

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



***DES Advisory Board Meeting***  
***Second Quarter FY13***  
***February 21, 2013***



# *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 Status
6. FY13 Costs to Date
7. Capital Projects Review & Status Report Update
8. New Website Format
9. Other Board Member Items
10. Adjourn



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



## ***3. Customer Sales***

- ❖ Table 3: Customer Cost Comparison
- ❖ Figure 3A: Historic August CDD
- ❖ Figure 3B: Historic January HDD

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

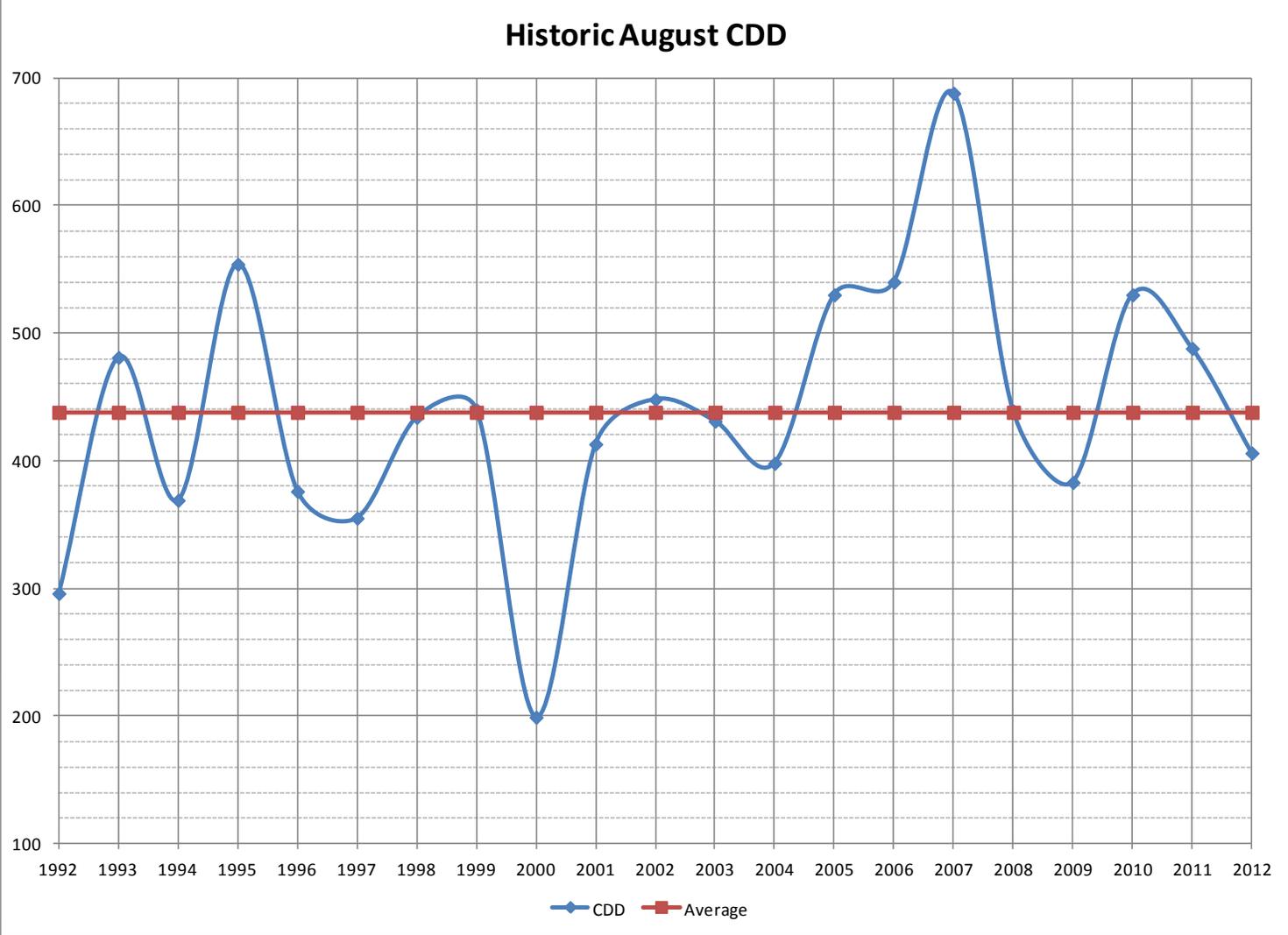
|                  |                       | Steam - Rolling 12 Month |                     |         | Chilled Water - Rolling 12 Month |                     |         |
|------------------|-----------------------|--------------------------|---------------------|---------|----------------------------------|---------------------|---------|
|                  |                       | Jan 2011 - Dec 2011      | Jan 2012 - Dec 2012 | % Diff. | Jan 2011 - Dec 2011              | Jan 2012 - Dec 2012 | % Diff. |
| <b>Private</b>   | Cost                  | \$ 1,513,198             | \$ 1,319,314        | -12.81% | \$ 3,328,840                     | \$ 3,359,932        | 0.93%   |
|                  | Usage (lbs or tonhrs) | 85,554,418               | 77,575,803          | -9.33%  | 17,297,332                       | 18,005,960          | 4.10%   |
|                  | Unit Cost             | \$ 17.69                 | \$ 17.01            | -3.8%   | \$ 0.192                         | \$ 0.187            | -3.0%   |
