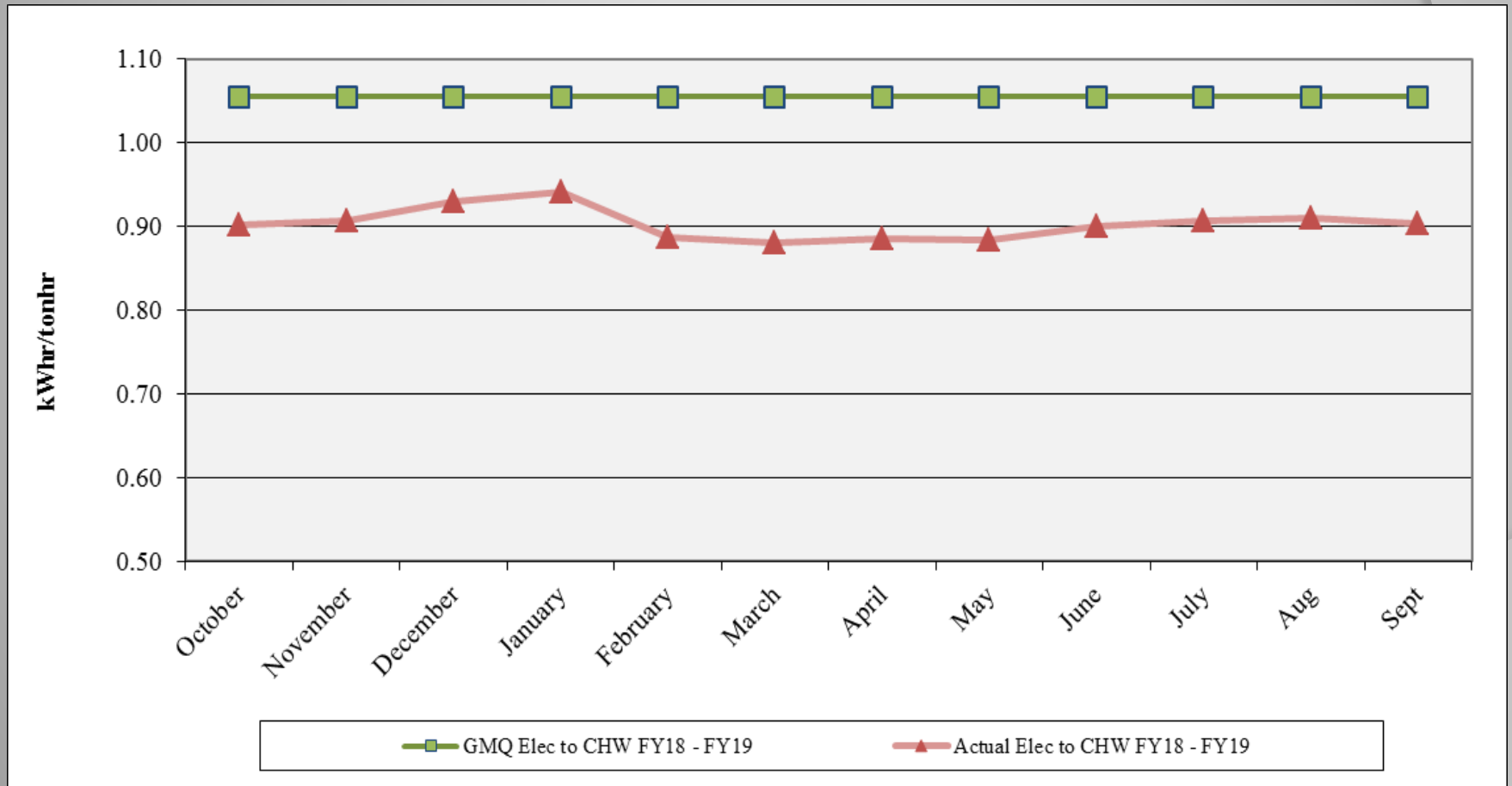
Performance Measurement FY19: Steam Plant Efficiency



