



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

*DES Advisory Board Meeting*  
*Third Quarter FY21*  
*May 20, 2021*

# *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

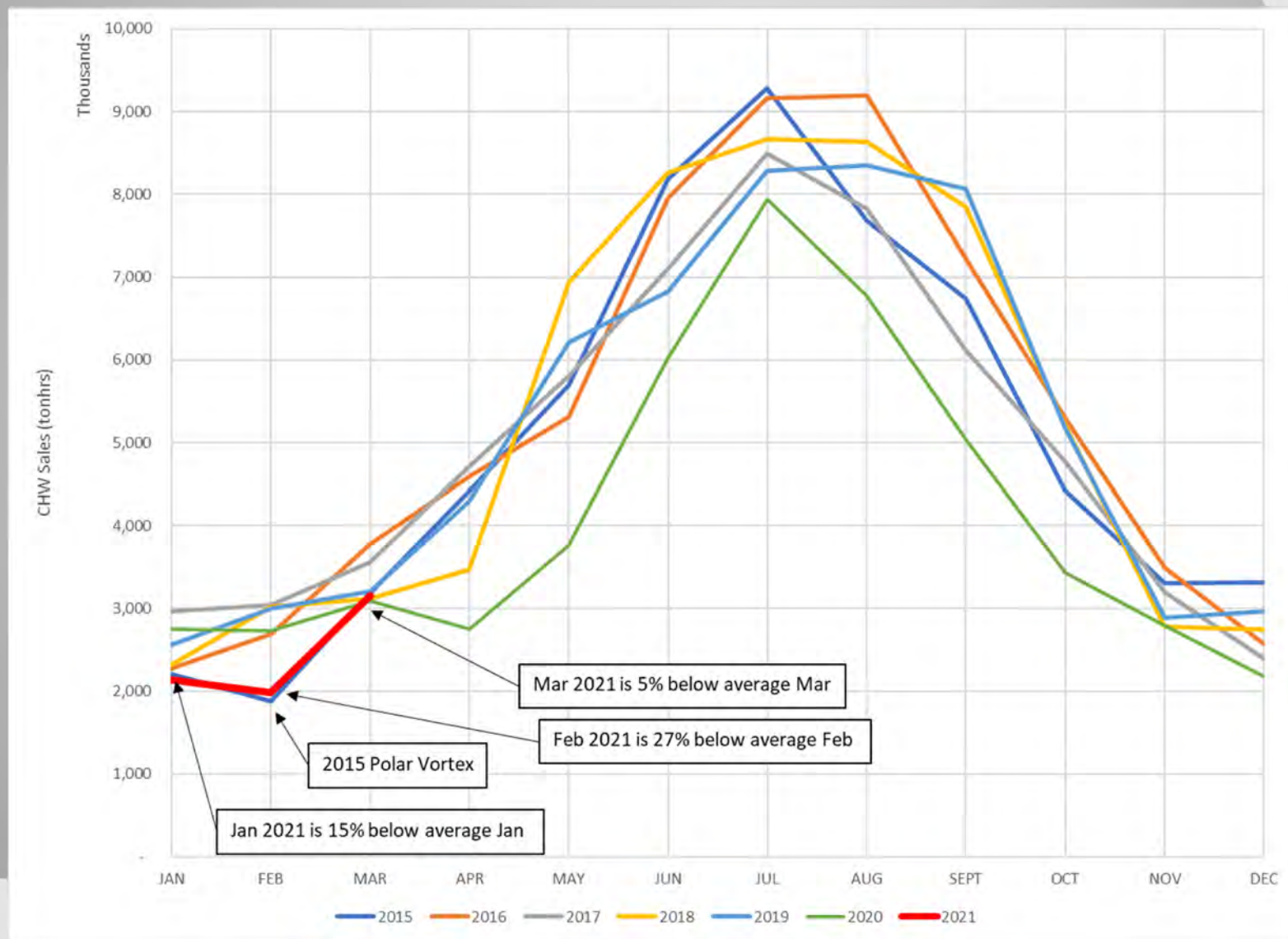
## 3. Customer Sales

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Apr 2019 - Mar 2020	Apr 2020 - Mar 2021	% Diff.	Apr 2019 - Mar 2020	Apr 2020 - Mar 2021	% Diff.
<b>Private</b>	Cost	\$ 1,337,044	\$ 1,226,179	-8.29%	\$ 3,745,906	\$ 3,548,471	-5.27%
	Usage (lbs or tonhrs)	96,990,379	76,373,087	-21.26%	20,034,342	15,610,835	-22.08%
<b>State</b>	Cost	\$ 1,630,976	\$ 1,724,482	5.73%	\$ 3,202,633	\$ 3,210,666	0.25%
	Usage (lbs or tonhrs)	105,276,649	111,330,733	5.75%	12,608,214	12,509,583	-0.78%
<b>Metro</b>	Cost	\$ 1,686,055	\$ 1,603,559	-4.89%	\$ 4,906,028	\$ 4,169,315	-15.02%
	Usage (lbs or tonhrs)	152,699,848	135,107,666	-11.52%	28,999,663	19,865,495	-31.50%
<b>Aggregate</b>	Cost	\$ 4,654,075	\$ 4,554,220	-2.15%	\$11,854,567	\$10,928,452	-7.81%
	Usage (lbs or tonhrs)	354,966,876	322,811,486	-9.06%	61,642,219	47,985,913	-22.15%
	Unit Cost	\$ 13.11	\$ 14.11	7.6%	\$ 0.192	\$ 0.228	18.42%

