



***Metro Nashville***  
**DISTRICT ENERGY SYSTEM**

*DES Advisory Board Meeting*  
*First Quarter FY21*  
*November 19, 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. FY21 Budget
9. Marketing
10. Capital Projects Review & Status
11. Other Board Member Items
12. Adjourn

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

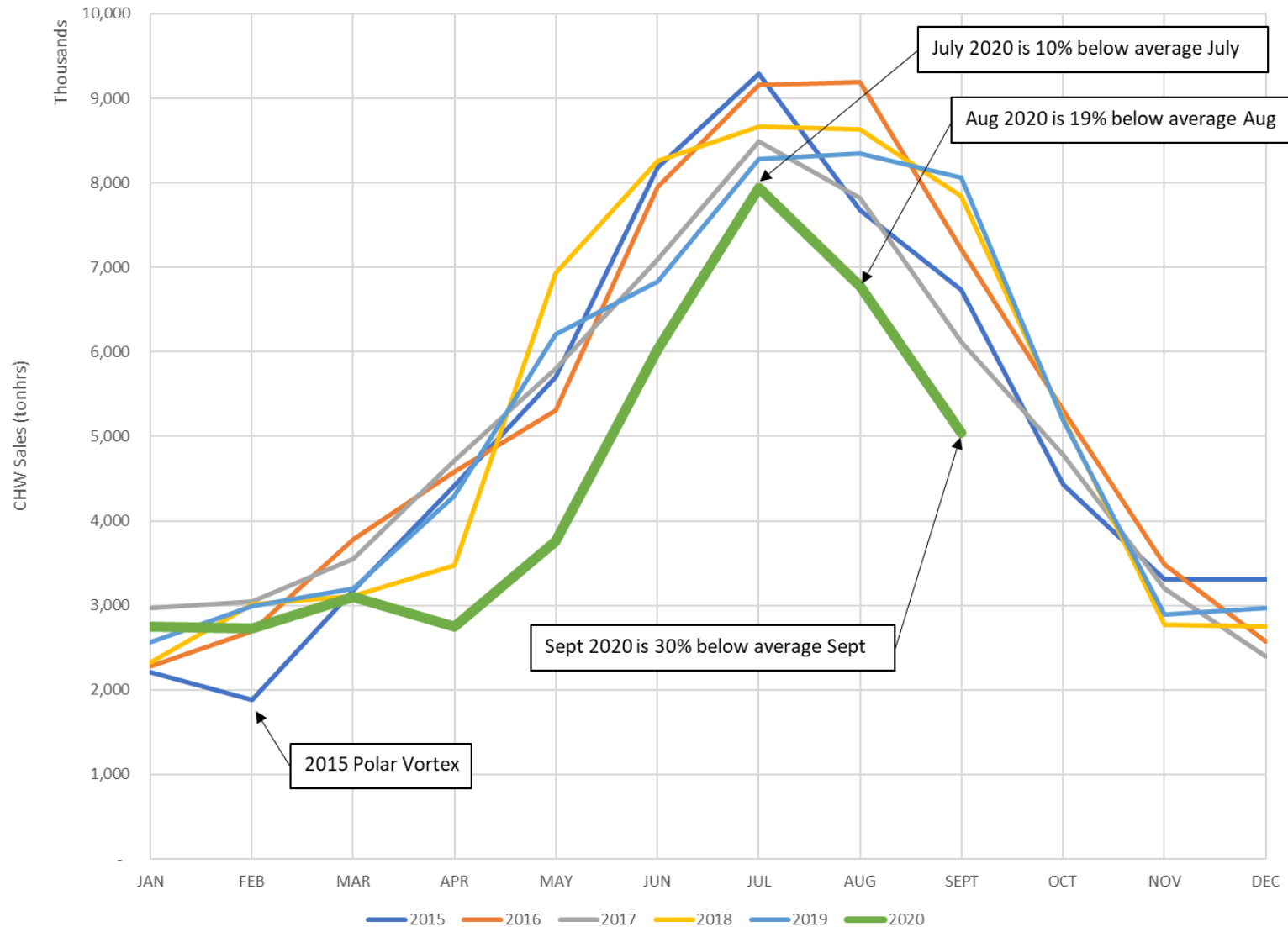
# 3. Customer Sales

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Oct 2018 - Sept 2019	Oct 2019 - Sept 2020	% Diff.	Oct 2018 - Sept 2019	Oct 2019 - Sept 2020	% Diff.
<b>Private</b>	Cost	\$ 1,544,006	\$ 1,230,328	-20.32%	\$ 3,741,968	\$ 3,638,079	-2.78%
	Usage (lbs or tonhrs)	104,312,076	86,805,428	-16.78%	19,813,178	16,757,242	-15.42%
<b>State</b>	Cost	\$ 1,837,797	\$ 1,599,789	-12.95%	\$ 3,221,003	\$ 3,213,054	-0.25%
	Usage (lbs or tonhrs)	115,253,370	104,058,073	-9.71%	12,932,819	12,280,175	-5.05%
<b>Metro</b>	Cost	\$ 1,923,400	\$ 1,583,498	-17.67%	\$ 5,004,052	\$ 4,493,648	-10.20%
	Usage (lbs or tonhrs)	154,722,051	147,083,197	-4.94%	28,775,581	22,879,367	-20.49%
<b>Aggregate</b>	Cost	\$ 5,305,204	\$ 4,413,615	-16.81%	\$11,967,024	\$11,344,781	-5.20%
	Usage (lbs or tonhrs)	374,287,497	337,946,698	-9.71%	61,521,578	51,916,784	-15.61%
	Unit Cost	\$ 14.17	\$ 13.06	-7.9%	\$ 0.195	\$ 0.219	12.34%

