



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

*DES Advisory Board Meeting*  
*Second Quarter FY22*  
*February 17, 2022*



# 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. FY22 Costs to Date and Budget
8. Marketing
9. Capital Projects Review & Status
10. Constellation NewEnergy Update
11. Other Board Member Items
12. Adjourn

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

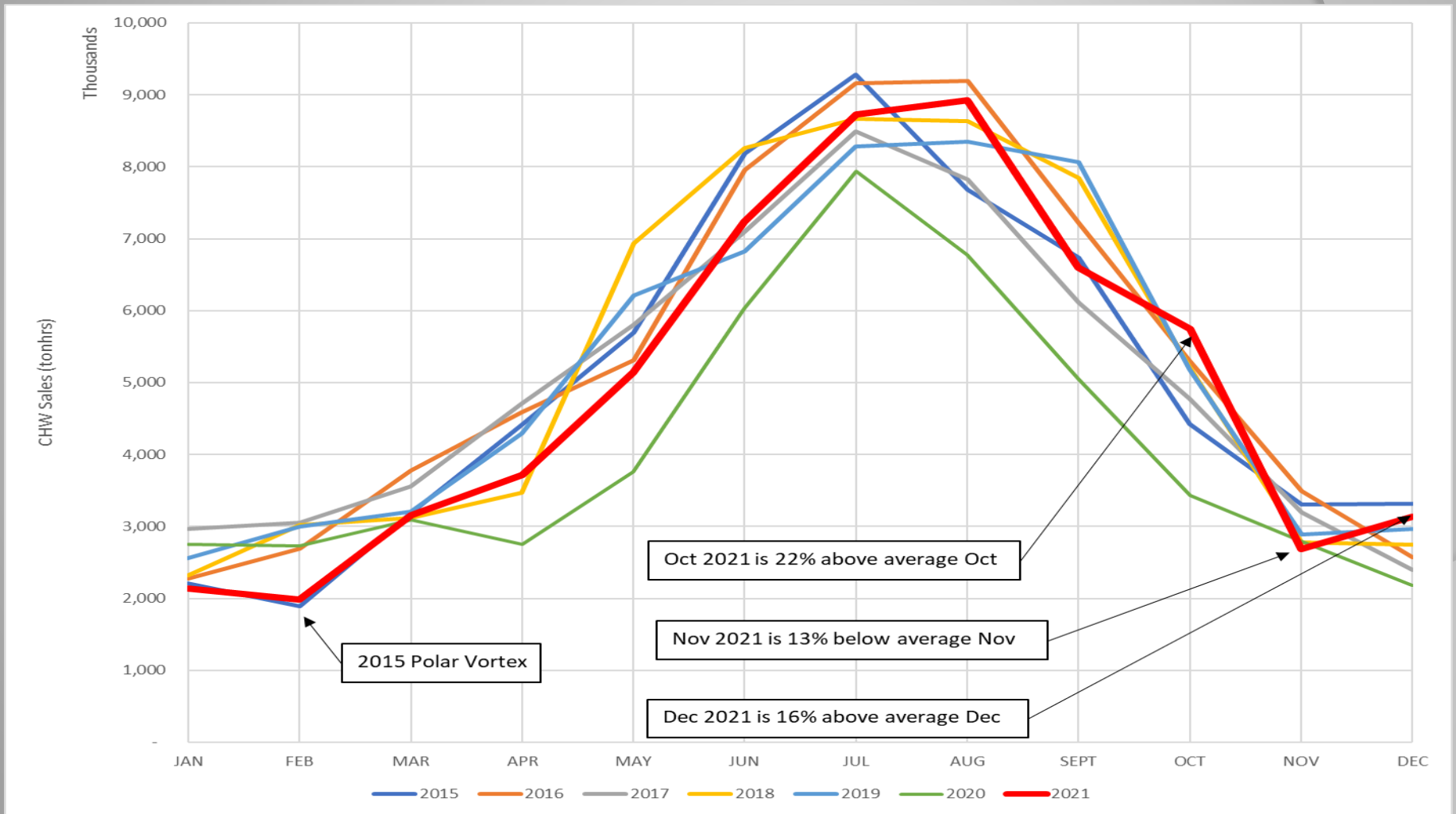
# 3. Customer Sales

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Jan 2020- Dec 2020	Jan 2021- Dec 2021	% Diff.	Jan 2020- Dec 2020	Jan 2021- Dec 2021	% Diff.
<b>Private</b>	Cost	\$ 1,207,889	\$ 1,446,300	19.74%	\$ 3,627,495	\$ 3,995,366	10.14%
	Usage (lbs or tonhrs)	80,036,285	86,144,540	7.63%	16,122,808	20,802,125	29.02%
<b>State</b>	Cost	\$ 1,617,519	\$ 1,913,293	18.29%	\$ 3,201,903	\$ 3,325,428	3.86%
	Usage (lbs or tonhrs)	101,812,921	110,324,209	8.36%	12,300,061	13,797,249	12.17%
<b>Metro</b>	Cost	\$ 1,547,223	\$ 1,824,604	17.93%	\$ 4,285,387	\$ 4,576,036	6.78%
	Usage (lbs or tonhrs)	135,716,725	129,760,802	-4.39%	20,860,325	24,860,994	19.18%
<b>Aggregate</b>	Cost	\$ 4,372,631	\$ 5,184,197	18.56%	\$11,114,785	\$11,896,831	7.04%
	Usage (lbs or tonhrs)	317,565,931	326,229,551	2.73%	49,283,194	59,460,368	20.65%
	Unit Cost	\$ 13.77	\$ 15.89	15.4%	\$ 0.226	\$ 0.200	-11.28%