| <b>State</b>     | Cost                  | \$ 1,978,488             | \$ 1,790,353        | -9.51%  | \$ 3,445,895                     | \$ 3,440,191        | -0.17%  |
|                  | Usage (lbs or tonhrs) | 99,028,505               | 91,611,133          | -7.49%  | 17,072,222                       | 17,144,596          | 0.42%   |
|                  | Unit Cost             | \$ 19.98                 | \$ 19.54            | -2.2%   | \$ 0.202                         | \$ 0.201            | -0.6%   |
| <b>Metro</b>     | Cost                  | \$ 1,787,846             | \$ 1,865,238        | 4.33%   | \$ 3,885,384                     | \$ 4,245,321        | 9.26%   |
|                  | Usage (lbs or tonhrs) | 91,922,769               | 116,202,003         | 26.41%  | 21,249,225                       | 25,212,490          | 18.65%  |
|                  | Unit Cost             | \$ 19.45                 | \$ 16.05            | -17.5%  | \$ 0.183                         | \$ 0.168            | -7.9%   |
| <b>Aggregate</b> | Cost                  | \$ 5,279,532             | \$ 4,974,905        | -5.77%  | \$ 10,660,119                    | \$ 11,045,444       | 3.61%   |
|                  | Usage (lbs or tonhrs) | 276,505,692              | 285,388,939         | 3.21%   | 55,618,779                       | 60,363,046          | 8.53%   |
|                  | Unit Cost             | \$ 19.09                 | \$ 17.43            | -8.7%   | \$ 0.192                         | \$ 0.183            | -4.53%  |