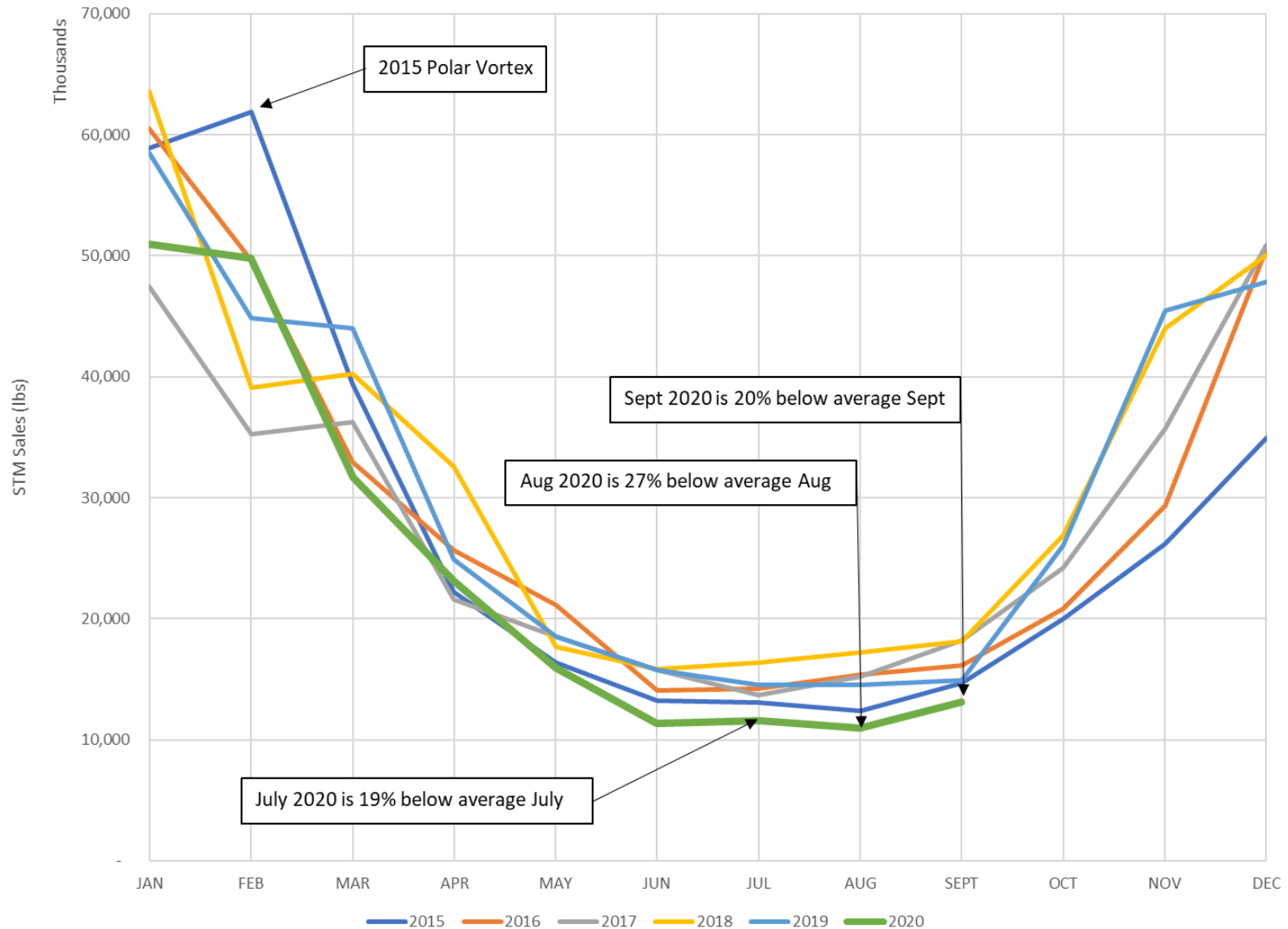
MFA, True-up, late fees and misc. are not included in values shown

# Figure 3A. Historic Chilled Water Sales





# Figure 3B. Historic Steam Sales








## 4. nCOVID-19 Response

- The nCOVID-19 deferral of invoices expired September 30
- Late fees and potential for customer disconnects resumed in October
- Two customers opted for deferral and are making their payments
- There is only 1 customer currently in arrears more than 30 days
- CNE continues to limit access to EGF to essential personnel only
- Tele-meetings and job-site meetings still occurring