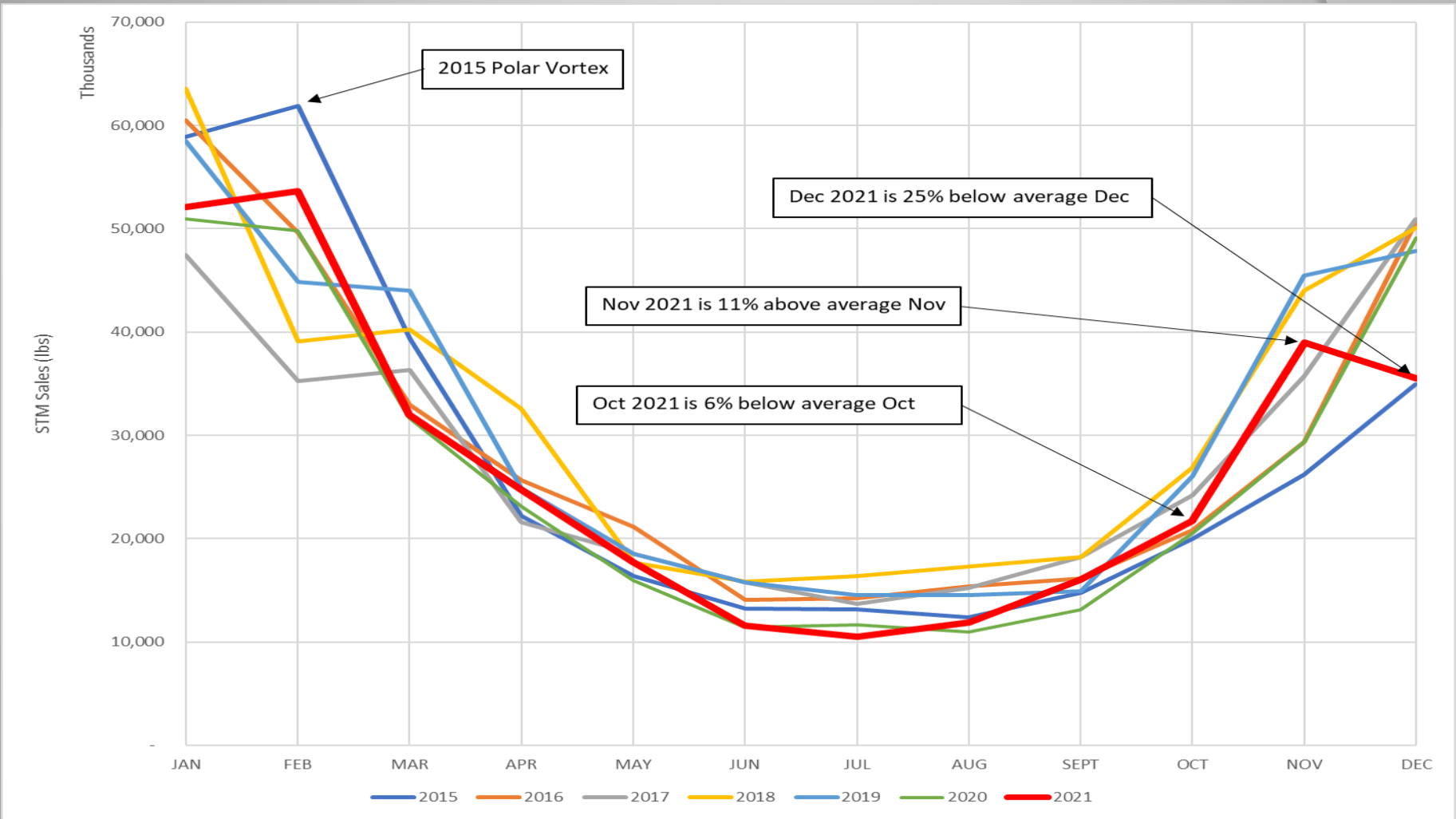
MFA, True-up, late fees and misc. are not included in values shown

# Figure 3A. Historic Chilled Water Sales



Averages include the years 2015, 2016, 2017, 2018, 2019 and 2020.

# Figure 3B. Historic Steam Sales



Averages include the years 2015, 2016, 2017, 2018, 2019 and 2020.






## 4. nCOVID-19 Response

- Late fees re-activated May 2021
- Two customers opted for COVID deferral; all paid and deferral period over
- There is 3 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



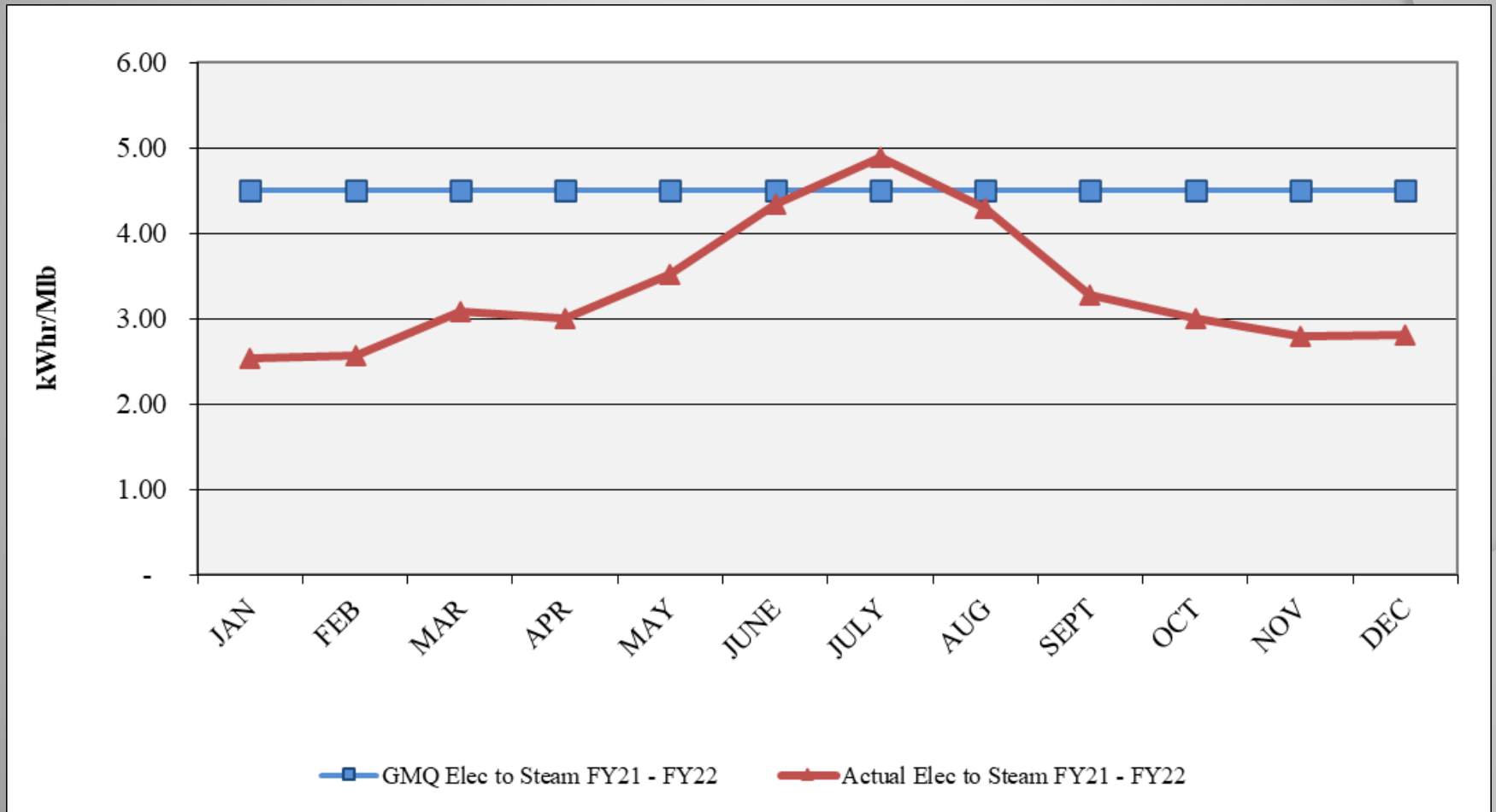
## 5. *Review of DES Contractor Performance*