MFA not included in values shown

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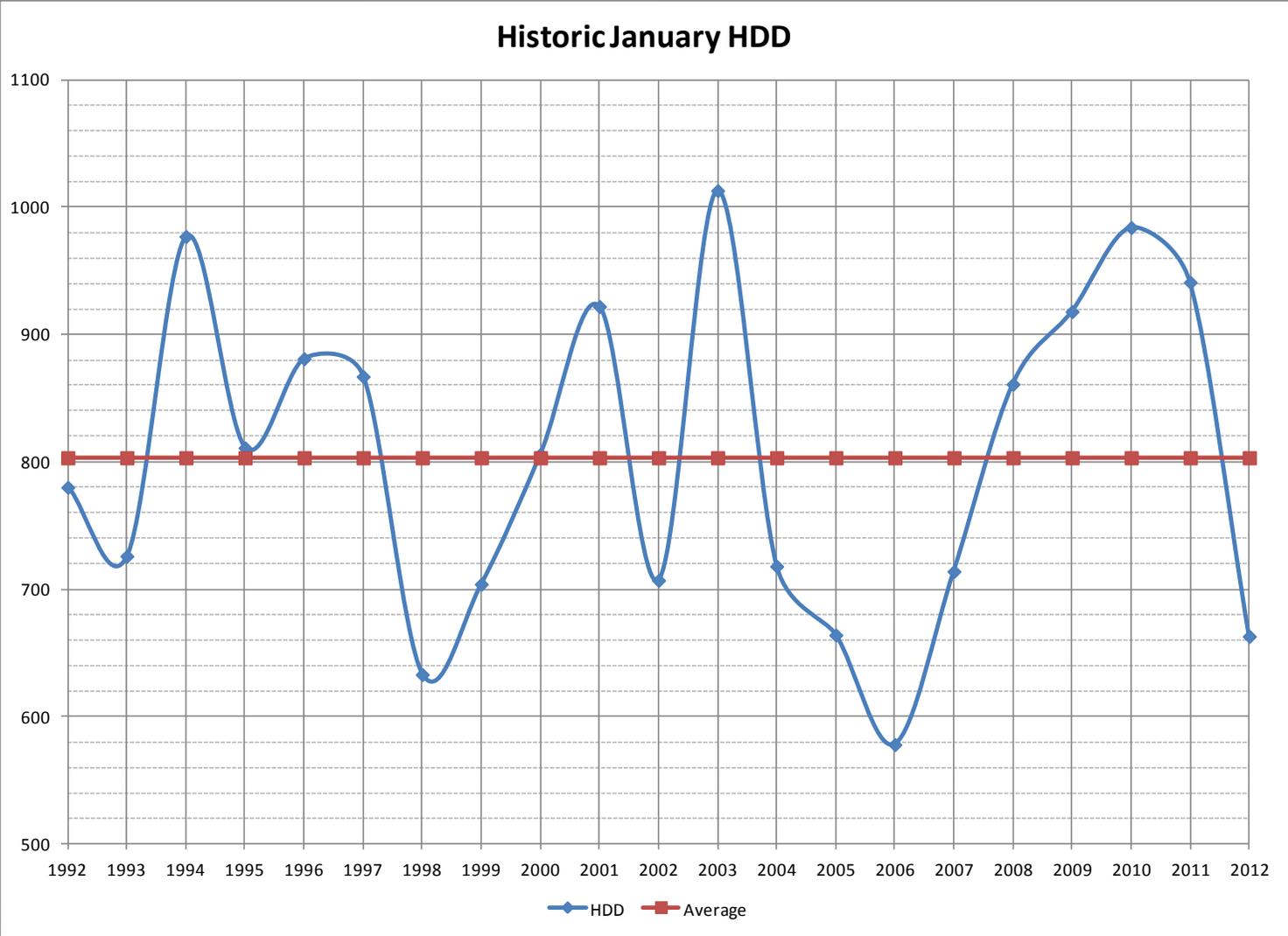
## Figure 3A: Historic August CDD



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Figure 3B: Historic January HDD