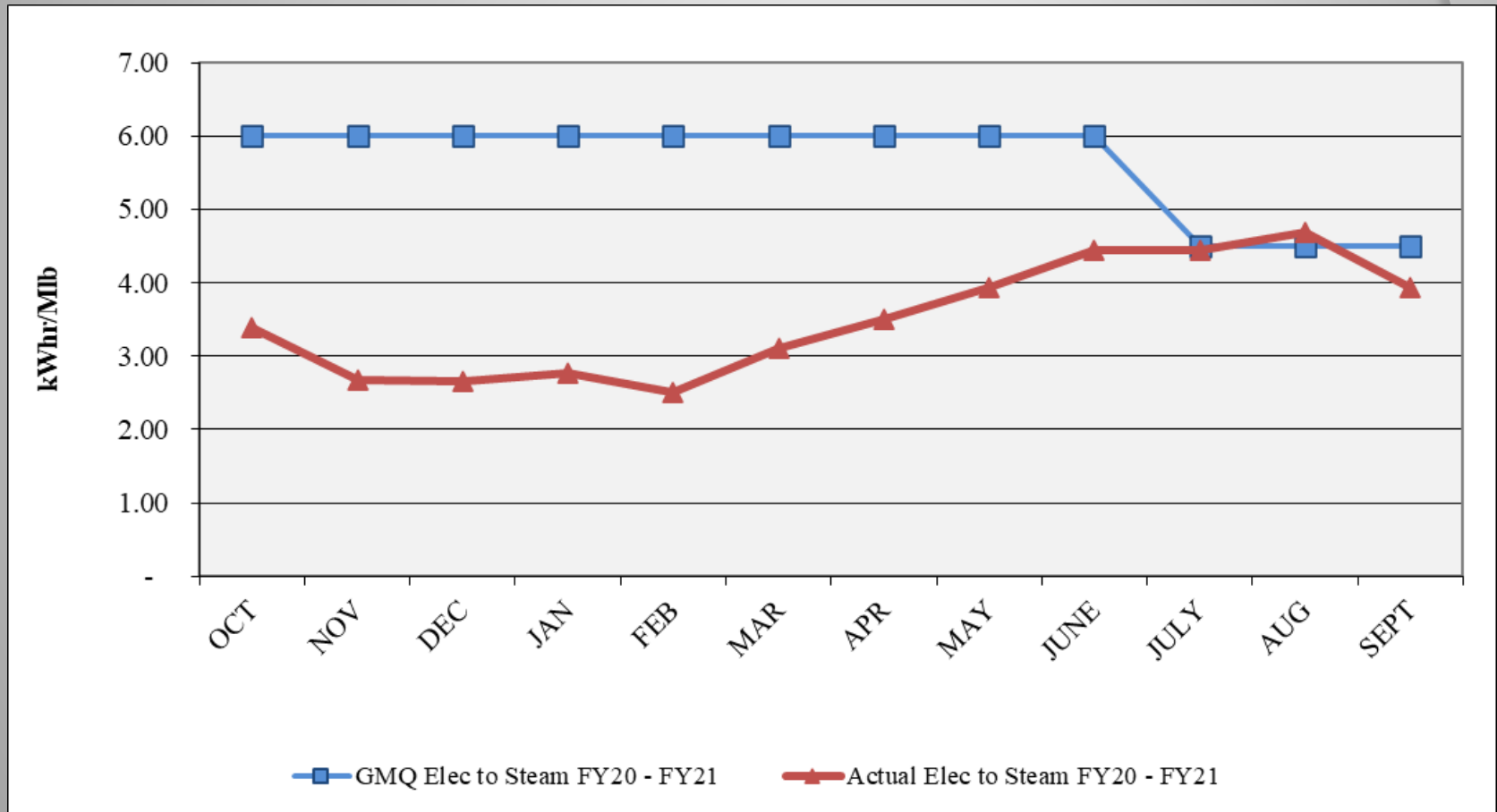
## 5. *Review of DES Contractor Performance*

Contractor (CNE) has met their contractual obligations for FY21 to date except for exceeding some of the new performance guarantees.