Contractor (CNE) has failed to meet all the new performance guarantees during the 1<sup>st</sup> and 2<sup>nd</sup> Quarter FY22 and during FY21. CNE is developing plan to address the failure to meet the new performance guarantees.

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

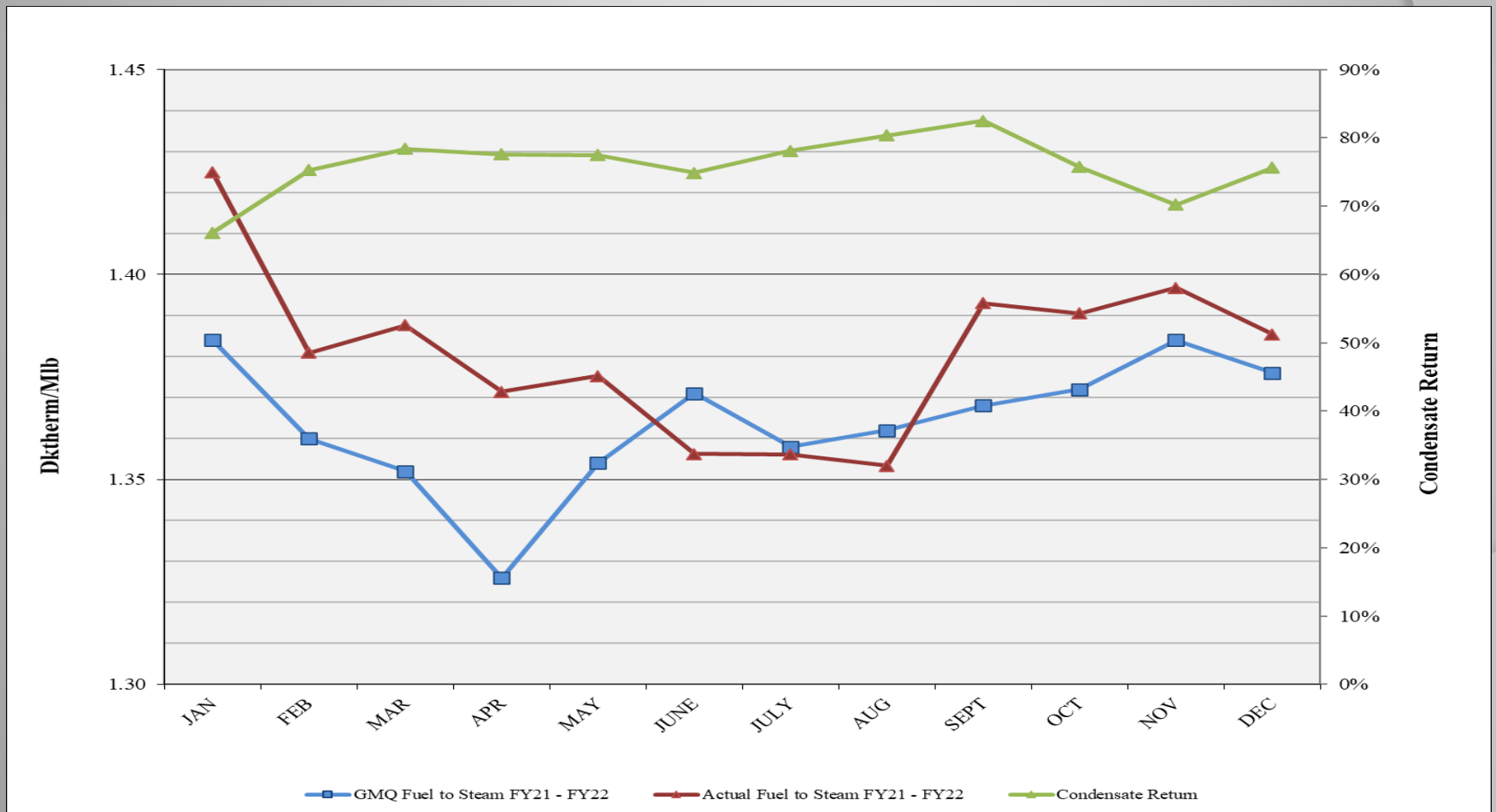


# Performance Measurement FY22: Steam Electric Conversion ●



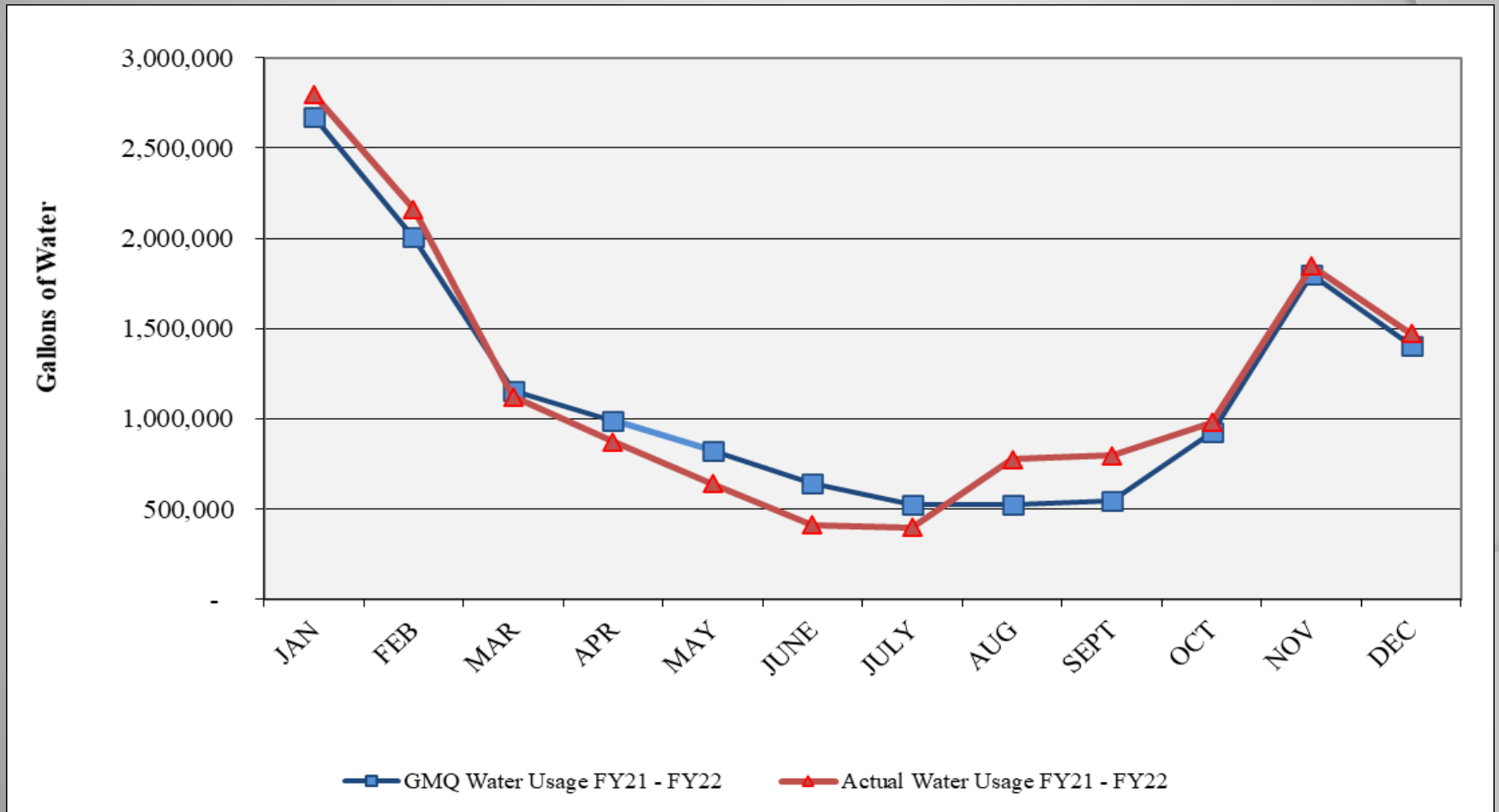