## 4. *Review of DES Contractor Performance*

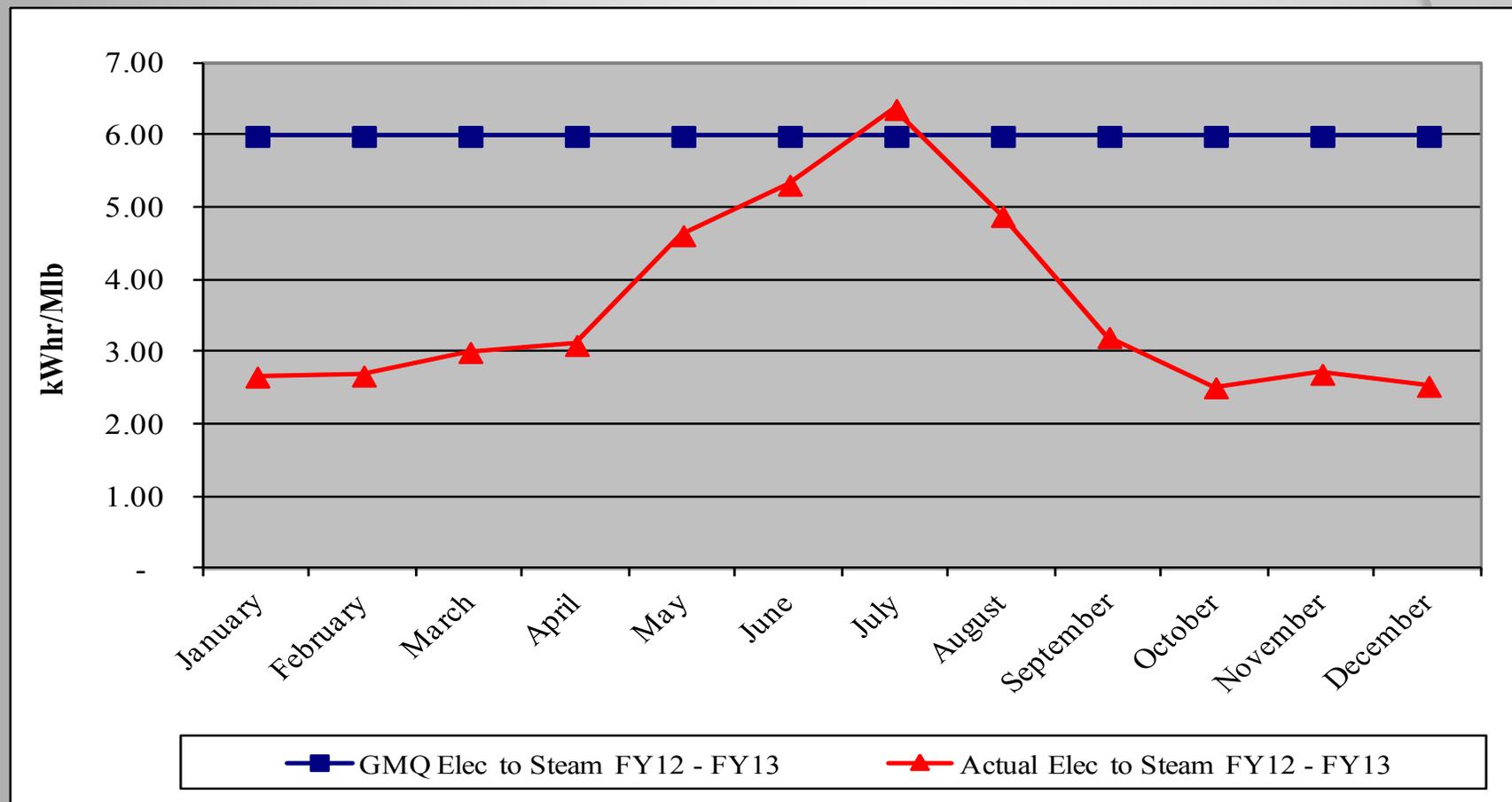
Contractor (CNE) is in compliance with their contractual obligations for FY13.