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

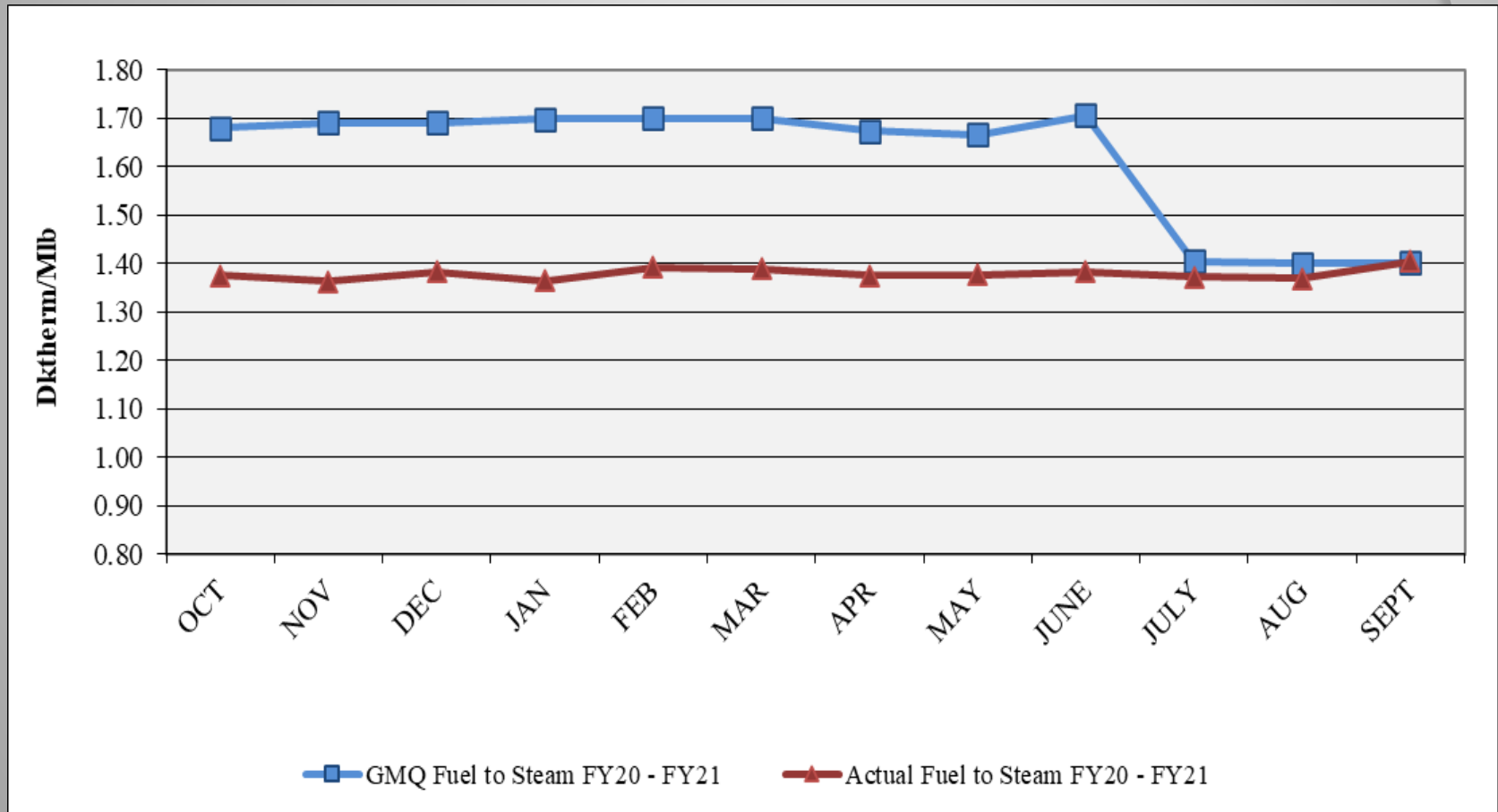


# Performance Measurement FY21: Steam Electric Conversion ●



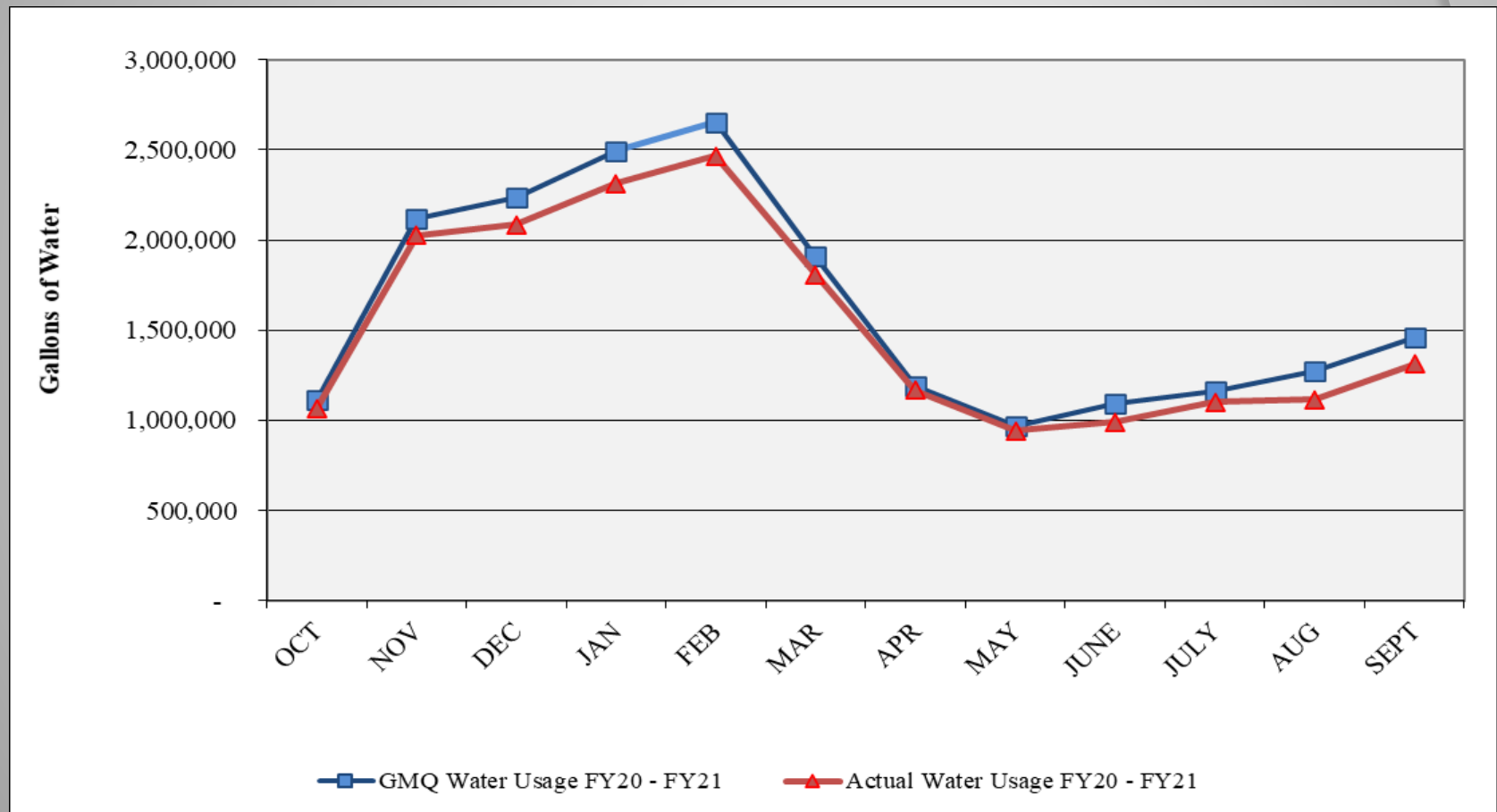
Values of 3.50 to 4.00 in summer months are not unusual. GMQ exceeded in August.

# Performance Measurement FY21: Steam Plant Efficiency



GMQ exceeded in September.

