



Metro Nashville
DISTRICT ENERGY SYSTEM

DES Advisory Board Meeting
Fourth Quarter FY20
August 20, 2020

Agenda

1. Call to Order
2. Review & Approval of Previous Meeting Minutes
3. Customer Sales
4. nCOVID-19 Response
5. Review of DES Contractor Performance
6. Natural Gas Purchasing Update
7. FY20 Costs to Date
8. FY20 and FY21 Budget
9. Marketing
10. DES RFP Status Update
11. Capital Projects Review & Status
12. Invitation to Tour Facilities
13. Other Board Member Items
14. 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		
		July 2018 - June 2019	July 2019 - June 2020	% Diff.	July 2018 - June 2019	July 2019 - June 2020	% Diff.
Private	Cost	\$ 1,566,826	\$ 1,251,018	-20.16%	\$ 3,801,301	\$ 3,686,779	-3.01%
	Usage (lbs or tonhrs)	105,233,903	88,886,252	-15.53%	19,830,517	18,065,561	-8.90%
State	Cost	\$ 1,876,965	\$ 1,603,878	-14.55%	\$ 3,297,782	\$ 3,213,799	-2.55%
	Usage (lbs or tonhrs)	118,780,686	105,776,927	-10.95%	13,473,126	12,299,713	-8.71%
Metro	Cost	\$ 1,979,144	\$ 1,618,588	-18.22%	\$ 5,123,435	\$ 4,781,375	-6.68%
	Usage (lbs or tonhrs)	158,062,415	151,563,519	-4.11%	28,673,437	26,473,982	-7.67%
Aggregate	Cost	\$ 5,422,936	\$ 4,473,484	-17.51%	\$ 12,222,518	\$ 11,681,953	-4.42%
	Usage (lbs or tonhrs)	382,077,004	346,226,698	-9.38%	61,977,080	56,839,256	-8.29%
	Unit Cost	\$ 14.19	\$ 12.92	-9.0%	\$ 0.197	\$ 0.206	4.22%