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

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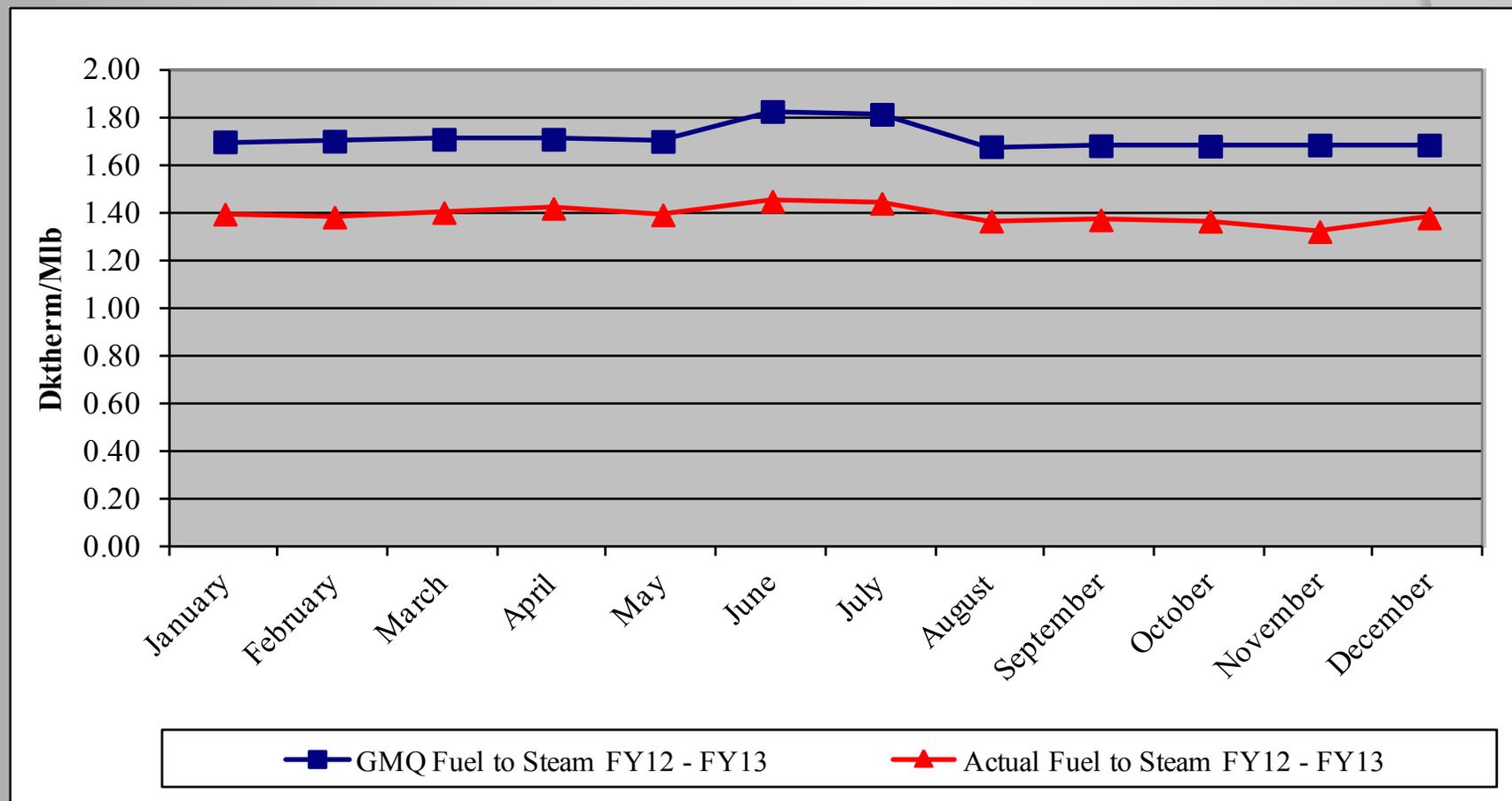
## Performance Measurement FY13: Steam Electric Conversion ●