GMQ exceeded in July.

# Performance Measurement FY22: Steam Plant Efficiency



GMQ exceeded in Jan, Feb, Mar, Apr, May, Sept, Oct, Nov and Dec.

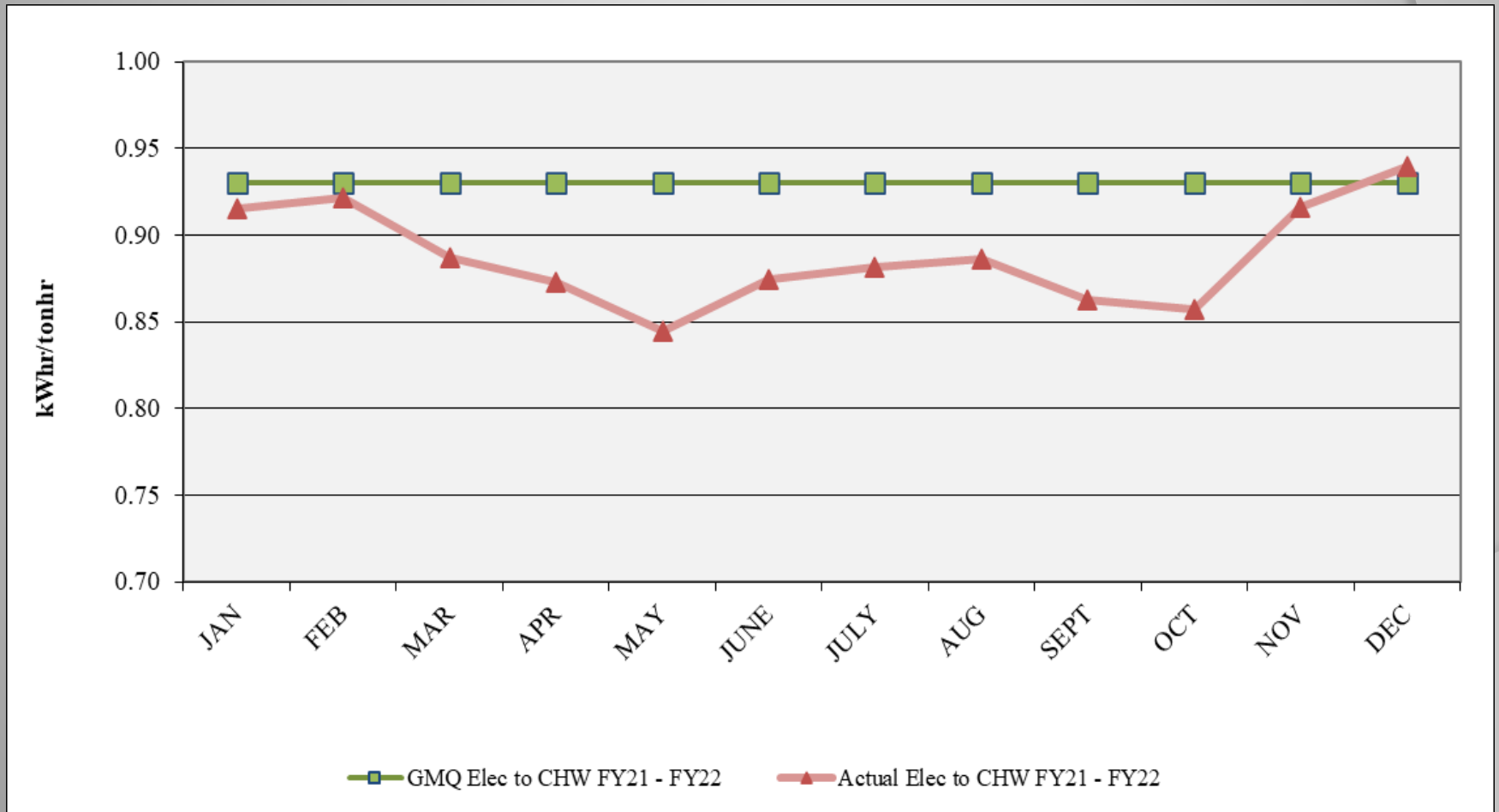
# Performance Measurement FY22: Steam Water Conversion ●



GMQ exceeded in Jan, Feb, Aug, Sept, Oct, Nov and Dec. Meter issues reported for 1<sup>st</sup> Qtr FY22.