MFA, True-up, late fees and misc. are not included in values shown

Figure 3A. Historic Chilled Water Sales

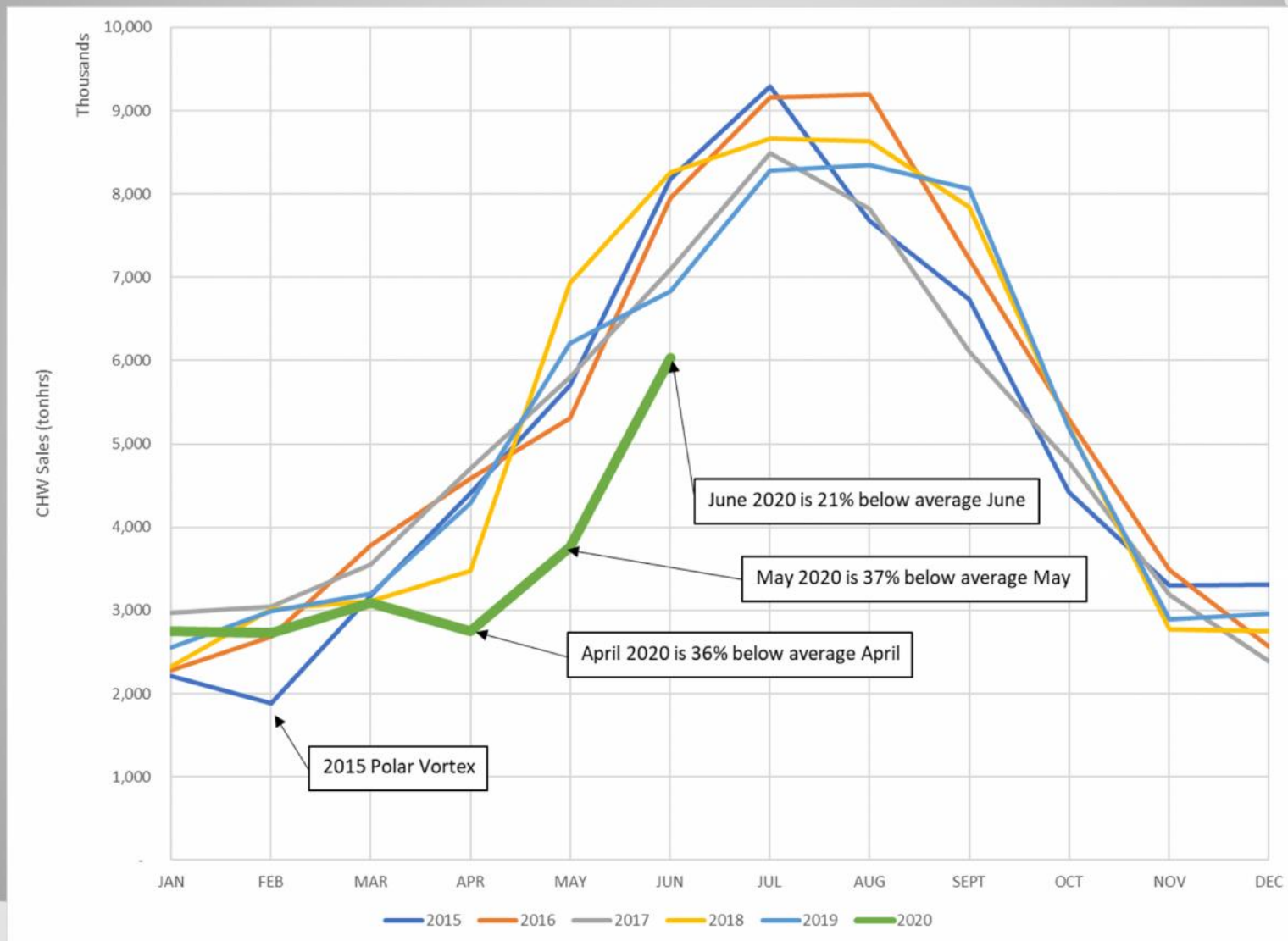
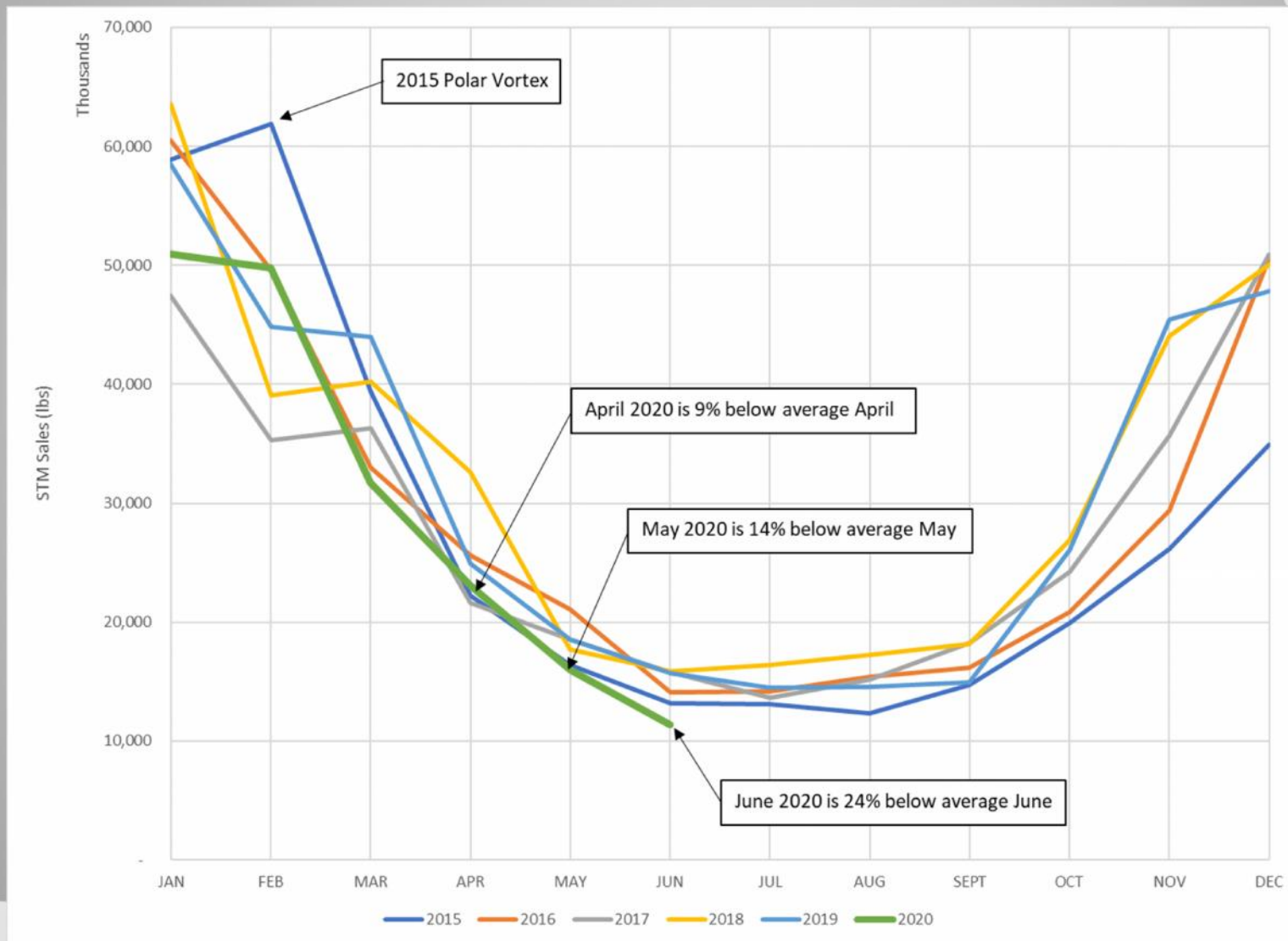