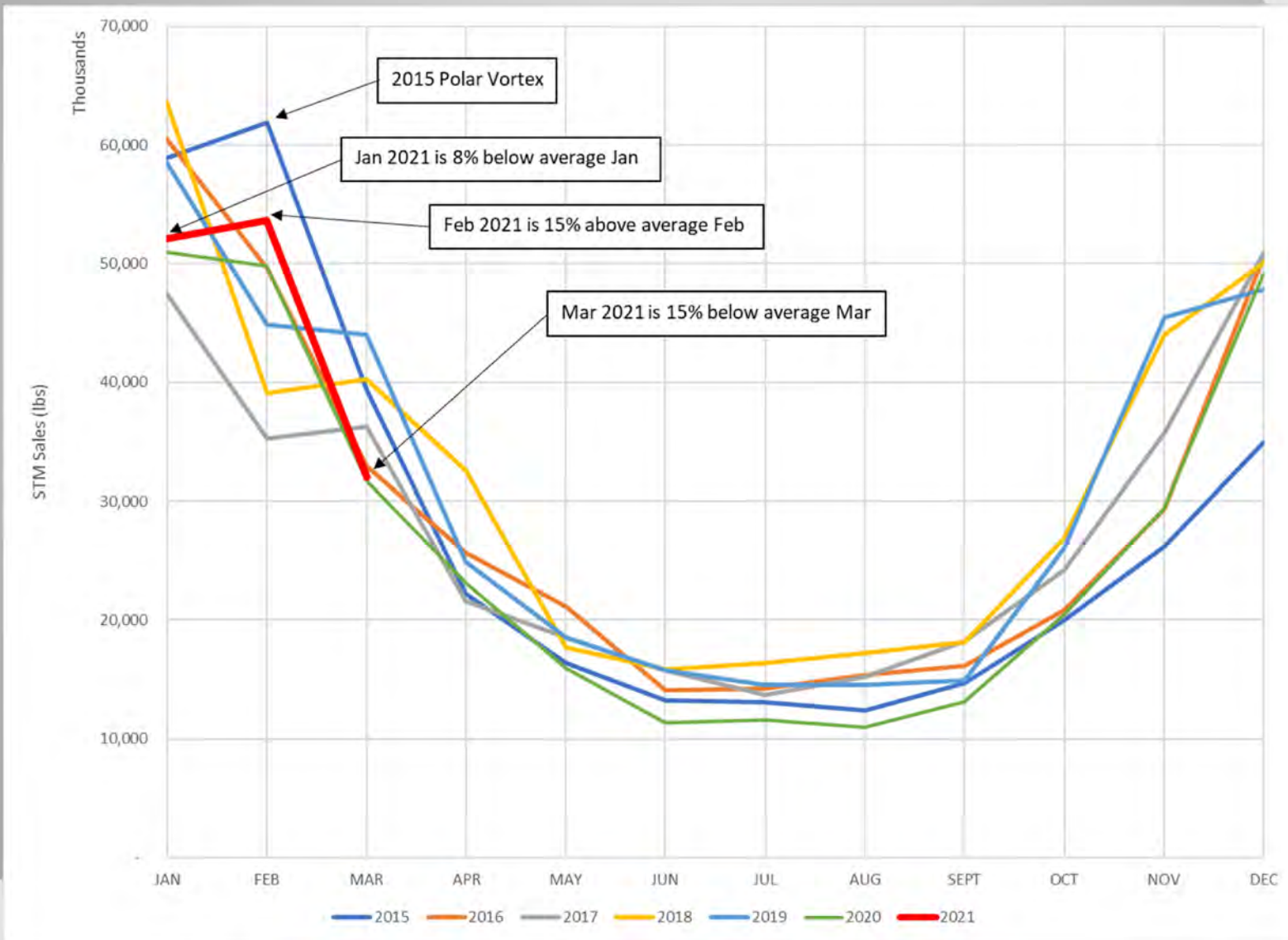
MFA, True-up, late fees and misc. are not included in values shown

# Figure 3A. Historic Chilled Water Sales





# Figure 3B. Historic Steam Sales






## 4. nCOVID-19 Response

- DES Advisory Board voted in First and Second Quarter meeting to waive late fees and revisit issue this meeting
- Two customers opted for deferral last summer and are making their payments; no new customer deferrals or requests
- There are no customers 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