Performance Measurement FY19: Steam Water Conversion ●

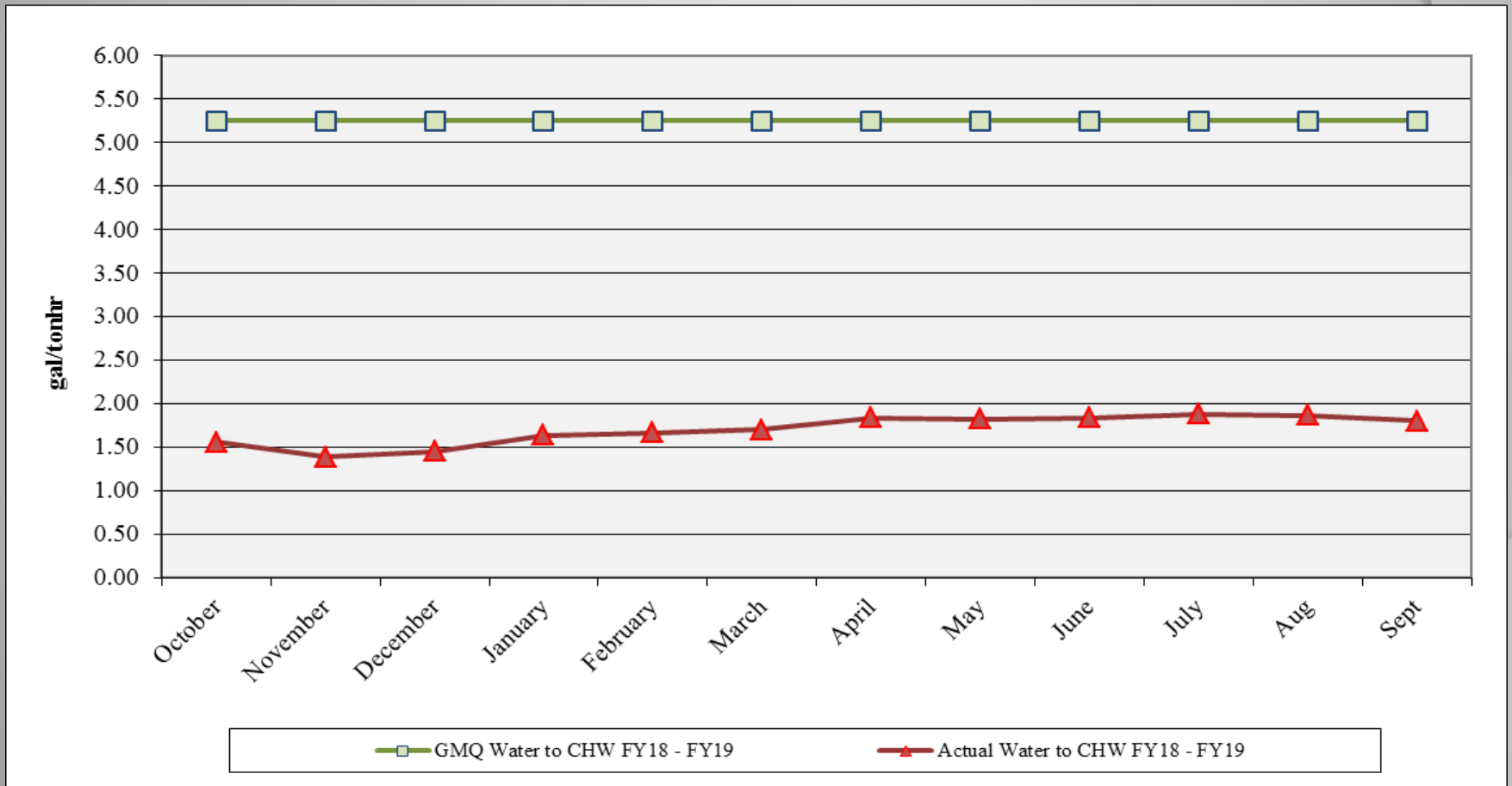


Performance Measurement FY19: CHW Electric Conversion



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