Figure 3B. Historic Steam Sales






4. nCOVID-19 Response

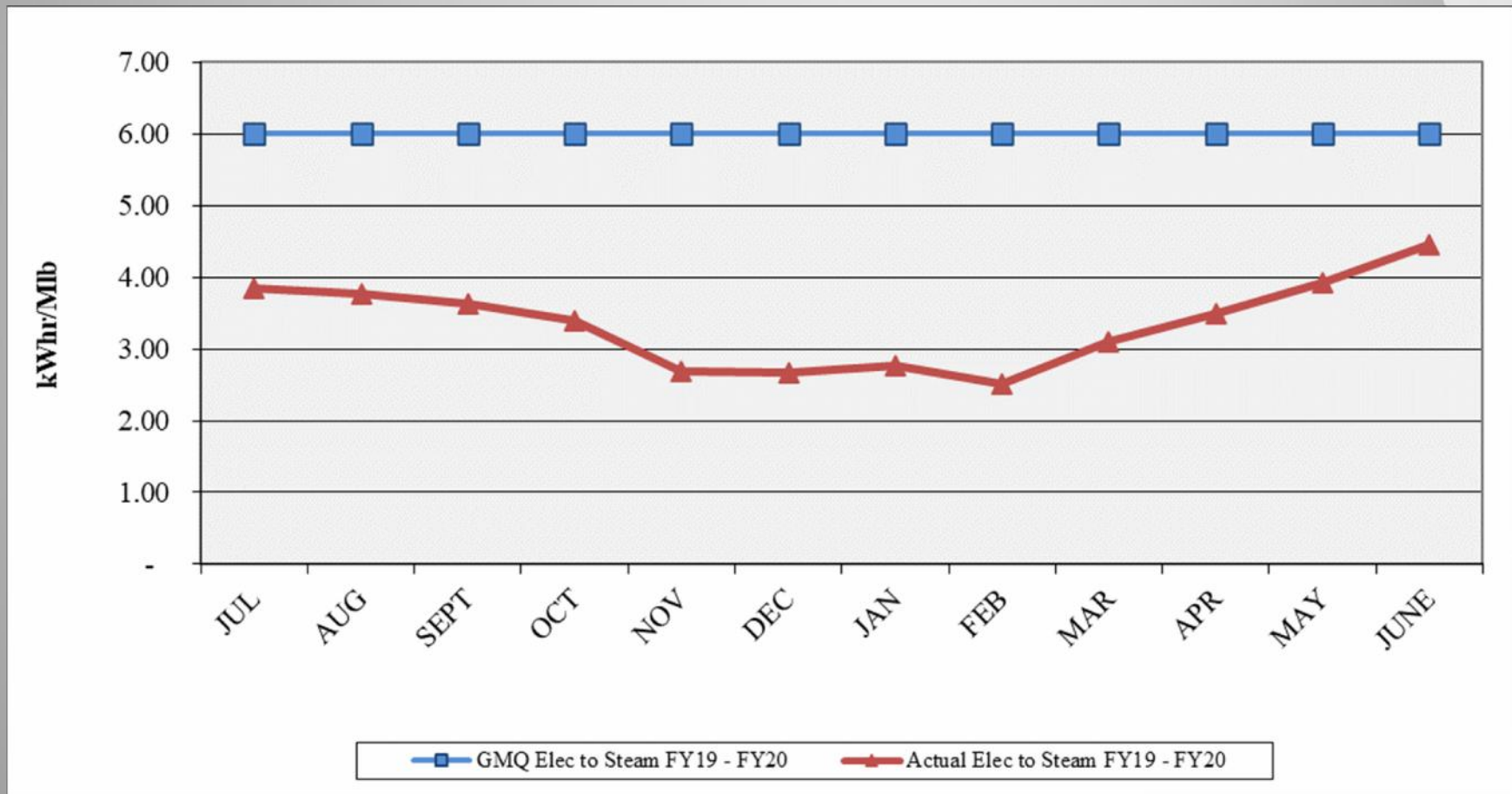
- DES implemented and extended the nCOVID-19 Policies through the end of July
 - No late fees until the end of July
 - No customer disconnects for not paying
 - Option to defer two months of invoices through July and repay amounts due over following twelve months
- Two customers opted for deferral
- There are 6 customers currently in arrears
- Construction activities have resumed
- Limited access to EGF to essential personnel only

5. Review of DES Contractor Performance

Contractor (CNE) is in compliance with their contractual obligations for FY20 to date.

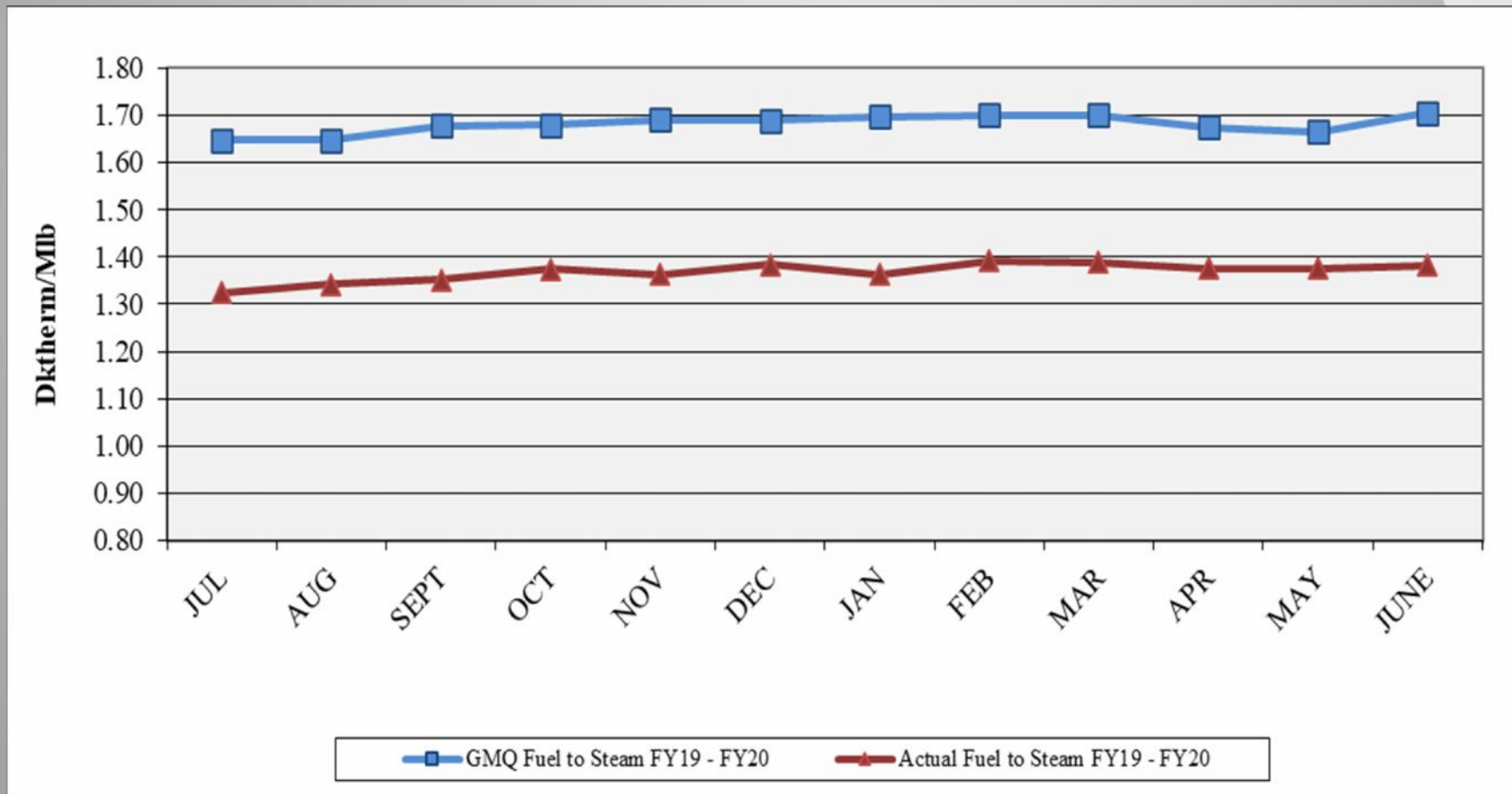
-  Excellent Performance – No Improvement Necessary
-  Satisfactory Performance – Some Improvement Could Be Made
-  Poor Performance – Much Improvement Necessary