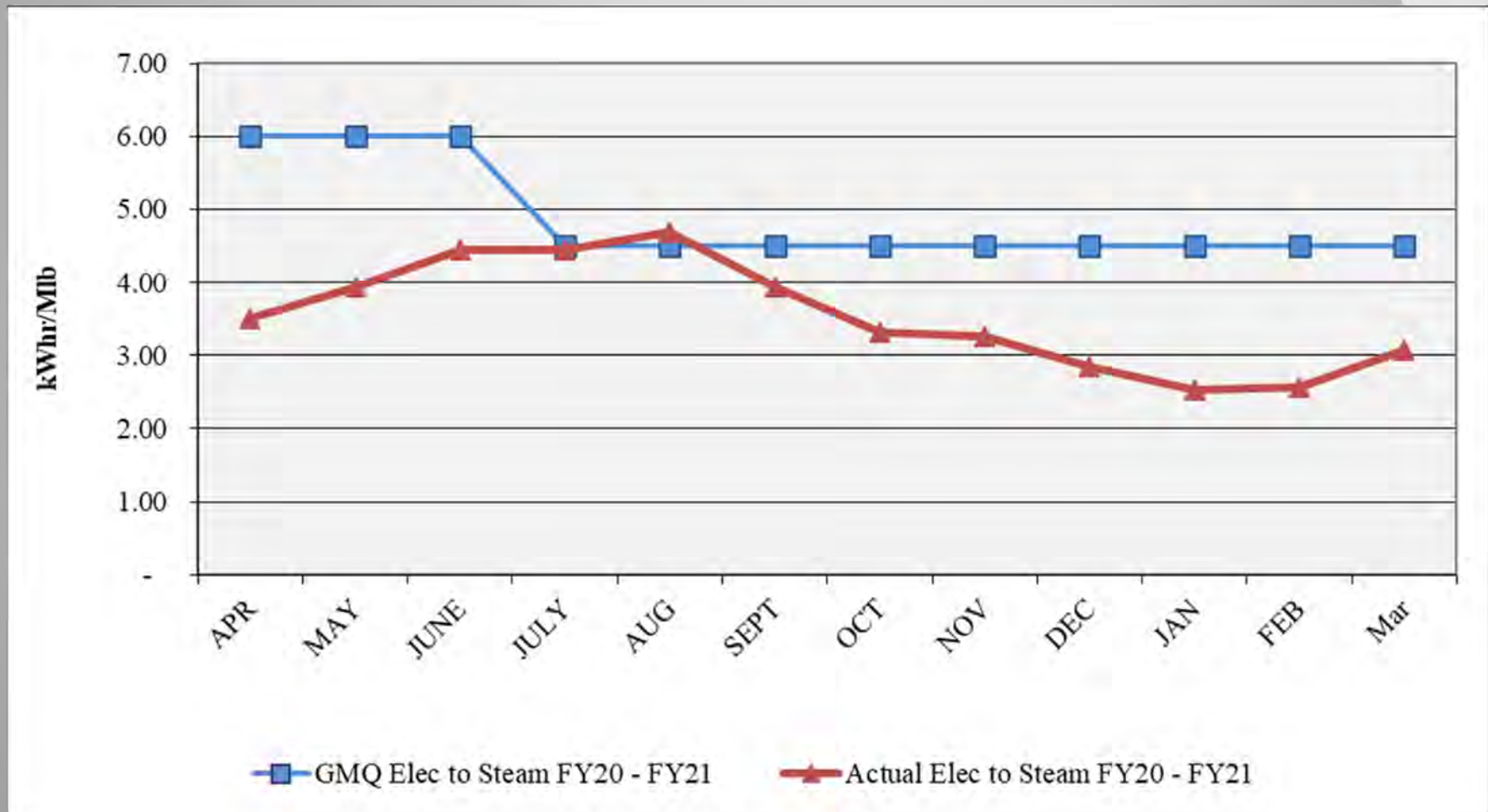
## *5. Review of DES Contractor Performance*