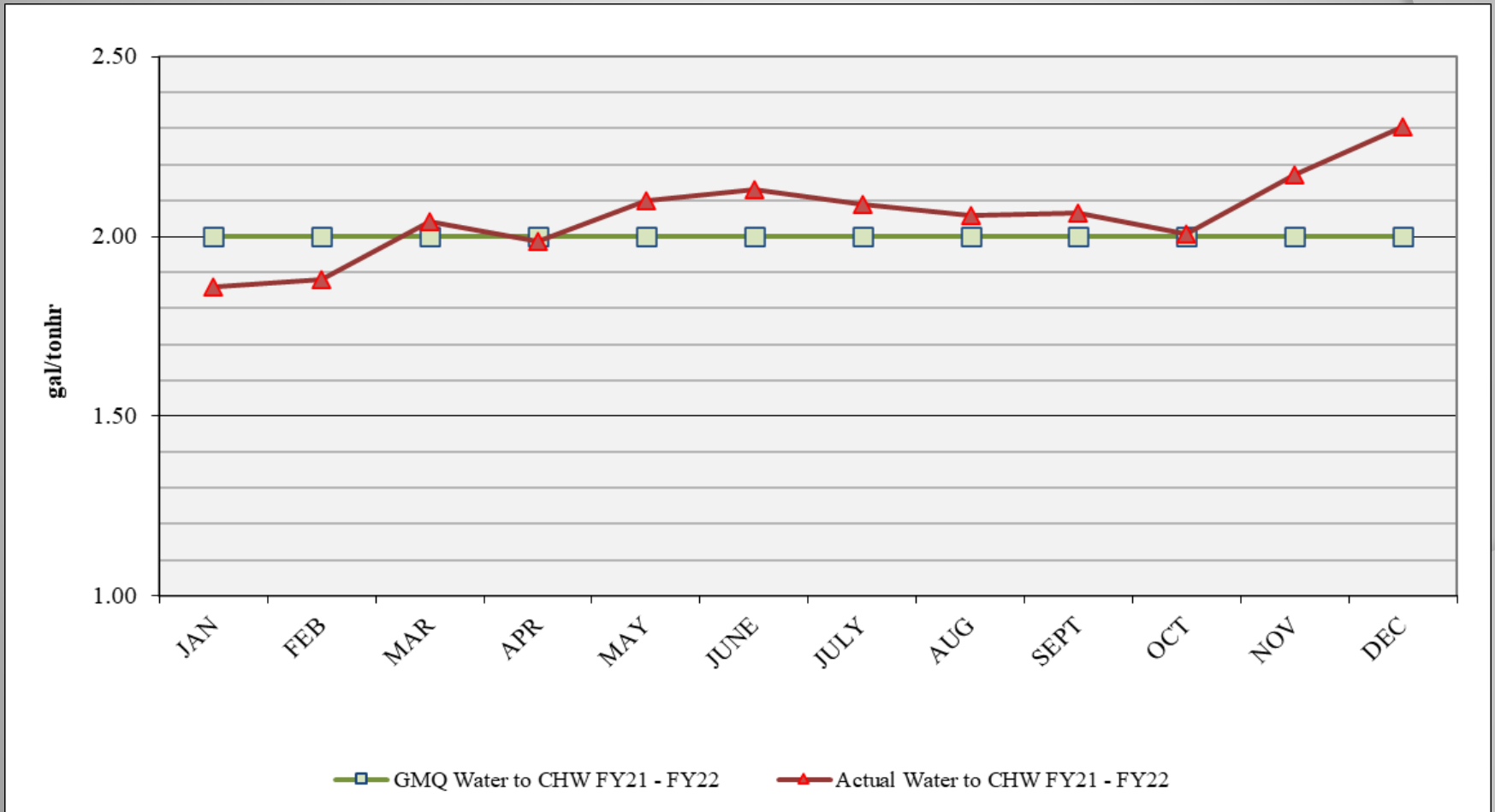
# Performance Measurement FY22: CHW

## Electric Conversion ●



GMQ exceeded in Dec.

# Performance Measurement FY22: CHW Water Conversion ●



GMQ exceeded Mar, May, June, July, Aug, Sept, Oct, Nov and Dec.



# Water Treatment

Q2FY22    Q1FY22    Q4FY21    Q3FY21

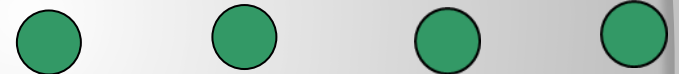
## ❖ Steam and Condensate

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



## ❖ Condensing Water

- ❖ Conductivity
- ❖ Biologicals



## ❖ Chilled Water

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



❖ Chem-Aqua developing side-stream filter proposal



# EGF Walkthrough

Q2FY22    Q1FY22    Q4FY21    Q3FY21

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





# *New Trees!*





# EDS Walkthrough

Q2FY22    Q1FY22    Q4FY21    Q3FY21

✓ Vault/Tunnel Housekeeping	● -	● -	● -	● +
✓ Maintenance Items				
✓ Piping	● -	● -	● -	NR
✓ Insulation R/R	● +	● +	●	●
✓ Water Infiltration	●	●	●	●
✓ Corrosion of Structural Metal Components	● +	● +	●	●
✓ Safety Items	●	●	●	●

NR – not reported previously

## 6. *Natural Gas Purchasing*

- ❖ Natural Gas Purchasing Review
  - ❖ Table 6: FY22 Gas Spending & Budget Comparison
  - ❖ Figure 6: Actual and Projected Fuel Cost Comparison