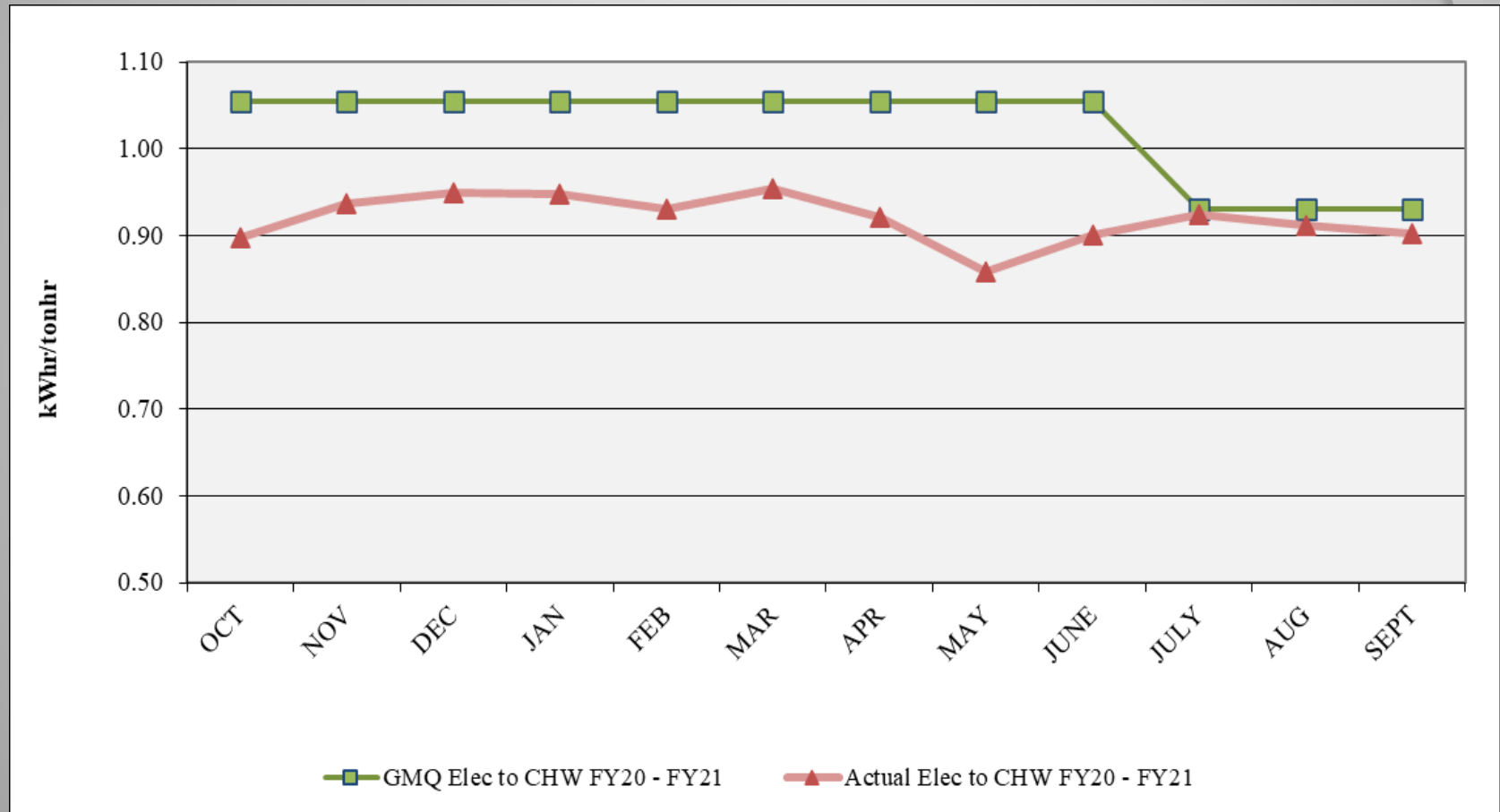
# Performance Measurement FY21: Steam Water Conversion ●



No excursion during the quarter.

# Performance Measurement FY21: CHW

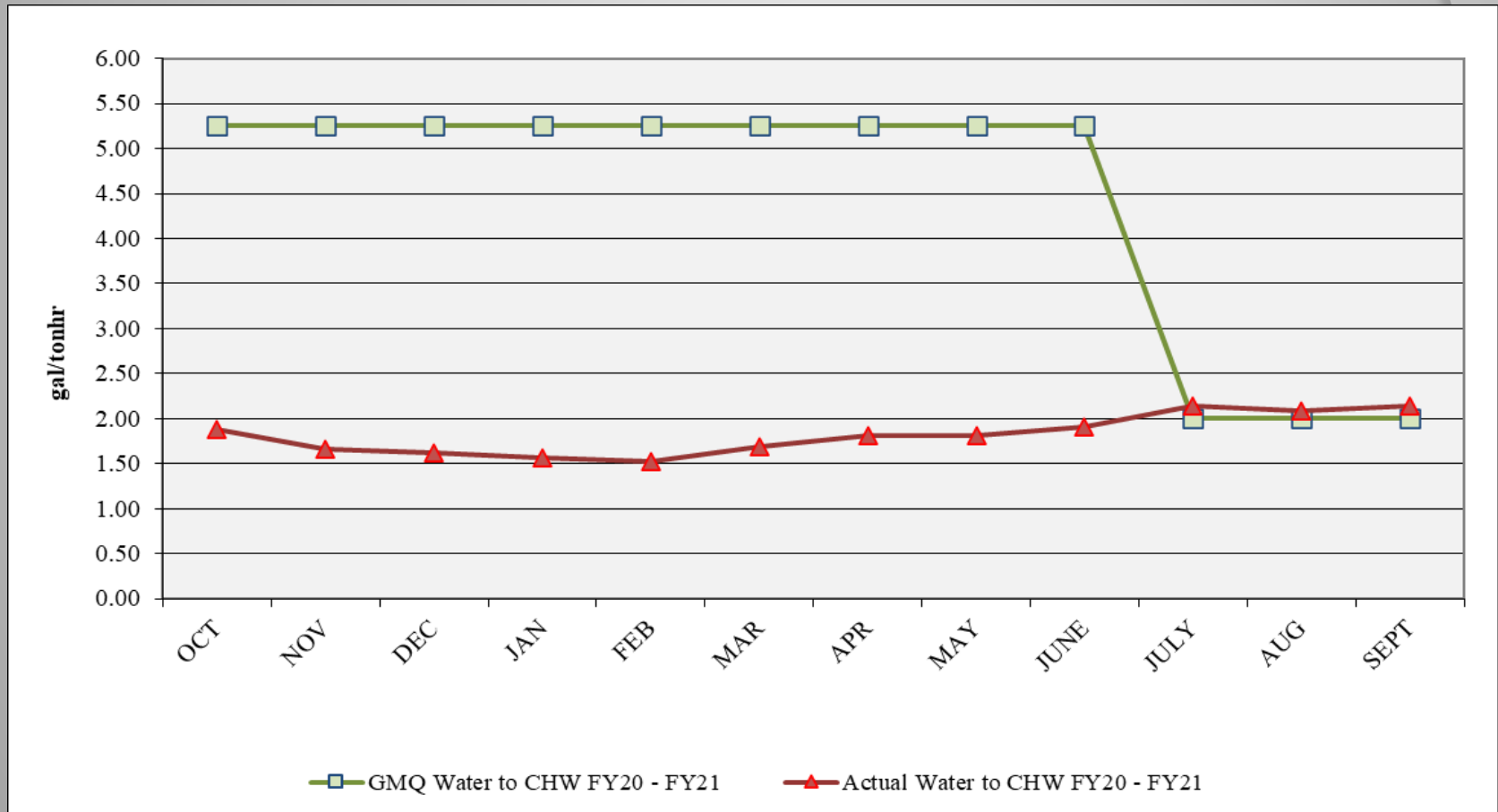
## Electric Conversion ●



No excursion during the quarter; September was at 5-yr average

# Performance Measurement FY21: CHW

## Water Conversion ●



GMQ exceeded each month in 1<sup>st</sup> Quarter but actuals were close.