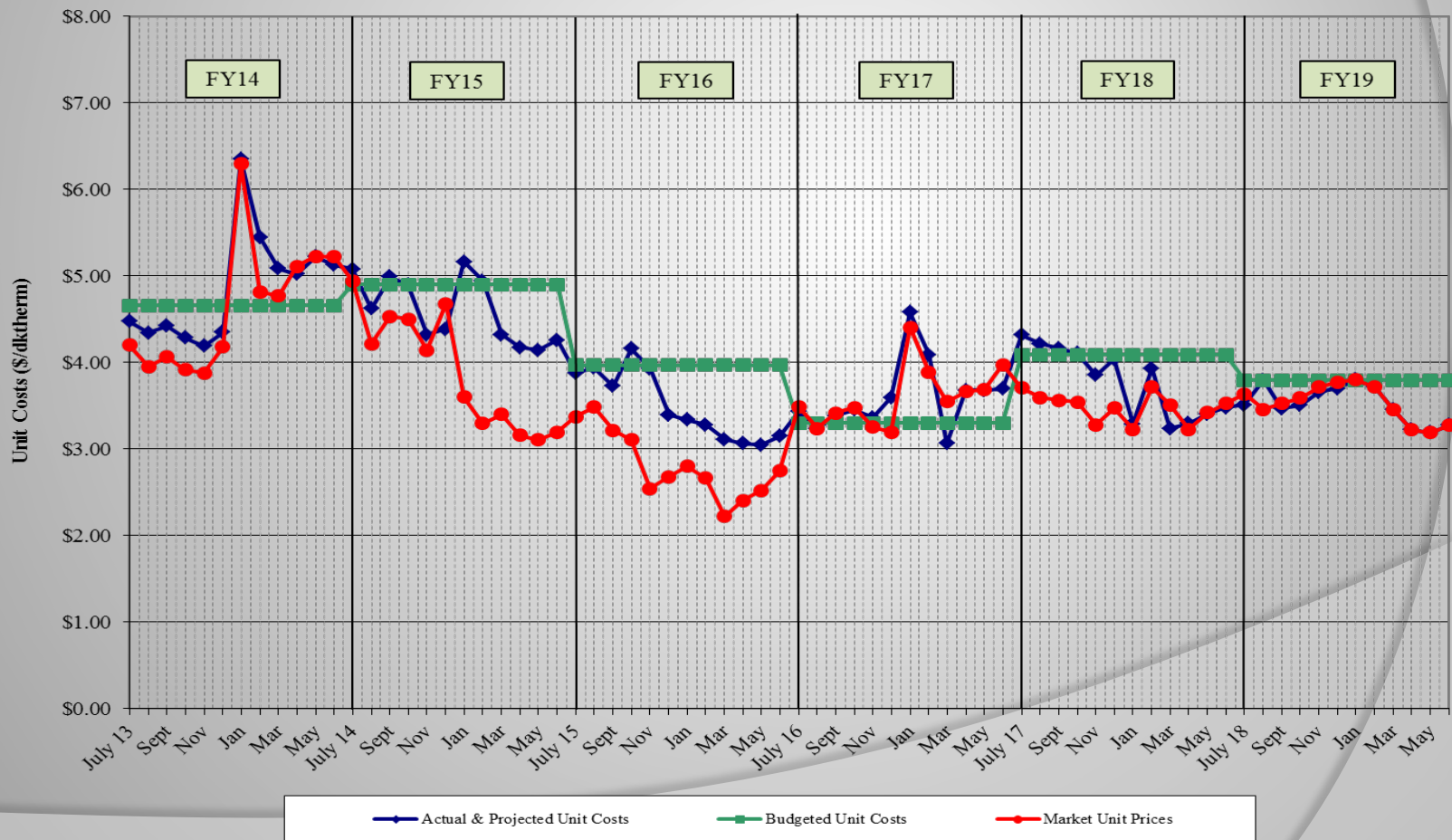
- ❖ Natural Gas Purchasing Review
 - ❖ Table 5: FY19 Gas Spending & Budget Comparison
 - ❖ Figure 5: Actual and Projected Gas Cost Comparison