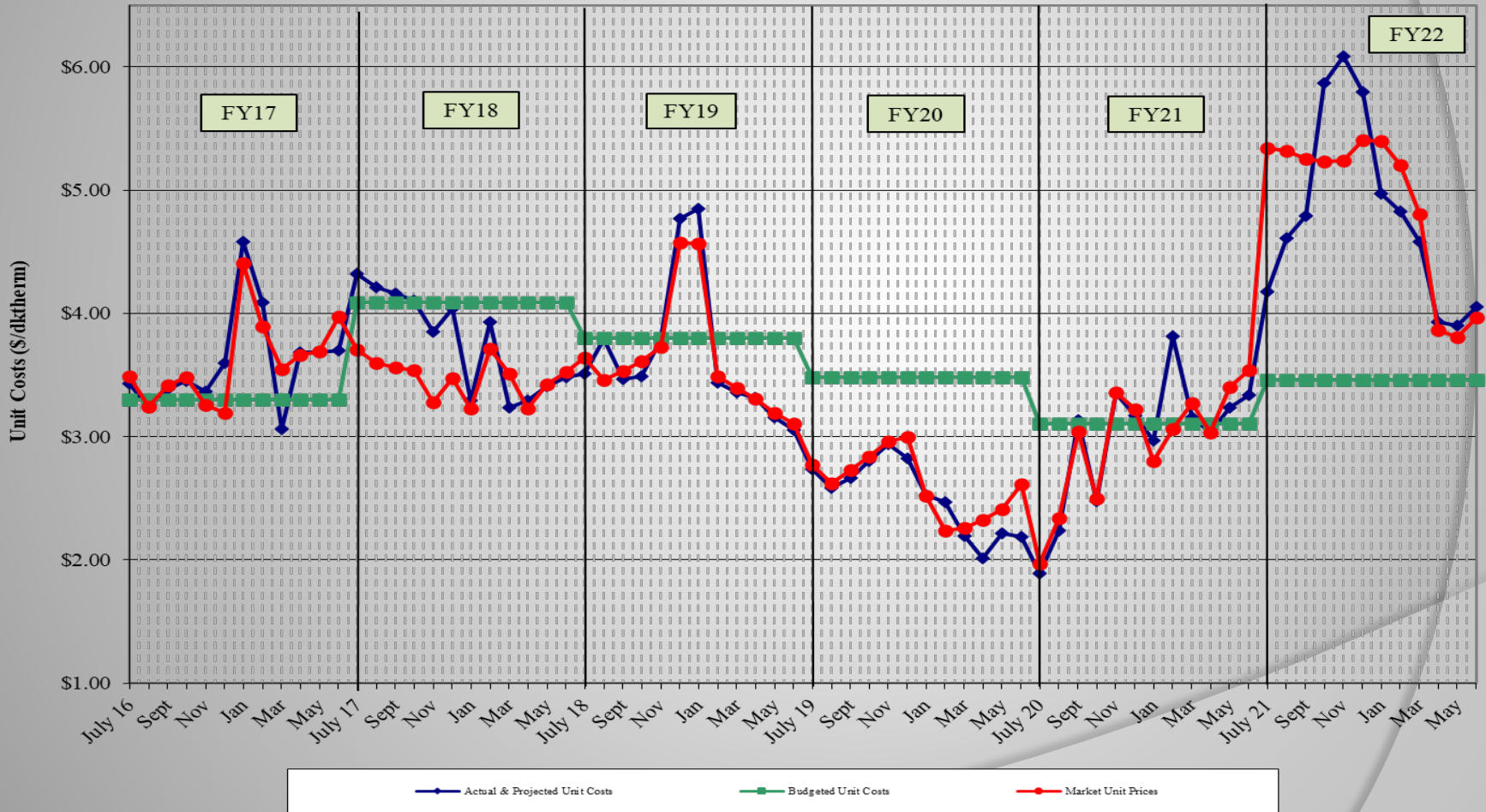
## Table 6: FY22 Gas Spending & Budget Comparison

		Actual FY22 To Dec 31	Budget FY22	Percent Difference
Steam Sendout (Mlbs)		168,850	186,127	-9.3%
Fuel Use (Dth) (includes propane)	●	233,614	270,256	-13.5%
Plant Eff (Dth/Mlb)	●	1.384	1.452	-4.7%
Total Gas Cost (includes propane)	●	\$1,275,610	\$899,952	41.7%
Unit Cost of Fuel (\$/Dth)	●	\$5.460	\$3.330	64.0%

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 Fuel Cost Comparison



Currently hedging 30% of natural gas through FY22; FY22 futures include hedged price, NYMEX and transportation.

# 7. FY22 Costs to Date

Item	FY22 Budget	FY22 Actual to date	Percent of FY22 Budget
FOC's	\$ 3,890,100	\$ 1,945,058	50.00%
Pass Throughs			
Administrative Costs	\$ 459,600	\$ 196,563	42.77%
Chemicals	\$ 232,200	\$ 120,418	51.86%
R&I Fund Transfers	\$ 294,800	\$ 171,967	58.33%
Water/Sewer	\$ 751,500	\$ 604,211	80.40%
Fuel Base	\$ 2,115,186	\$ 1,405,600	66.45%
Fuel Contingency	\$ 516,814	\$ -	0.00%
Electricity	\$ 6,329,500	\$ 2,742,765	43.33%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,083,200	\$ 2,355,073	46.33%
<b>Total Expenses</b>	<b>\$ 19,672,900</b>	<b>\$ 9,541,653</b>	<b>48.50%</b>
<b>Total Revenues</b>	<b>\$ 19,042,200</b>	<b>\$ 9,303,114</b>	<b>48.86%</b>
<b>Metro Funding</b>	<b>\$ 630,700</b>	<b>\$ 315,350</b>	<b>50.00%</b>

Actual Costs and Revenues to Date include FY21 True-up Items.