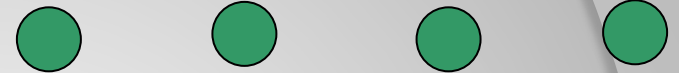


# Water Treatment

Q1FY21    Q4FY20    Q3FY20    Q2FY20

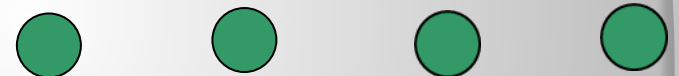
## ❖ Steam and Condensate

- ❖ Corrosion
- ❖ Iron
- ❖ Hardness; dumping condensate
- ❖ Chlorine/Sulfite



## ❖ Condensing Water

- ❖ Conductivity
- ❖ Biologicals



## ❖ Chilled Water

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





# EGF Walkthrough

Q1FY21    Q4FY20    Q3FY20    Q2FY20

✓ Equipment Maintenance	●+	●	●	●
✓ Operations	●	●	●	●
✓ Electrical	●	●	●	●
✓ Housekeeping	●	●	●	●
✓ Building Structure	●	●	●	●
✓ Building Exterior and Grounds	●	●	●	●



# EDS Walkthrough

Q1FY21    Q4FY20    Q3FY20    Q2FY20

✓ Vault/Tunnel Housekeeping	● +	●	●	●
✓ Maintenance Items				
✓ Insulation Repair/ Replacement	●	●	●	●
✓ Water Infiltration	●	●	●	●
✓ Corrosion of Structural Metal Components	●	●	●	●
✓ Safety Items	●	●	●	●



## 6. *Natural Gas Purchasing*

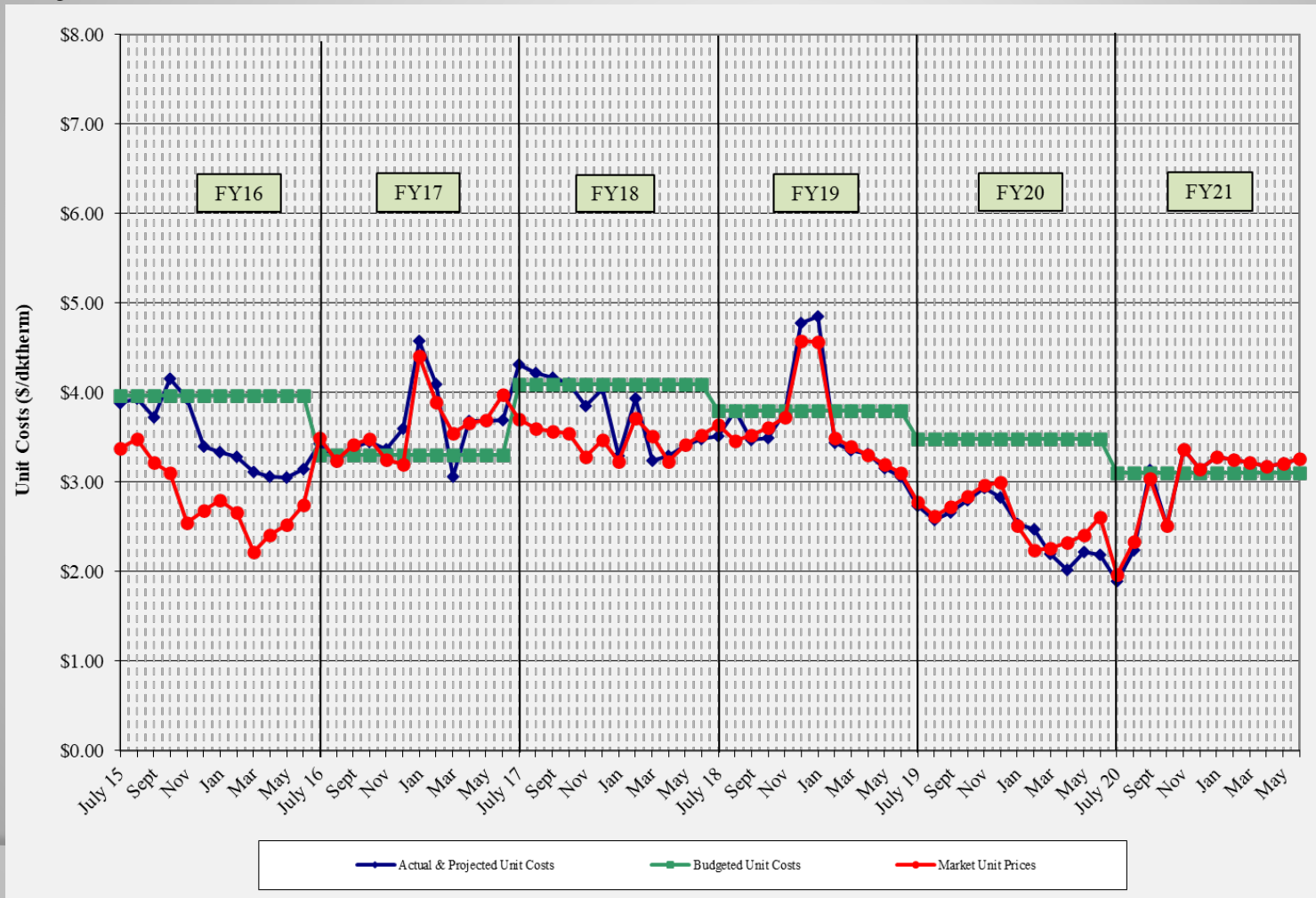
- ❖ Natural Gas Purchasing Review
  - ❖ Table 6: FY21 Gas Spending & Budget Comparison
  - ❖ Figure 6: Actual and Projected Gas Cost Comparison