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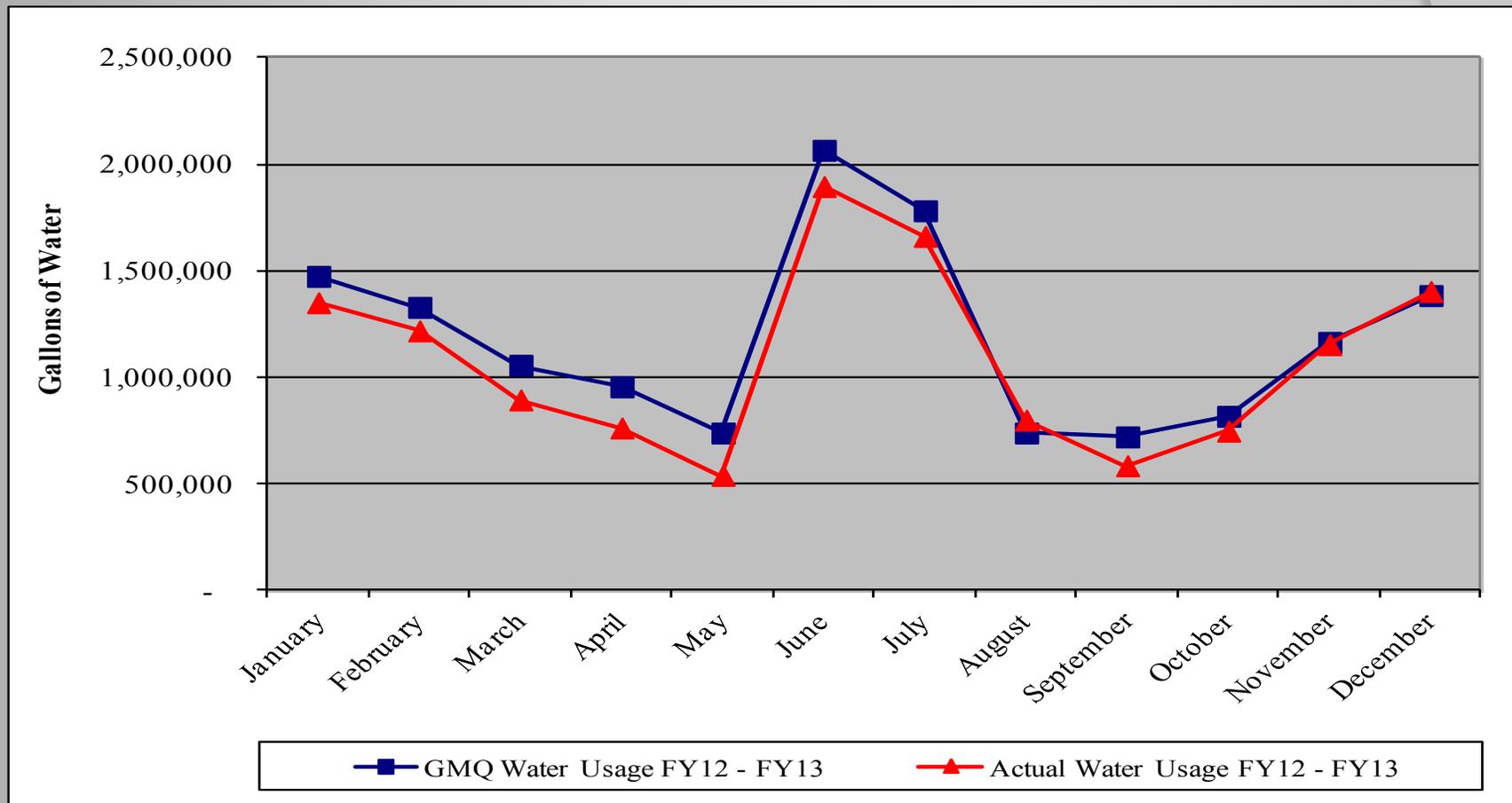