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

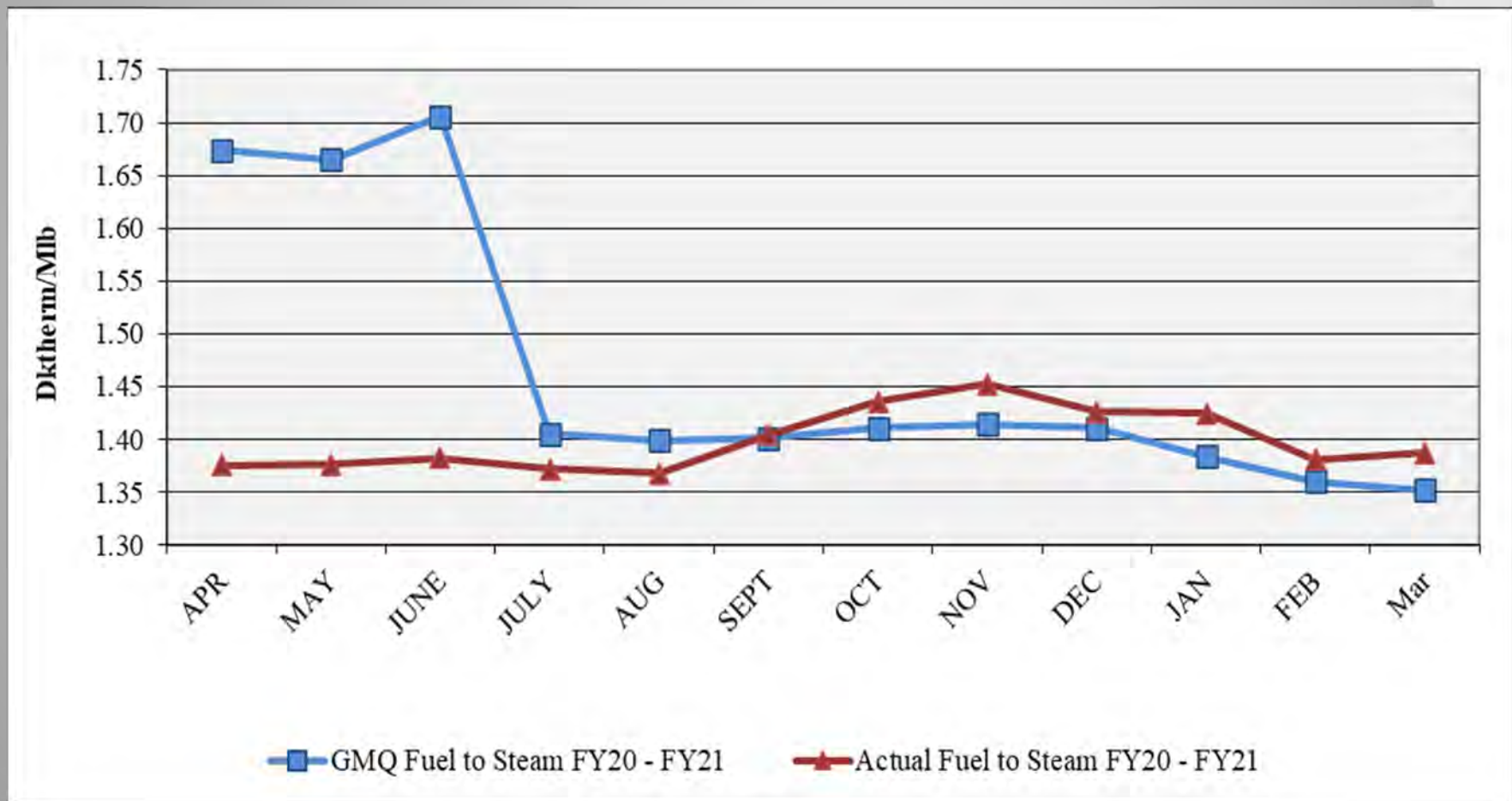


# Performance Measurement FY21: Steam Electric Conversion ●



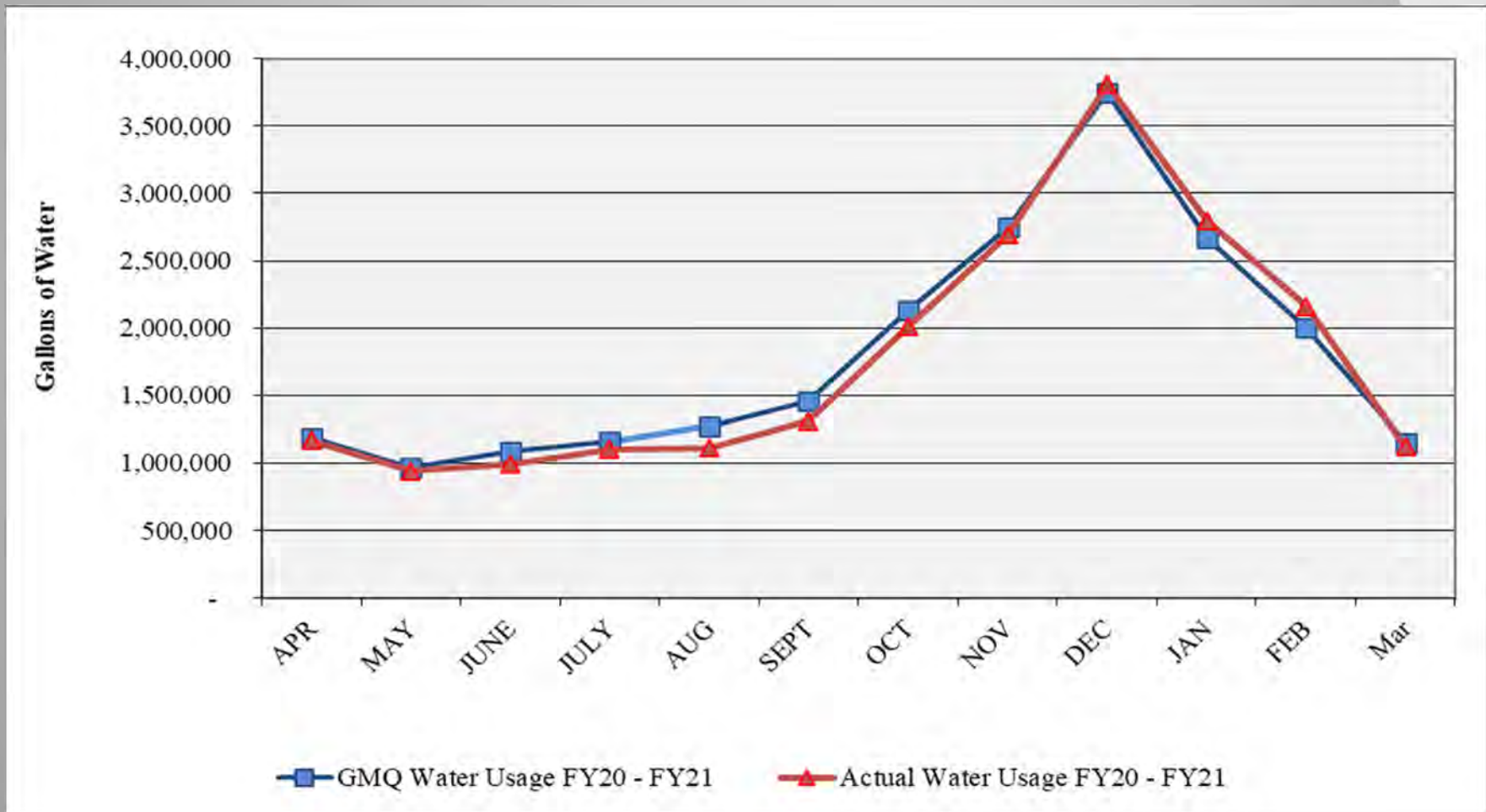
GMQ exceeded in August.