# FY22 Budget

Item	FY21 Budget	FY22 Budget	Percent of FY21 Budget
FOC's	\$ 3,776,800	\$ 3,890,100	3.00%
Pass Throughs			
Administrative Costs	\$ 393,900	\$ 459,600	16.68%
Chemicals	\$ 260,700	\$ 232,200	-10.93%
R&I Fund Transfers	\$ 291,900	\$ 294,800	0.99%
Water/Sewer	\$ 624,000	\$ 751,500	20.43%
Fuel Base	\$ 2,001,900	\$ 2,115,186	5.66%
Fuel Contingency	\$ 431,900	\$ 516,814	19.66%
Electricity	\$ 6,130,100	\$ 6,329,500	3.25%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,098,000	\$ 5,083,200	-0.29%
<b>Total Expenses</b>	<b>\$ 19,009,200</b>	<b>\$ 19,672,900</b>	<b>3.49%</b>
<b>Total Revenues</b>	<b>\$ 18,378,500</b>	<b>\$ 19,042,200</b>	<b>3.61%</b>
<b>Metro Funding</b>	<b>\$ 630,700</b>	<b>\$ 630,700</b>	<b>0.00%</b>



## 8. *Marketing*

### Remaining Capacity for Sale (approximate)

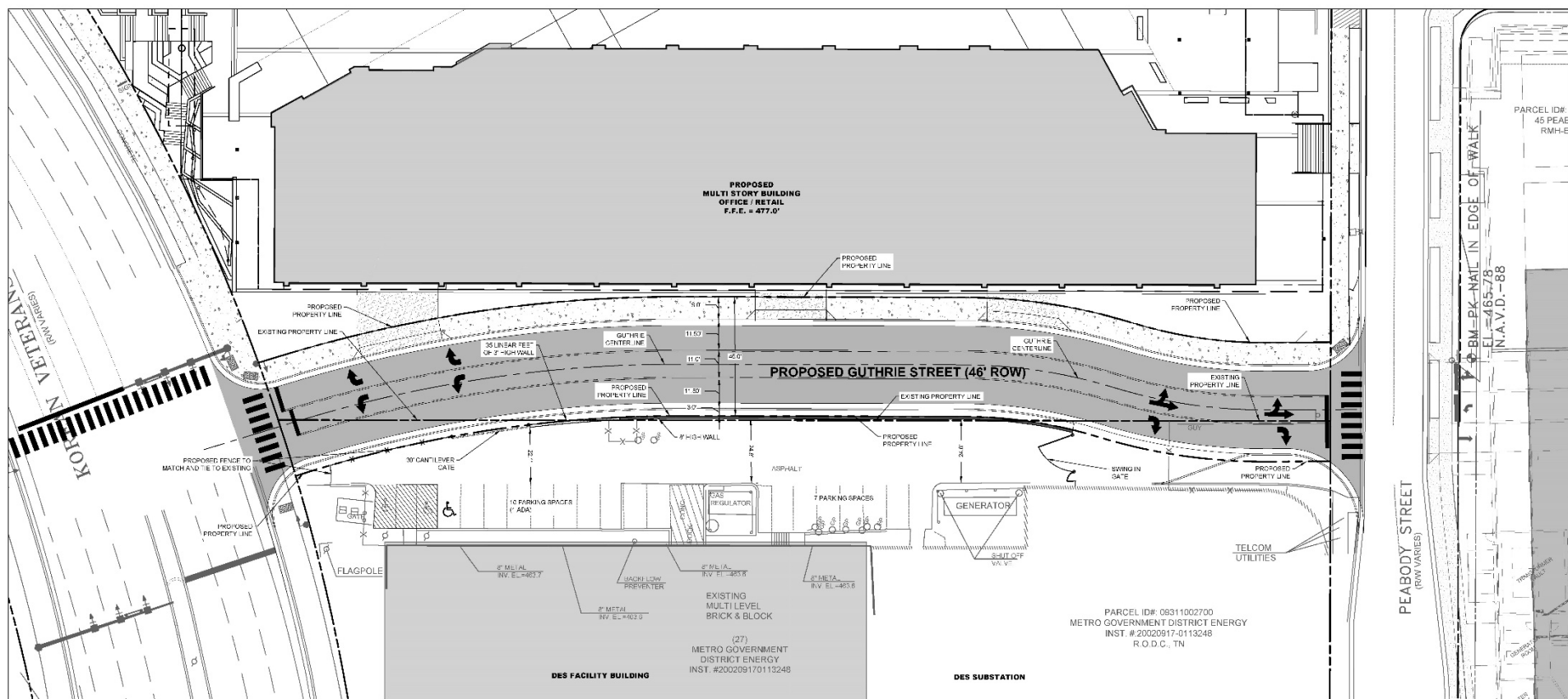
- 2,429 tons of chilled water
- 24,622 pph of steam

### Potential Customers

- Service to Lot K (Peabody Union)
  - Site directly to the east of EGF
  - Declined to be a DES customer
  - Guthrie Street



# Guthrie Street



## *Marketing (con't)*

- New Development North of KVB
  - Potential ~1,100 tons and ~15,000 pph
  - Early stages of discussions
- Union Street Hotel
  - Potential 100 tons and no steam (project on hold)
- 1<sup>st</sup> and KVB
  - Potential ~1,100 tons and ~17,000 pph steam
  - Early stages of discussions
- Peabody St Development
- East Bank Technical Advisory Committee

## 9. *Capital Expenditure Update*

	<b>Spent to End of FY21</b>	<b>FY22 Spending</b>	<b>Balance to Date (01/31/22)</b>
R&I Projects	\$4,270,639	\$30,201	\$189,716
49116-DES Infrastructure Fund	\$2,824,820	\$818,561	\$1,765,128
<b>Total</b>	<b>\$7,095,459</b>	<b>\$848,762</b>	<b>\$1,954,844</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 192: Peabody St Developments – ongoing

## *Capital Projects Review*

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

- DES 152: MHs A, B & M – under construction; will be completed in 3<sup>rd</sup> Qtr FY22
- DES 154: MH K Repairs – corrosion/concrete repairs; under construction; anticipate construction completion in 3<sup>rd</sup> Qtr FY22
- DES 161: MH S6 Insulation – under construction; will be completed in 3<sup>rd</sup> Qtr FY22
- DES 179: MH 11 Repairs – corrosion/insulation repairs; to be bid/awarded during 2<sup>nd</sup> Qtr FY22; anticipate completion 3<sup>rd</sup> Qtr FY22
- DES 188: 4<sup>th</sup> & Church Bldg Access Tunnel Repairs – tunnel metal liner plates and piping supports corroded; to be bid/awarded during 2<sup>nd</sup> Qtr FY22; anticipate completion 3<sup>rd</sup> Qtr FY22



## *Capital Projects Review*

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

- DES 193: MH 13 Pipe and Pipe Support Repairs – needs to be done during summer months (partial condensate return isolation); anticipate to be completed in 4<sup>th</sup> Qtr FY22/1<sup>st</sup> Qtr FY23
- DES 194: MH B4 Repairs – cleaning and coating of structural steel; re-insulation of piping; anticipate award and construction beginning during 4<sup>th</sup> Qtr FY22