## Table 6: FY21 Gas Spending & Budget Comparison

		Actual FY21 To Sept 30	Budget FY21	Percent Difference
Steam Sendout (Mlbs)		55,233	63,481	-13.0%
Fuel Use (Dth) (includes propane)	●	76,338	92,175	-17.2%
Plant Eff (Dth/Mlb)	●	1.382	1.452	-4.8%
Total Gas Cost (includes propane)	●	\$186,304	\$273,760	-31.9%
Unit Cost of Fuel (\$/Dth)	●	\$2.441	\$2.970	-17.8%

Excludes consultant fees and FEA and budget contingency; Includes transportation and actual propane costs and usages except unused pre-purchased propane

# Figure 6. Actual and Projected Gas Cost Comparison History



## 7. FY21 Costs to Date

Item	FY21 Budget	FY21 Actual to date	Percent of FY21 Budget
FOC's	\$ 3,776,800	\$ 944,203	25.00%
Pass Throughs			
Administrative Costs	\$ 393,900	\$ 92,199	23.41%
Chemicals	\$ 260,700	\$ 68,435	26.25%
R&I Fund Transfers	\$ 291,900	\$ 72,258	24.75%
Water/Sewer	\$ 624,000	\$ 317,872	50.94%
Fuel Base	\$ 2,001,900	\$ 278,969	13.94%
Fuel Contingency	\$ 431,900	\$ -	0.00%
Electricity	\$ 6,130,100	\$ 1,488,753	24.29%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,098,000	\$ 1,506,473	29.55%
<b>Total Expenses</b>	<b>\$ 19,009,200</b>	<b>\$ 4,769,163</b>	<b>25.09%</b>
<b>Total Revenues</b>	<b>\$ 18,378,500</b>	<b>\$ 4,322,167</b>	<b>23.52%</b>
<b>Metro Funding</b>	<b>\$ 630,700</b>	<b>\$ 157,675</b>	<b>25.00%</b>

Actual Costs and Revenues to Date include FY20 True-up Items.

## 8. 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%
<b>Total Expenses</b>	<b>\$ 20,389,000</b>	<b>\$ 19,009,200</b>	<b>-6.77%</b>
<b>Total Revenues</b>	<b>\$ 19,070,500</b>	<b>\$ 18,378,500</b>	<b>-3.63%</b>
<b>Metro Funding</b>	<b>\$ 1,318,500</b>	<b>\$ 630,700</b>	<b>-52.17%</b>

## 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 1<sup>st</sup> Ave S, 2<sup>nd</sup> 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. Capital Expenditure Update

	<b>Spent to End of FY20</b>	<b>FY21 Spending</b>	<b>Balance to Date (10/21/20)</b>
R&I Projects	\$3,887,279	\$11,400	\$225,289
49109-2010 Bond	\$2,600,602	\$5,314	\$0
49107-DES Infrastructure Fund	\$8,499,961	\$39	\$0
49116-DES Infrastructure Fund	\$1,568,389	\$190,596	\$1,041,861
<b>Total</b>	<b>\$16,556,231</b>	<b>\$207,349</b>	<b>\$1,267,150</b>

# *Capital Projects Review*

## Active Capital Projects

- 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 2<sup>nd</sup> or early 3<sup>rd</sup> Qtr FY21
- DES 153: MH L Repairs – anticipate construction 2<sup>nd</sup> Qtr FY21
- DES 154: Manhole K Repairs – postponed until FY21/FY22; will prioritize based upon other projects
- DES 159: MH B2 Repairs – pipe wall pen. leak discovered/ added to scope; contractor ownership chg has resulted in delay; anticipate completion early 2<sup>nd</sup> Qtr FY21



# *Capital Projects Review*

## Active Capital Projects - continued

- DES 161: MH S6 Insulation – combining with DES 143; postponed
- DES 162: Hyatt Centric Service – service completed in September; chilled water available; project closed
- DES 163: MDHA Parcel K Service – development on hold
- DES 168: DES Service to 1<sup>st</sup> and KVB Hotels – development on hold
- DES 169: MH 20 Repairs – work completed late 1<sup>st</sup> Qtr; in close-out



# *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; bid 1<sup>st</sup> Qtr FY21; anticipate construction during 2<sup>nd</sup> Qtr FY21
- DES 172: Viridian Service Line Support Repairs – corroded pipe supports to be repaired/replaced; ladder safety item to be addressed; bid 1<sup>st</sup> Qtr FY21; anticipate construction during 2<sup>nd</sup> Qtr FY21
- DES 173: Manhole B3 Repairs – corroded pipe supports to be cleaned and coated; concrete repairs to be made; bid 1<sup>st</sup> Qtr FY21; anticipate construction during 2<sup>nd</sup> Qtr FY21
- DES 174: 7<sup>th</sup> Avenue Tunnel Pipe Support Repairs – corroded pipe supports to be repaired/replaced; ladder safety item to be addressed; bid 1<sup>st</sup> Qtr FY21; anticipate construction during 2<sup>nd</sup> Qtr FY21



# *Capital Projects Review*

## Active Capital Projects - continued

- DES 175: Manhole 4 Condensate Return – condensate return between MH 3 & 4 (Union St) failed several years ago; cost prohibitive to replace; therefore installed trap discharge piping into basement of 401 Union; trap discharge piping has now failed; dripleg/trap is not needed based on existing pipe slopes and current steam contract usage; design to eliminate dripleg/trap completed; anticipate construction during 2<sup>nd</sup> Qtr FY21
- DES 176: Condensate Return Leak Repair at MH 9 – discovered leak in condensate main next to MH 9; repair completed 1<sup>st</sup> Qtr FY21; in close-out