Performance Measurement FY20: Steam Electric Conversion ●

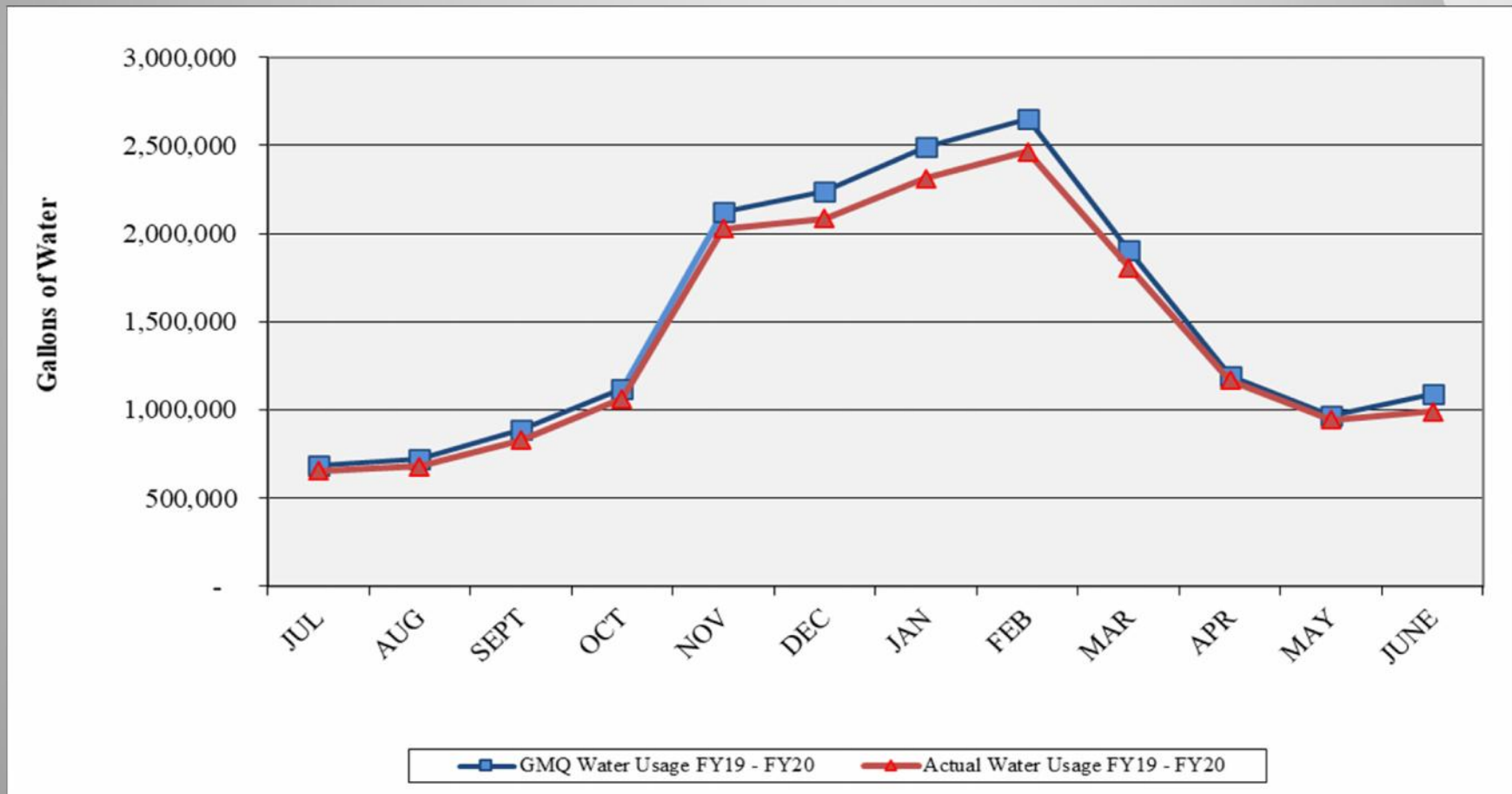


Values of 3.50 to 4.00 in summer months are not unusual.