Table 5: FY19 Gas Spending & Budget Comparison

		Actual FY19 To date (Sept 30)	Budget FY19	Percent Difference
Steam Sendout (Mlbs)		68,795	59,822	15.0%
Fuel Use (Dth) (includes propane)	●	93,286	86,922	7.3%
Plant Eff (Dth/Mlb)	●	1.356	1.453	-6.7%
Total Gas Cost (includes propane)	●	\$335,2116	\$306,547	9.3%
Unit Cost of Fuel (\$/Dth)	●	\$3.593	\$3.527	1.9%

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	\$ 1,342,200	27.94%
Pass Throughs				
Non-Energy	\$ 1,201,300	\$ 1,140,719	\$ 345,000	30.24%
Water/Sewer	\$ 560,300	\$ 751,900	\$ 214,700	28.55%
Natural Gas Base	\$ 2,105,100	\$ 2,173,300	\$ 353,600	16.27%
Natural Gas Contingency	\$ -	\$ 816,381	\$ -	0.00%
Electricity	\$ 5,144,000	\$ 5,685,900	\$ 2,016,300	35.46%
ORF Deposit	\$ -	\$ -	\$ -	
Debt Service	\$ 5,395,400	\$ 5,420,200	\$ 2,295,200	42.35%
Total Expenses	\$ 19,315,700	\$ 20,792,400	\$ 6,567,000	31.58%
Total Revenues	\$ 17,093,000	\$ 19,152,100	\$ 5,155,300	26.92%
Metro Funding Amount	\$ 2,222,700	\$ 1,640,300	\$ 410,075	25.00%

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. *FVB Report Update*

DES-139

- Amendment One with CNE
 - Operations (ARMA/ARFA) Extension Until December 17, 2020
 - 90 day Notice for Termination
- Metro Issued Round One of RFP November 2, 2018
 - Requests Qualified Offerors to Create Short List for Round 2
 - Close Date November 30, 2018
- Round Two Requests Financial Offer from Qualified Offerors from Round One for Operations or Purchase

9. Capital Expenditure Update

	Spent to End of FY18	FY19 Spending	Balance to Date (09/30/18)
R&I Projects	\$3,353,083	\$141,160	\$57,025
49109-2010 Bond	\$2,497,999	\$27,377	\$80,540
49107-DES Infrastructure Fund	\$8,466,205	\$31,573	\$2,221
Total	\$14,317,287	\$200,110	\$139,786

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 and site storm water system is constructed
- DES 124.4: CJC Reconnection – Instrument installation in progress; anticipate steam and chilled water usage by end of November
- DES 133: 5th and Broadway Development – OMSE accepted CSA and is now a customer; developing service connection under new project number
- DES 133.1: Repairs needed due to blasting; proposed NES vault relocated within bounds of development; project now closed
- DES 133.2: Stand-by Equip (rental chillers and boiler) at Bridgestone Arena completed; project closed
- DES 133.3: Tunnel Reinforcement – Completed in December; project closed



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; will renew efforts to find leak during heating season
- DES 139: DES Options Review – FVB/Metro developing RFP
- DES 143: Manholes N1, N2 and S6 Insulation and Repair – on hold
- DES 144: Manhole 6 Repair – Piping structural steel replacement, cleaning, and painting; construction started in 1st Qtr FY19, to be completed in 2nd Qtr FY19
- DES 147: 3rd Ave Insulation Repair – utility contractor damaged DES steam piping insulation; work completed during 4th Qtr FY18; cost substantiation reviewed and accepted; DES reimbursed; project closed
- DES 148: Site I Development – Blasting completed
- DES 149: 1st and Molloy Hot Spot; repairs completed during 4th Qtr FY18; cost substantiation reviewed and accepted; project closed
- DES 150: Federal Courthouse and 7th Ave Tunnel – Building's contractor will not be performing any blasting at site; project closed



Capital Projects Review

Capital Projects in Close-out/Closed

- DES 119: CHW Hydroflow
- DES 130: Manhole B3 Repairs (reimbursed)
- DES 133: 5th and Broadway Development
- DES 147: 3rd Avenue Steam Piping Insulation Repair
- DES 148: Site I Development
- DES 150: Federal Courthouse and 7th Ave Tunnel

10. Other Board Member Items

11. Adjourn

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