## Performance Measurement FY13: Steam Plant Efficiency ●





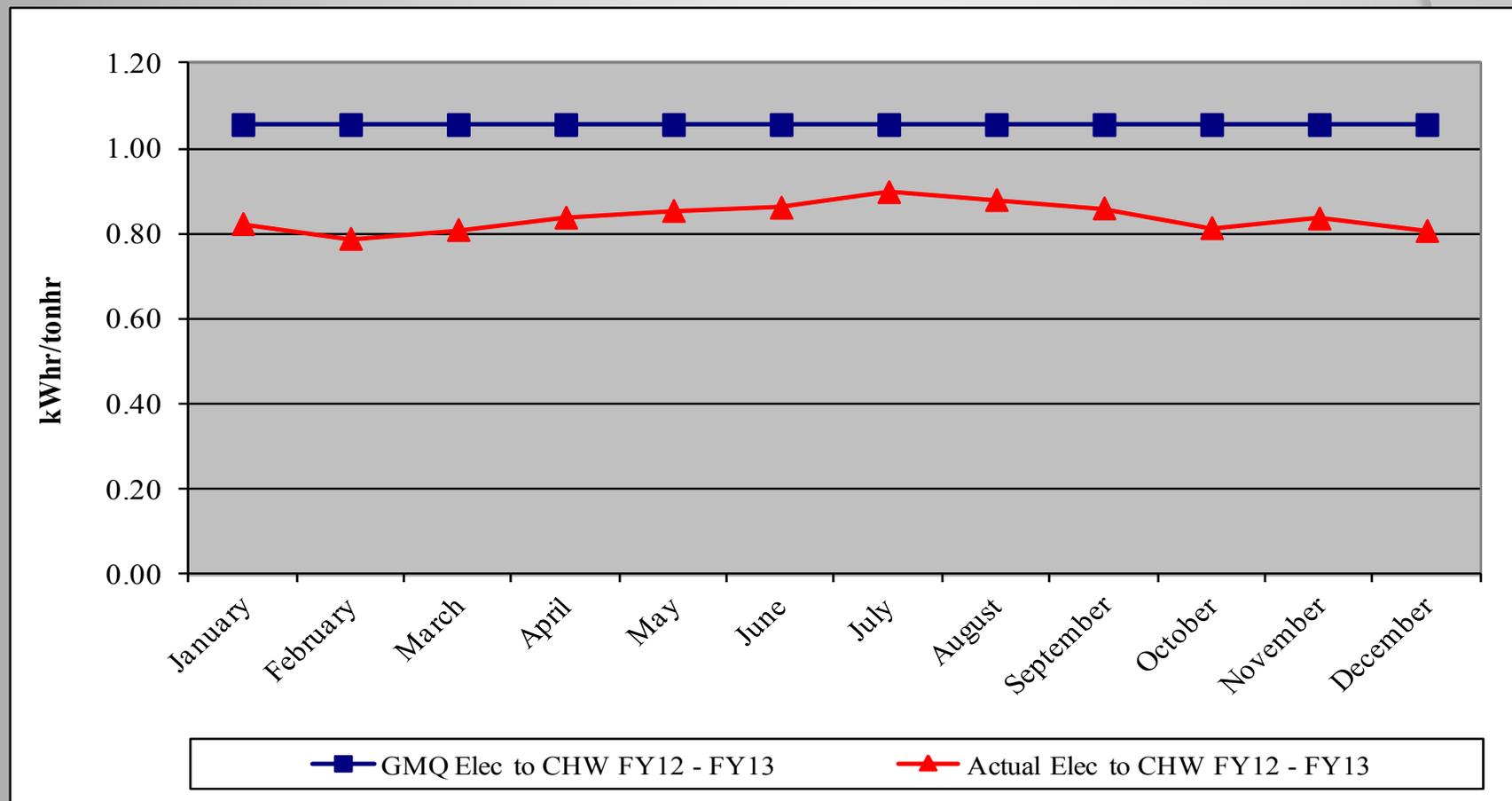
### Performance Measurement FY13: Steam Water Conversion ●