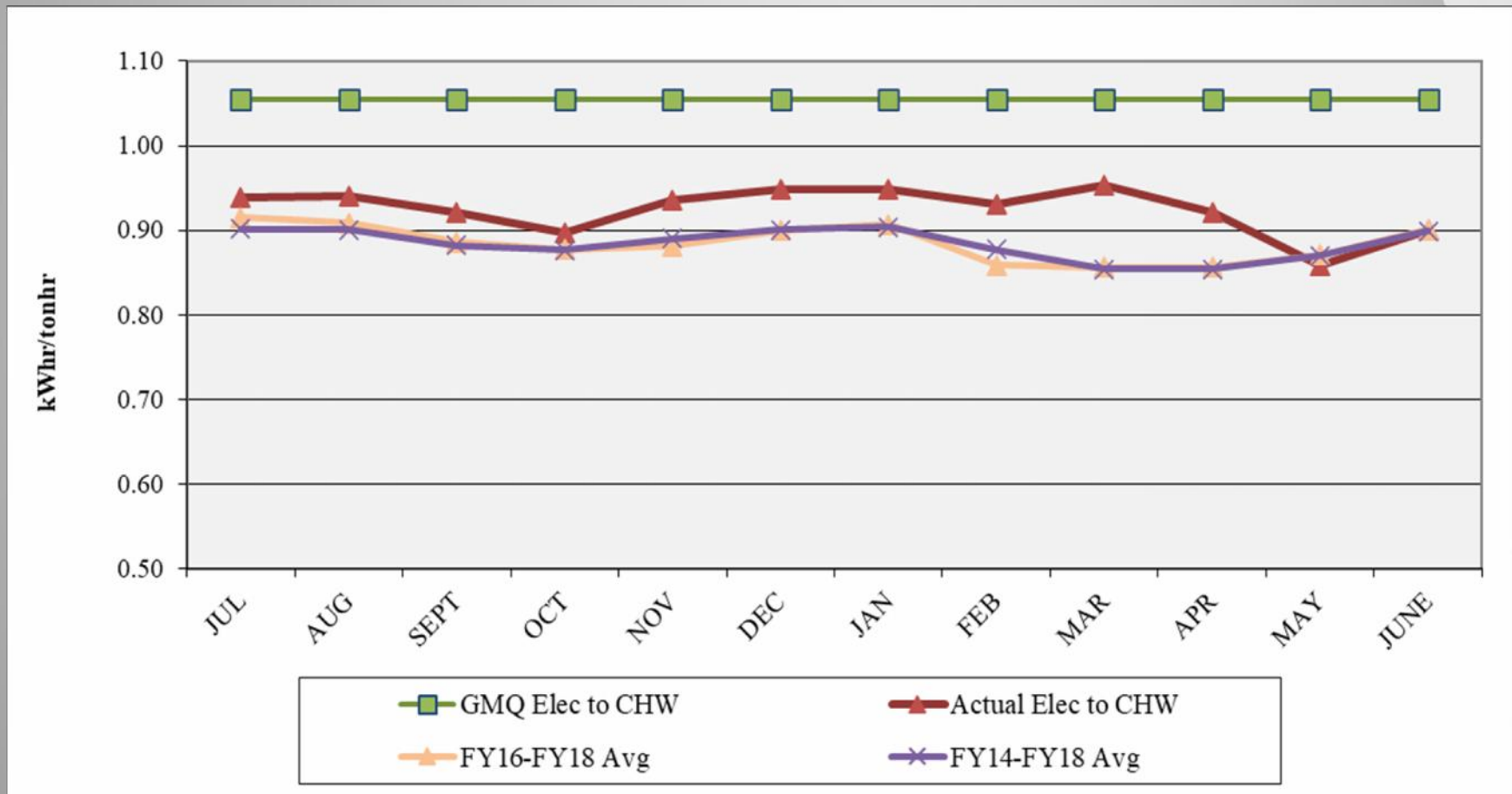
Performance Measurement FY20: Steam Plant Efficiency