# Performance Measurement FY21: Steam Plant Efficiency



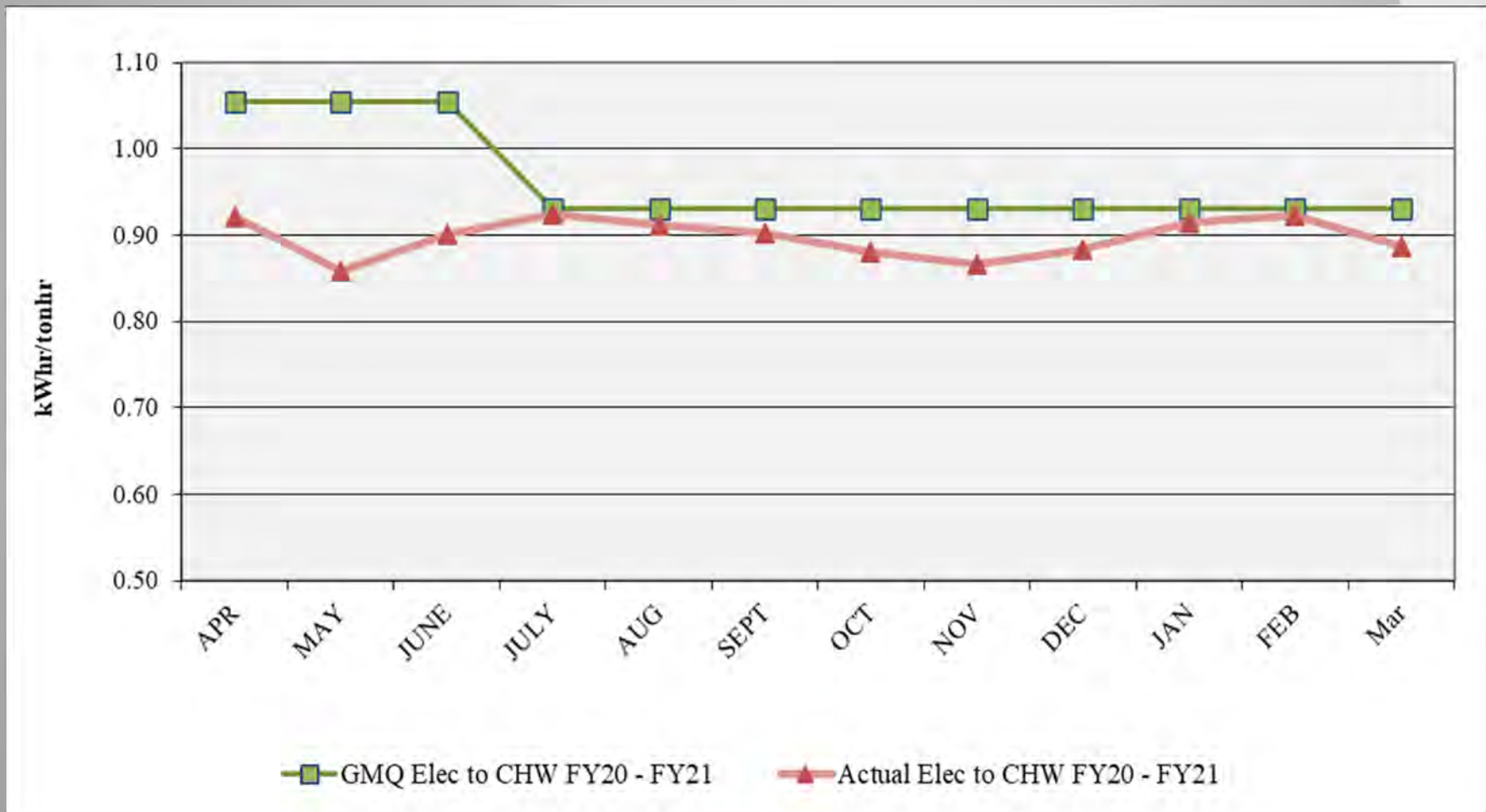
GMQ exceeded in Sept, Oct, Nov, Dec, Jan, Feb and Mar. Actuals ~2.5% higher than usual.

# Performance Measurement FY21: Steam Water Conversion ●



GMQ exceeded in Dec, Jan and Feb.