# *Capital Projects Review*

## Active Capital Projects - continued

- DES177: MH B1 Ladder & Platform – sump pump manhole without maintenance platform (currently using submerged concrete blocks to stand on); embedded ladder rung ladder which is prone to failure w/o warning; design complete; project on hold
- DES178: Manhole 5 Repairs – structural steel is corroded and needs to be cleaned/coated to prevent further degradation; project on hold
- DES179: Manhole 11 Repairs - structural steel is corroded and needs to be cleaned/coated to prevent further degradation; project on hold

# *Capital Projects Review*

## Active Capital Projects - continued

- DES180: State Tunnel Pipe Support Repair – structural steel is corroded and needs to be cleaned/coated to prevent further degradation; project on hold
- DES181: CHW and CND Leak Repairs on 3<sup>rd</sup> Ave N – CHW was discovered leaking into MH D through an abandoned pipe wall penetration; the sump pumps in nearby MH D1 were running constantly due to CHW infiltration; the trap in MH D was firing consistently due to the CHW around the steam piping outside of MH D. Leak was discovered & repaired at a wet-tap tee west of MH D. Upon completion of CHW leak repair, hot water was discovered coming into MH D1; 2<sup>nd</sup> excavation discovered deteriorated CND return piping; a section of ~ 8 feet of CND piping was replaced.

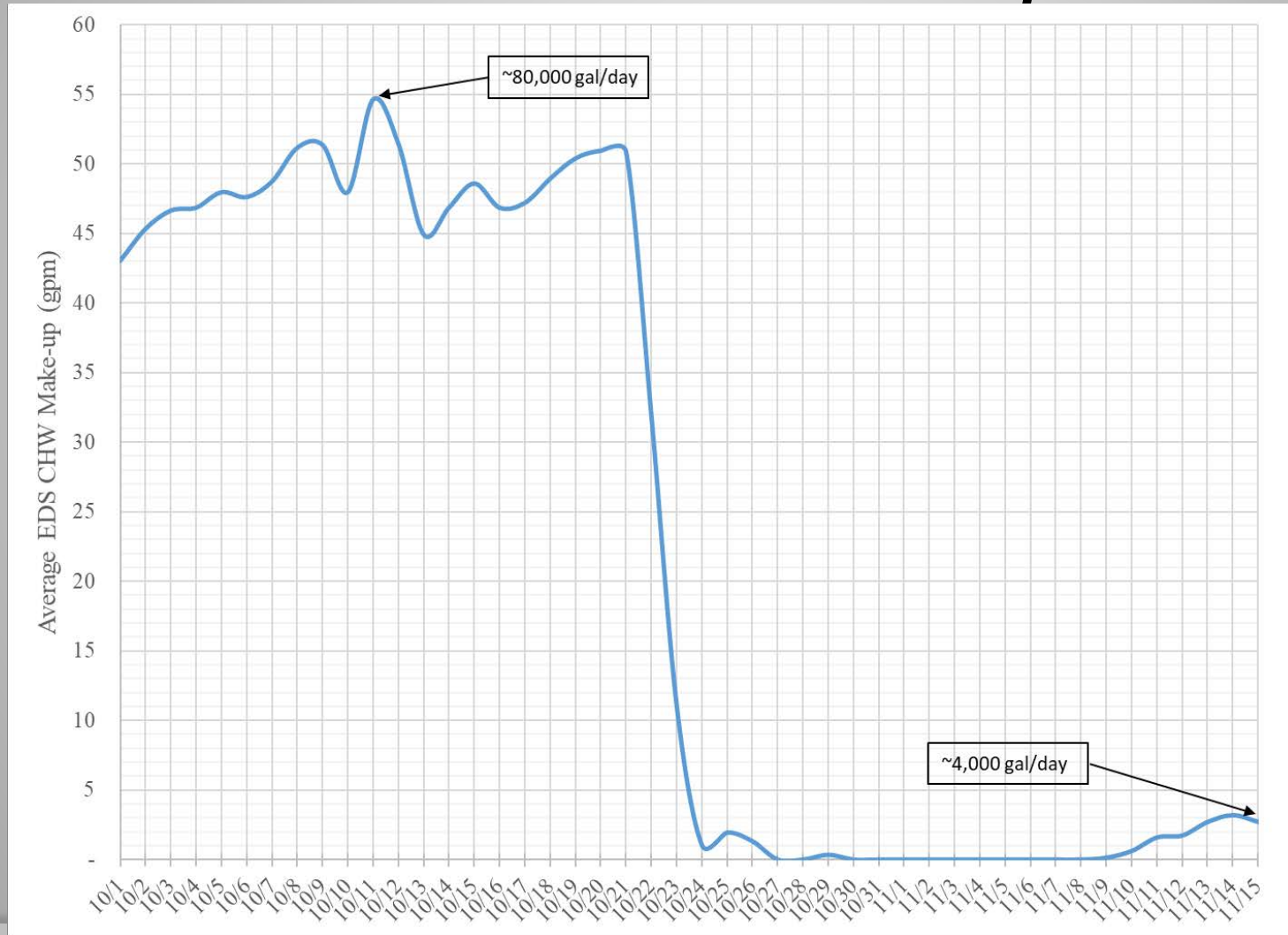
# *Capital Projects Review*

## Capital Projects in Closed During 1<sup>st</sup> Qtr FY21

- DES162
- DES169
- DES176



# Chilled Water EDS Make-up



Leak found and repaired late October on 3<sup>rd</sup> Ave N

# *11. Other Board Member Items*

# *12. Adjourn*

- *Advisory Board Meeting Schedule*
- FY21 – 2<sup>nd</sup> Quarter Meeting – February 18, 2021
- FY21 – 3<sup>rd</sup> Quarter Meeting – May 20, 2021
- FY21 – 4<sup>th</sup> Quarter Meeting – August 19, 2021
- FY22 – 1<sup>st</sup> Quarter Meeting – November 18, 2021