Performance Measurement FY20: Steam Water Conversion ●

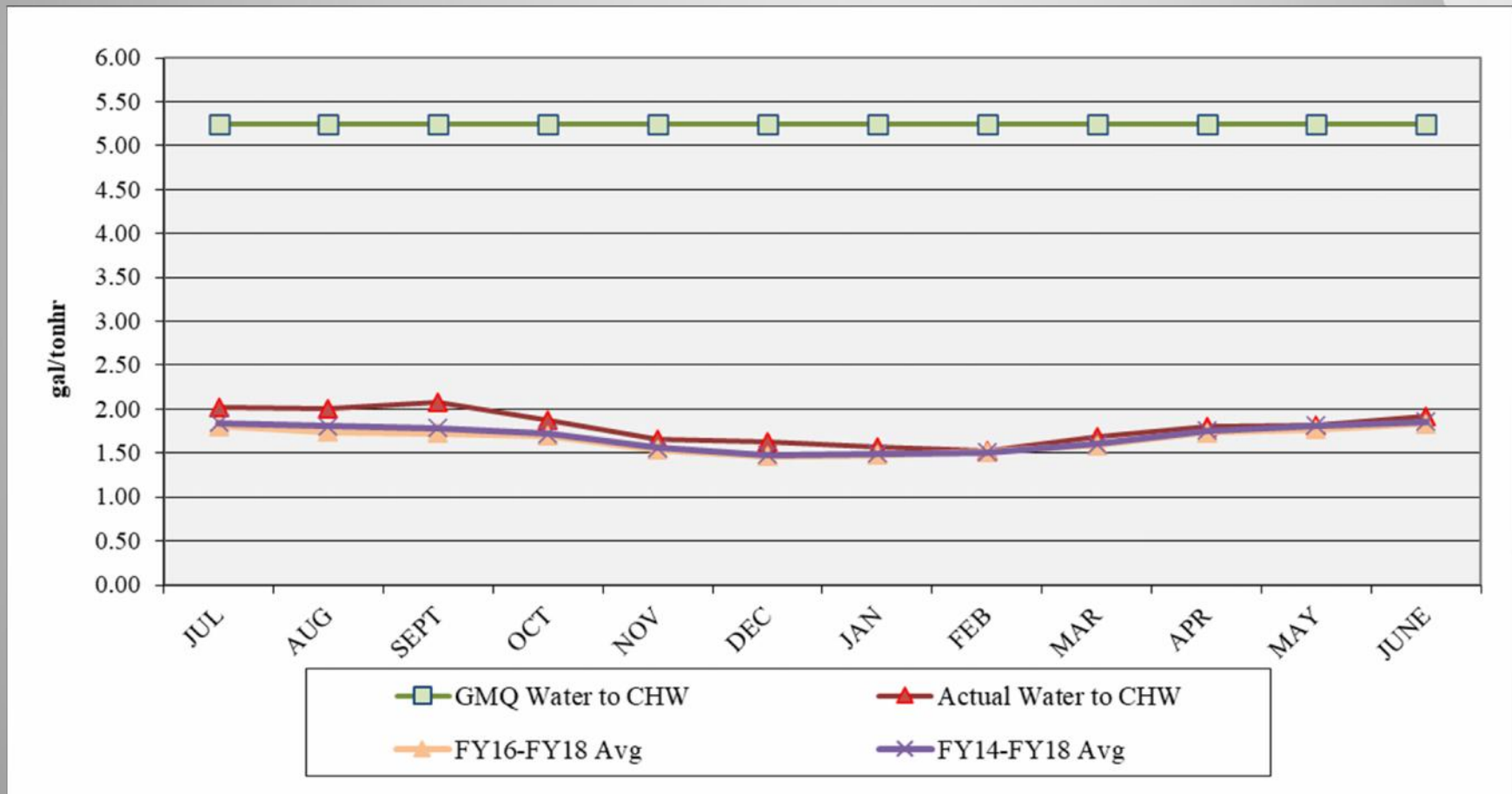


Performance Measurement FY20: CHW Electric Conversion



Performance improved in Fourth Quarter.

Performance Measurement FY20: CHW Water Conversion ●



Performance appears to have returned to normal.

Guaranteed Maximum Quantities

- Changes coming in FY21 due to CNE Contract Extension
- More stringent performance criteria
- All customers benefit by reduced FEA and improved performance

		Original	Beginning FY21
Steam Elec	kWhr/Mlb sales	6.00	4.50
Steam Plant Eff	Dth/Mlb sendout	Equation	Equation (-18.5%)*
Steam Water	Gallons	Equation	Equation; no change
CHW Elec	kWhr/tonhr sales	1.055	0.930
CHW Water	Gal/tonhr sales	5.25	2.00**

*based on condensate at 180°F with an 80% return (1.668 vs 1.359)

**includes all make-up for CHW except that EDS make-up is capped at 30,000 gal per day

Water Treatment

Q4FY20 Q3FY20 Q2FY20 Q1FY20

❖ Steam and Condensate

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



❖ Condensing Water

- ❖ Conductivity
- ❖ Biologicals



❖ Chilled Water

- ❖ Hardness
- ❖ Corrosion
- ❖ EGF and Customer Biologicals Good
- ❖ Deposits



EGF Walkthrough

	Q4FY20	Q3FY20	Q2FY20	Q1FY20
✓ 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

	Q4FY20	Q3FY20	Q2FY20	Q1FY20
Vault/Tunnel Housekeeping	Yellow	Yellow	Yellow	Yellow
Insulation Repair/Replacement	Green	Green	Green	Green
Water Infiltration	Yellow	Yellow	Yellow	Yellow
Corrosion of Structural Metal Components	Yellow	Yellow	Yellow	Yellow
Safety Items	Green	Green	Green	Green