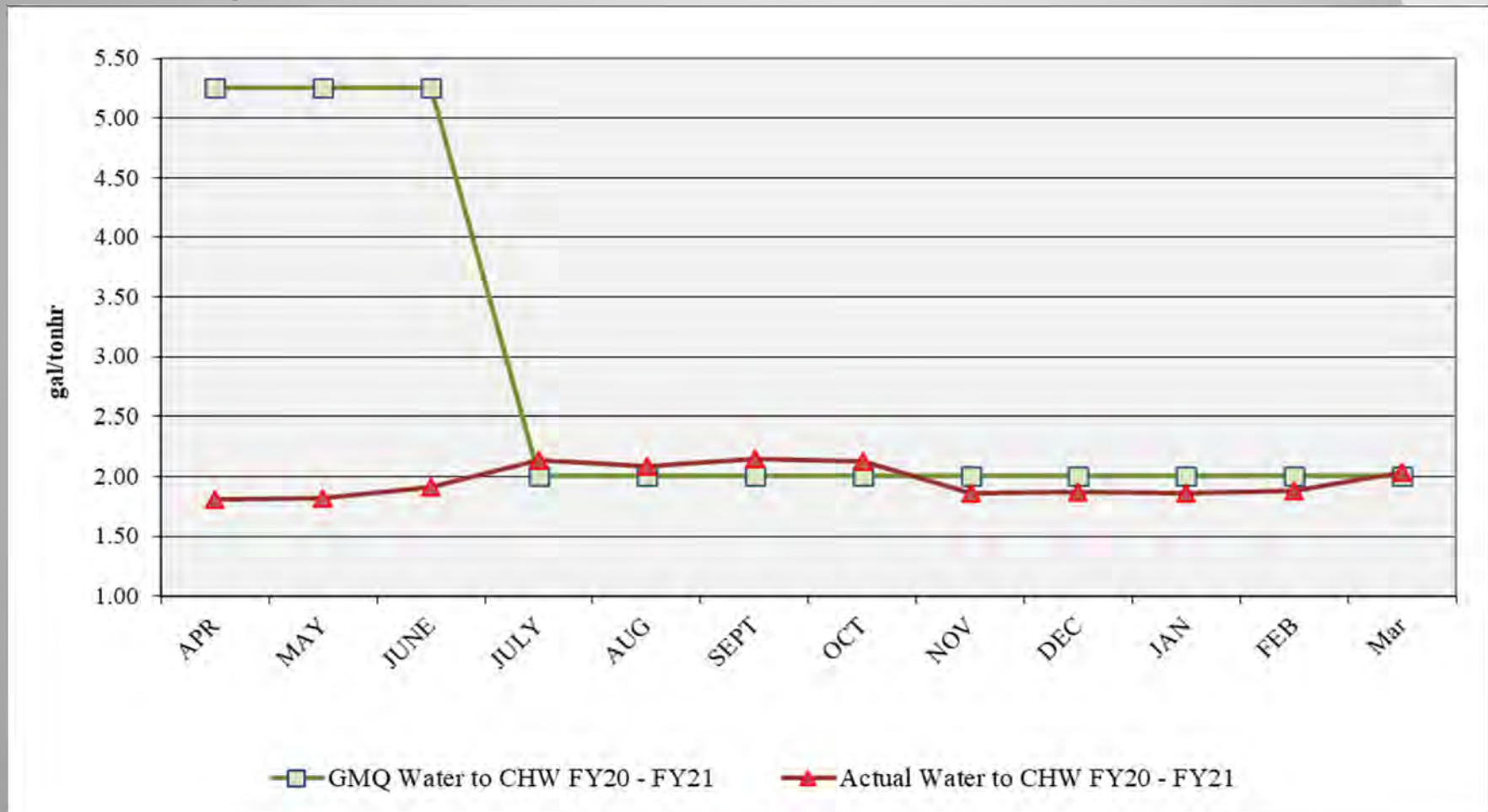
# Performance Measurement FY21: CHW Electric Conversion ●



No excursion during the fiscal year.



# Performance Measurement FY21: CHW Water Conversion ●



GMQ exceeded July, Aug, Sept, Oct and Mar.





# Water Treatment

Q3FY21    Q2FY21    Q1FY21    Q4FY20

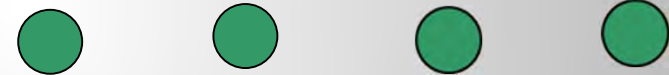
## ❖ Steam and Condensate

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



## ❖ Condensing Water

- ❖ Conductivity
- ❖ Biologicals



## ❖ Chilled Water

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



# EGF Walkthrough

Q3FY21    Q2FY21    Q1FY21    Q4FY20

✓ 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

	Q3FY21	Q2FY21	Q1FY21	Q4FY20
✓ Vault/Tunnel Housekeeping	● +	● +	● +	●
✓ Maintenance Items <ul style="list-style-type: none"><li>✓ Insulation Repair/Replacement</li></ul>	●	●	●	●
✓ 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