## *Capital Projects Review*

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

- DES 177: MH B1 Platform & Ladder – bids rec'd; verbal award; dispute over CNE mark-up
- DES 185: 5<sup>th</sup> Ave N Exploratory Excavation – piping repairs complete; concrete repairs completed late 1<sup>st</sup> Qtr FY22; awaiting final mill & paving; anticipate close-out during 3<sup>rd</sup> Qtr FY22
- DES 187: Exploratory Excavation at MH 22B (Metro Public Library) – water flowing through steam casing into MH 22B; excavated and found buried steam & condensate pre-insulated piping in need of repair; piping repaired; awaiting insulation completion; anticipate completion during 3<sup>rd</sup> Qtr FY22
- DES 191: MH 20 Repairs – condensate return piping leaking (corrosion); ground/surface water collection/diversion needed; new access ladder needed; in design – anticipate bidding during 3<sup>rd</sup> Qtr FY22, construction late 3<sup>rd</sup> Qtr/early 4<sup>th</sup> Qtr FY22

## *Capital Projects Review*

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

- DES 143: MH N1 and N2 Insulation – structural steel to be cleaned/coated and piping insulation to be installed/added
- DES 178: MH 5 Repairs – corrosion/concrete/insulation repairs
- DES 180: State Tunnel Pipe Support Repair – corrosion repairs
- DES 189: MH 4 Structural Steel & Insulation Repair

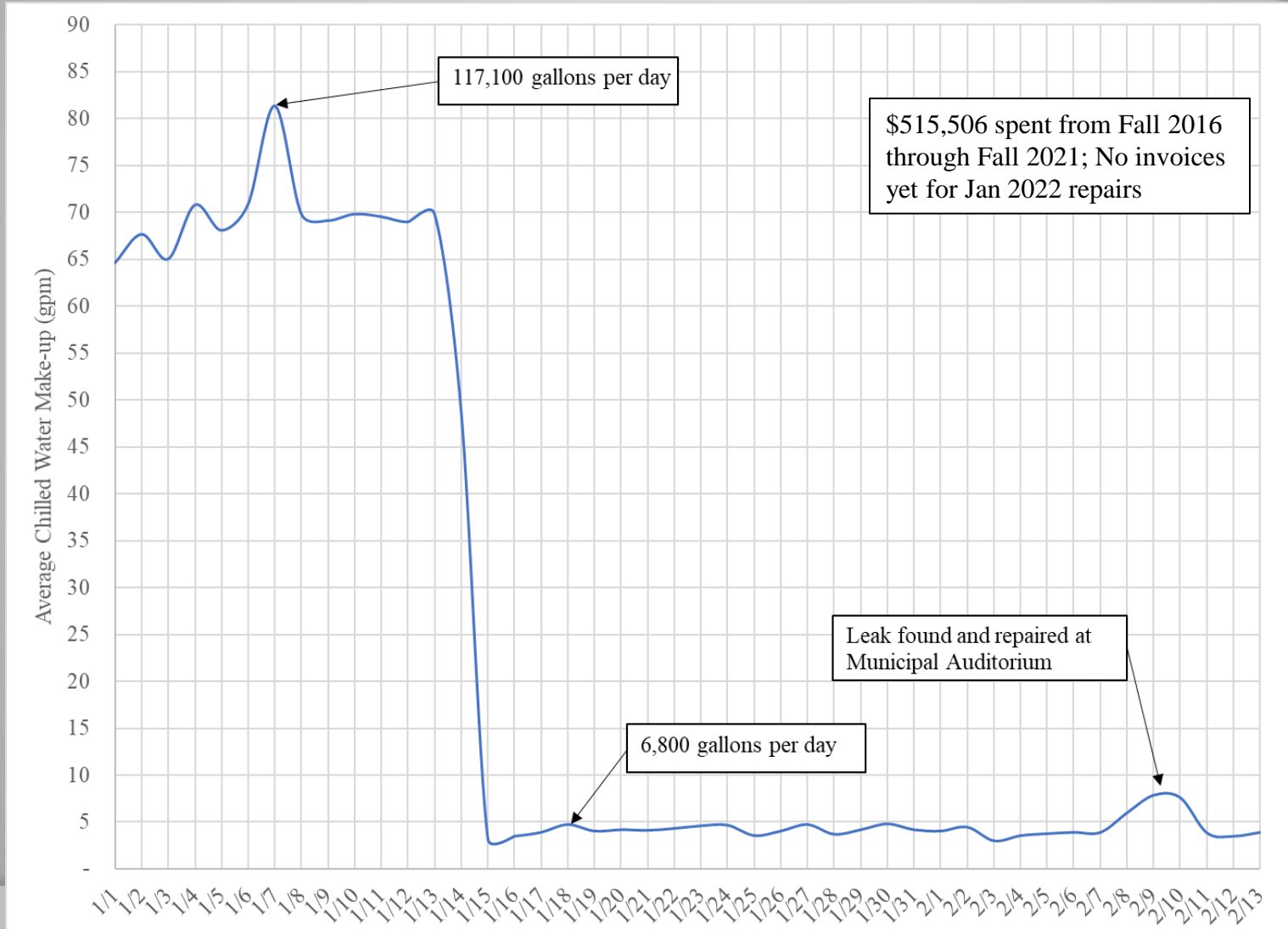
## *Capital Projects Review*

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

- DES 172: Viridian Service Line Support Repairs
- DES 174: 7<sup>th</sup> Avenue Tunnel Pipe Support Repairs
- DES 182: MH B10 Exp Jt Replacement
- DES 186: Printers Alley Exploratory Excavation



# Chilled Water Leak Repaired



# ***10. Constellation NewEnergy System Operator***



# *11. Other Board Member Items*

*Virtual Customer Meeting March 3, 2022*

*TEG Contract Expires April 26, 2022*

# *12. Adjourn*

- *Advisory Board Meeting Schedule*
- FY22 – 3<sup>rd</sup> Quarter Meeting – May 19, 2022
- FY22 – 4<sup>th</sup> Quarter Meeting – August 18, 2022
- FY23 – 1<sup>st</sup> Quarter Meeting – November 17, 2022
- FY23 – 2<sup>nd</sup> Quarter Meeting – February 16, 2023