6. *Natural Gas Purchasing*

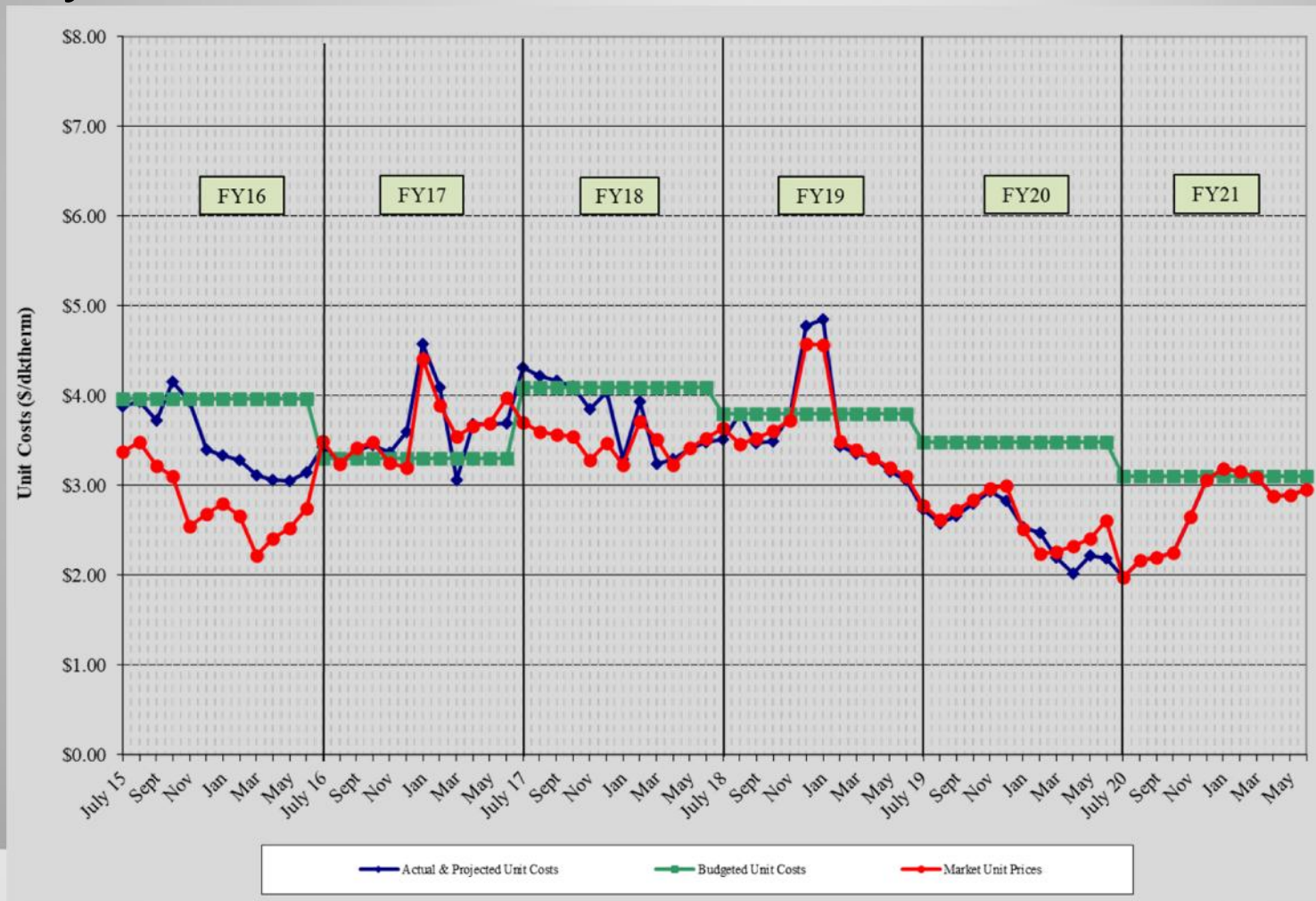
- ❖ Natural Gas Purchasing Review
 - ❖ Table 6: FY20 Gas Spending & Budget Comparison
 - ❖ Figure 6: Actual and Projected Gas Cost Comparison

Table 6: FY20 Gas Spending & Budget Comparison

		Actual FY20 To date (June 30)	Budget FY20	Percent Difference
Steam Sendout (Mlbs)		412,950	453,209	-8.9%
Fuel Use (Dth) (includes propane)	●	566,363	658,512	-14.0%
Plant Eff (Dth/Mlb)	●	1.372	1.453	-5.6%
Total Gas Cost (includes propane)	●	\$1,445,363	\$2,452,086	-41.1%
Unit Cost of Fuel (\$/Dth)	●	\$2.552	\$3.724	-31.5%

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

Figure 6. Actual and Projected Gas Cost Comparison History



7. FY20 Costs to Date

Item	FY20 Budget	FY20 Actual to date	Percent of FY20 Budget
FOC's	\$ 4,601,600	\$ 4,630,506	100.63%
Pass Throughs			
Administrative Costs	\$ 393,600	\$ 364,321	92.56%
Chemicals	\$ 253,100	\$ 223,183	88.18%
R&I Fund Transfers	\$ 287,600	\$ 287,600	100.00%
Water/Sewer	\$ 714,000	\$ 718,007	100.56%
Fuel Base	\$ 2,575,700	\$ 1,566,875	60.83%
Fuel Contingency	\$ 507,000	\$ -	0.00%
Electricity	\$ 5,977,200	\$ 4,692,869	78.51%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,079,200	\$ 5,079,166	100.00%
Total Expenses	\$ 20,389,000	\$ 17,562,526	86.14%
Total Revenues	\$ 19,070,500	\$ 16,169,910	84.79%
Metro Funding	\$ 1,318,500	\$ 1,392,617	105.62%

Actual Costs and Revenues to Date include FY19 True-up Items.

8. *FY20 and FY21 Budget*

Item	FY20 Budget	FY21 Budget	Percent Change From FY20 Budget
FOC's	\$ 4,601,600	\$ 3,776,800	-17.92%
Pass Throughs			
Administrative Costs	\$ 393,600	\$ 393,900	0.08%
Chemicals	\$ 253,100	\$ 260,700	3.00%
R&I Fund Transfers	\$ 287,600	\$ 291,900	1.50%
Water/Sewer	\$ 714,000	\$ 624,000	-12.61%
Fuel Base	\$ 2,575,700	\$ 2,001,900	-22.28%
Fuel Contingency	\$ 507,000	\$ 431,900	-14.81%
Electricity	\$ 5,977,200	\$ 6,130,100	2.56%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,079,200	\$ 5,098,000	0.37%
Total Expenses	\$ 20,389,000	\$ 19,009,200	-6.77%
Total Revenues	\$ 19,070,500	\$ 18,378,500	-3.63%
Metro Funding	\$ 1,318,500	\$ 630,700	-52.17%