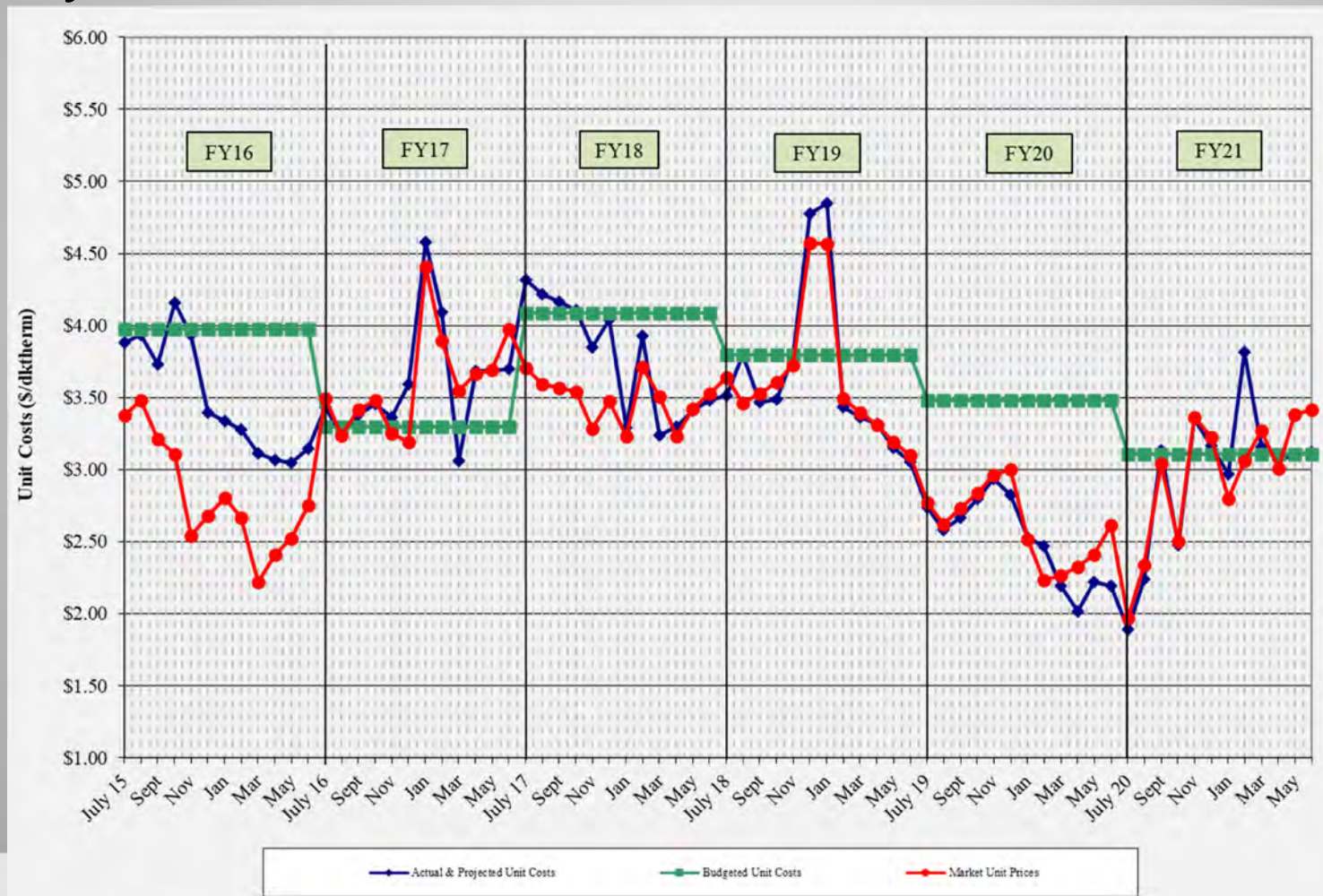
## Table 6: FY21 Gas Spending & Budget Comparison

		Actual FY21 To Apr 30	Budget FY21	Percent Difference
Steam Sendout (Mlbs)		321,477	337,248	-4.7%
Fuel Use (Dth) (includes propane)	●	453,080	489,684	-7.5%
Plant Eff (Dth/Mlb)	●	1.409	1.452	-3.0%
Total Gas Cost (includes propane)	●	\$1,396,297	\$1,536,925	-9.1%
Unit Cost of Fuel (\$/Dth)	●	\$3.082	\$3.139	-1.8%

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	\$ 2,832,608	75.00%
Pass Throughs			
Administrative Costs	\$ 393,900	\$ 273,905	69.54%
Chemicals	\$ 260,700	\$ 194,595	74.64%
R&I Fund Transfers	\$ 291,900	\$ 218,925	75.00%
Water/Sewer	\$ 624,000	\$ 635,843	101.90%
Fuel Base	\$ 2,001,900	\$ 1,499,546	74.91%
Fuel Contingency	\$ 431,900	\$ -	0.00%
Electricity	\$ 6,130,100	\$ 2,844,005	46.39%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,098,000	\$ 3,824,712	75.02%
<b>Total Expenses</b>	<b>\$ 19,009,200</b>	<b>\$ 12,324,140</b>	<b>64.83%</b>
<b>Total Revenues</b>	<b>\$ 18,378,500</b>	<b>\$ 11,773,514</b>	<b>64.06%</b>
<b>Metro Funding</b>	<b>\$ 630,700</b>	<b>\$ 473,025</b>	<b>75.00%</b>

Actual Costs and Revenues to Date include FY20 True-up Items and exclude 4<sup>th</sup> Qtr debt service.