9. *Marketing*

Remaining Capacity for Sale (approximate)

- 2,429 tons of chilled water
- 24,622 pph of steam

Potential Customers

- Service to Lot K
 - Site directly to the east of EGF
 - Early stages of communication
 - Potential ~1,000 ton and ~15,000 pph

Marketing (con't)

- Service to New KVB Hotels
 - Two hotels with retail space; discussions favorable
 - Site is between 1st Ave S, 2nd Ave S, KVB and Peabody St
 - Potential ~1,400 tons and ~20,000 pph
- Peabody St Hotel
 - Early stages of communications
 - Potential 2,000 to 3,000 tons
- New Development North of KVB
 - Early stages of communications
 - Potential ~1,100 tons and ~15,000 pph

Marketing (con't)

- Union Street Hotel
 - Ongoing renovation of existing building on Union St
 - Potential 100 tons and no steam
- MDHA Development North of Gay St
 - Early stages of communications
 - Potential 100 tons and no steam
 - Site might be too far

10. DES RFP Status Update

DES-139

- RFP has been rescinded
- DES Administration oversight has transferred to Metro Water Services
- DES Budget for FY21 is approved
- Amendment 2 to CNE's Operating Contract (ARMA) has been executed
 - CNE contract extension (five years)
 - Contract extension results in a savings to the MFA and for DES customers
 - Implementation of new performance guarantees

11. Capital Expenditure Update

	Spent to End of FY19	FY20 Spending	Balance to Date (07/27/20)
R&I Projects	\$3,675,354	\$211,925	\$139,389
49109-2010 Bond	\$2,596,698	\$3,904	\$5,314
49107-DES Infrastructure Fund	\$8,497,779	\$2,182	\$39
49116-DES Infrastructure Fund	\$822,320	\$746,069	\$191,611
Total	\$15,592,151	\$964,080	\$336,353

Capital Projects Review

Active Capital Projects

Note: Construction work is no longer being delayed due to nCOVID-19.

- DES 133.1: Broadway Tunnel Damage Recovery: ongoing
- DES 152: MH A & M Coating Repairs – (Manhole B is being added to scope) anticipate bidding late 1st or early 2nd Qtr FY21
- DES 153: MH L Repairs – anticipate bidding late 1st or early 2nd Qtr FY21
- DES 154: Manhole K Repairs – postponed until FY21/FY22; will prioritize based upon other projects

Capital Projects Review

Active Capital Projects - continued

- DES 157: MH 9 Repairs – work delayed due to nCOVID-19; substantially complete during 4th Qtr FY20; in close-out
- DES 159: MH B2 Repairs – work delayed due to nCOVID-19; pipe wall pen. leak discovered/added to scope; contractor ownership chg has resulted in delay; anticipate completion late 1st Qtr/early 2nd Qtr FY21
- DES 160: chilled water in-use; project closed
- DES 161: MH S6 Insulation – combining with DES 143; anticipate bidding during late 1st Qtr/early 2nd Qtr FY21

Capital Projects Review

Active Capital Projects - continued

- DES 162: Hyatt Centric Service – instrument install 1st Qtr FY21; service available late 1st Qtr
- DES 163: MDHA Parcel K Service – negotiations with new customer in early stages
- DES 168: DES Service to 1st and KVB Hotels – negotiations with new customer in early stages
- DES 169: MH 20 Repairs – pipe supports corroded, require replacement; bid during 2nd Qtr FY20; work delayed by nCOVID-19; anticipate completion late 1st Qtr/early 2nd Qtr FY21

Capital Projects Review

Active Capital Projects - continued

- DES 171: Broadway Tunnel Pipe Support Repairs – corroded pipe supports to be repaired/replaced; ladder safety item to be addressed; to be bid 1st Qtr FY21
- DES 172: Viridian Service Line Support Repairs – corroded pipe supports to be repaired/replaced; ladder safety item to be addressed; to be bid 1st Qtr FY21
- DES 173: Manhole B3 Repairs – corroded pipe supports to be cleaned and coated; concrete repairs to be made; in design; to be bid late 1st Qtr/early 2nd Qtr FY21
- DES 174: 7th Avenue Tunnel Pipe Support Repairs – corroded pipe supports to be repaired/replaced; ladder safety item to be addressed; to be bid 1st Qtr FY21

Capital Projects Review

Active Capital Projects - continued

- DES 175: Manhole 4 Condensate Return – condensate return between MH 3 and MH 4 failed several years ago, cost prohibitive to replace therefore installed trap discharge piping into basement of 401 Union; trap discharge piping has failed; evaluate options for condensate return; in planning stage
- DES 176: Condensate Return Leak Repair at MH 9 – discovered leak in condensate main next to MH 9; requires partial system shut-down; repair scheduled for 1st Qtr FY21 over weekend

Capital Projects Review

Capital Projects in Close-out/Closed During 4th Qtr FY20

- DES160

12. Invitation to Tour the Facilities

You are WELCOME to visit DES!

Visits are coordinated with CNE and will be scheduled upon request at an opportune time.

- Face-covering masks and protective footwear at all times
- Hearing protection for loud areas of the EGF [plant] is provided
- Confined Space Training to enter the EDS [tunnels] can be arranged prior to the visit

13. Other Board Member Items

14. Adjourn

- *Advisory Board Meeting Schedule*
- FY21 – 1st Quarter Meeting – November 19, 2020
- FY21 – 2nd Quarter Meeting – February 18, 2021
- FY21 – 3rd Quarter Meeting – May 20, 2021
- FY21 – 4th Quarter Meeting – August 19, 2021