## 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 (Peabody Union)
  - Site directly to the east of EGF
  - Conversations restarted with owner's team
  - Potential 500 to 1,500 ton load but no steam



## *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
  - Development stalled
- Peabody St Hotel
  - Potential 2,000 to 3,000 tons
- New Development North of KVB
  - Potential ~1,100 tons and ~15,000 pph



## *Marketing (con't)*

- Union Street Hotel
  - Ongoing renovation of existing building on Union St
  - Developer waiting on financing approval
  - Potential 100 tons and no steam
- Molloy St Development
  - Early stages of discussions

# 10. Capital Expenditure Update

	<b>Spent to End of FY20</b>	<b>FY21 Spending</b>	<b>Balance to Date (04/30/21)</b>
R&I Projects	\$3,887,279	\$357,142	\$25,518
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	\$823,847	\$407,090
<b>Total</b>	<b>\$16,556,231</b>	<b>\$1,186,342</b>	<b>\$432,608</b>

## *Capital Projects Review*

### **Active Capital Projects – General & Marketing**

- DES 133.1: Broadway Tunnel Damage Recovery - ongoing
- DES 139: Options Review - ongoing
- DES 163: Peabody Union – ongoing
- DES 168: DES Service to 1<sup>st</sup> and KVB Hotels – development on hold

## *Capital Projects Review*

### **Active Capital Projects – Corrosion Repair/Prevention**

- DES 153: MH L Repairs – anticipate completion 4<sup>th</sup> Qtr FY21
- DES 171: Broadway Tunnel Pipe Support Repairs – construction began 2<sup>nd</sup> Qtr; anticipate completion 4<sup>th</sup> Qtr FY21
- DES 172: Viridian Service Line Support Repairs – construction began 2<sup>nd</sup> Qtr; anticipate completion 4<sup>th</sup> Qtr FY21
- DES 173: Manhole B3 Repairs – construction/completion 2<sup>nd</sup> Qtr FY21; final punch list review completed; anticipate close-out in 4<sup>th</sup> Qtr FY21
- DES 174: 7<sup>th</sup> Avenue Tunnel Pipe Support Repairs – construction began 2<sup>nd</sup> Qtr; anticipate completion 4<sup>th</sup> Qtr FY21

## *Capital Projects Review*

### **Active Capital Projects – Piping Repairs/Modifications**

- DES 175: Manhole 4 Condensate Return – in close out
- DES 181: CHW and CND Leak Repairs on 3<sup>rd</sup> Ave N – in close out
- DES 182: MH B10 Exp Jt Replacement – steam exp. jt. bound & requires replacement along w/anchor repairs; requires isolation of MCC; anticipate construction 4<sup>th</sup> Qtr FY21
- DES 183: Hermitage Hotel Svc Line Modifications – Hotel installing grease trap which may req. modifications to steam, condensate & chilled water svc piping; awaiting plan from hotel contractor
- DES 184: 7<sup>th</sup> Ave N Steam Leak Repair – CNE detected numerous “hot spots” in 7<sup>th</sup> Ave. N.; steam emanating from steam piping end can vent in MH23; excavated and discovered extensive degradation of steam piping insulation (ground water infiltration was causing secondary steaming); repaired 30 ft of insulation; backfilled; awaiting cost substantiation; anticipate close-out in 4<sup>th</sup> Qtr FY21



## *Capital Projects Review*

### **Active Capital Projects – Piping Repairs/Modifications**

- DES 185: 5<sup>th</sup> Ave N Exploratory Excavation – condensate flowing into MH10; found & repaired leak; discovered no insulation on buried steam piping and steam penetration into MH10 off center and end can corroded beyond repair; discovered severe external corrosion on condensate piping section; new steam and condensate piping sections ordered; awaiting delivery to install; requires partial system shut down; anticipate construction completion during 4<sup>th</sup> Qtr FY21.
- DES 186: Printers Alley Exploratory Excavation – CNE discovered “hot spots” in alley; exploratory excavation revealed condensate leak and damaged piping casing; section of condensate piping replaced; field insulation to be installed; anticipate construction completion during 4<sup>th</sup> Qtr FY21

## *Capital Projects Review*

### **Capital Projects – Anticipated Construction in FY22**

- DES 152: MH A & M Coating Repairs – (MH B added to scope) corrosion repairs
- DES 154: MH K Repairs – corrosion/concrete repairs
- DES 161: MH S6 Insulation – combining w/MH N1 & N2
- DES 177: MH B1 Ladder & Platform – safety; sump pump MH; needs maintenance platform & new ladder; design complete
- DES 178: MH 5 Repairs – corrosion/concrete/insulation repairs
- DES 179: MH 11 Repairs - corrosion/concrete/insulation repairs
- DES 180: State Tunnel Pipe Support Repair – corrosion repairs

## *Capital Projects Review*

### **Capital Projects – Closed/In Close-out**

- DES 175: MH 4 Condensate
- DES 181: 3<sup>rd</sup> Ave. N. Exploratory Excavation

# *11. Other Board Member Items*

*ISC and New Customer Representative  
Elections*

# *12. Adjourn*

- *Advisory Board Meeting Schedule*
- FY21 – 4<sup>th</sup> Quarter Meeting – August 19, 2021
- FY22 – 1<sup>st</sup> Quarter Meeting – November 18, 2021
- FY22 – 2<sup>nd</sup> Quarter Meeting – February 17, 2022
- FY22 – 3<sup>rd</sup> Quarter Meeting – May 19, 2022