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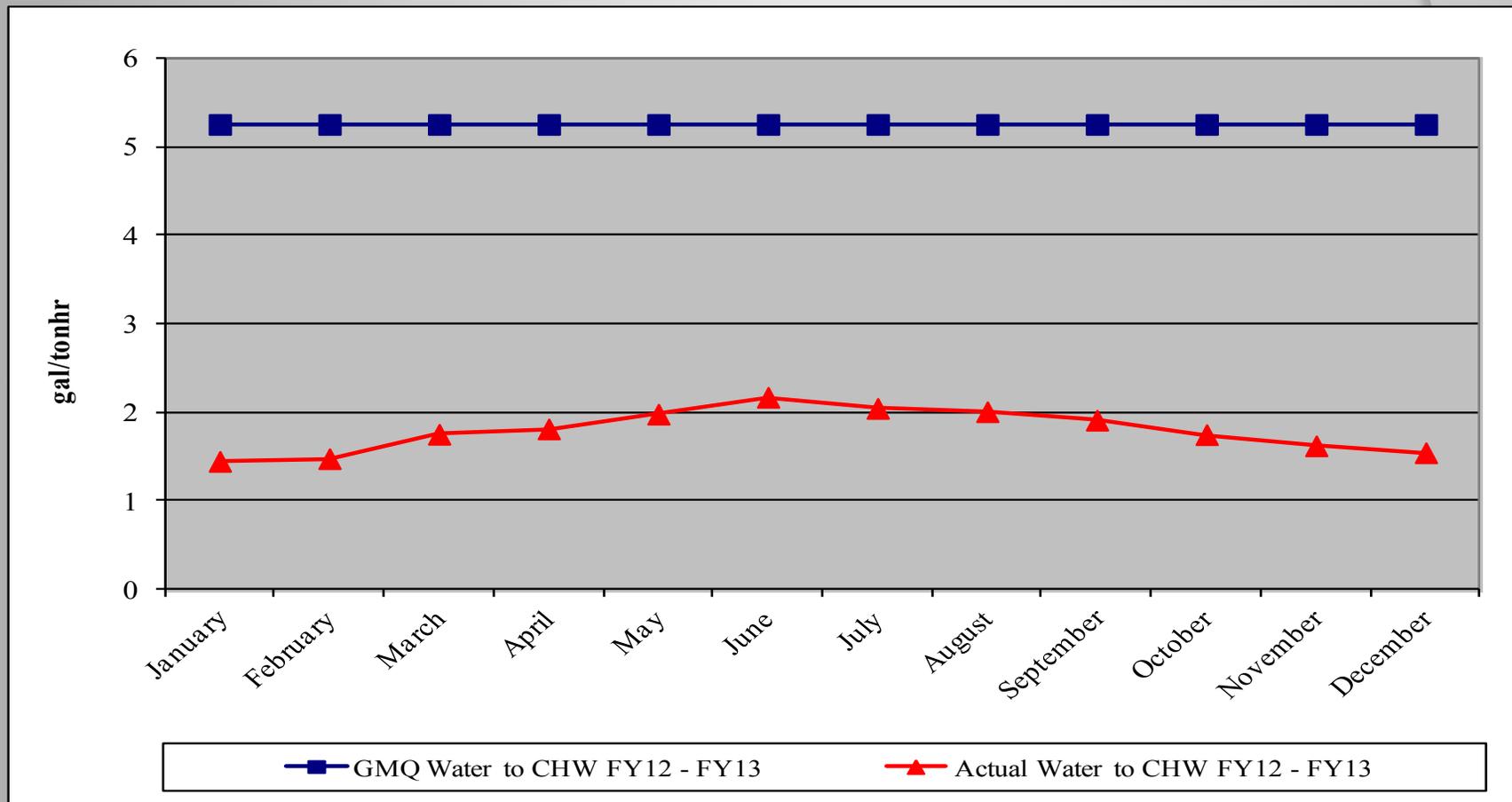


## Performance Measurement FY13: CHW Electric Conversion ●





### Performance Measurement FY13: CHW Water Conversion ●





# *Water Treatment*

## ❖ Steam and Condensate ●

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

## ❖ Condensing Water ●

- ❖ Conductivity
- ❖ Biologicals

## ❖ Chilled Water ●

- ❖ Hardness
- ❖ Corrosion
- ❖ Biologicals



## *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 (DES 080 in closeout) ●



## *5. Natural Gas Purchasing*

- ❖ Natural Gas Purchasing Review
  - ❖ Table 5: FY13 Gas Spending & Budget Comparison
  - ❖ Figure 5A: Actual and Projected Gas Cost Comparison
  - ❖ Figure 5B: Historic Hedging

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### Table 5: FY13 Gas Spending & Budget Comparison

|                                      | Actual FY13<br>To date (Dec 31) | Budget<br>FY13 | Percent<br>Difference |
|--------------------------------------|---------------------------------|----------------|-----------------------|
| Steam Sendout<br>(Mlbs)              | 181,081                         | 152,457        | -18.8%                |
| Fuel Use (Dth)<br>(includes propane) | ● 246,974                       | 211,000        | -17.0%                |
| Plant Eff (Dth/Mlb)                  | ● 1.364                         | 1.384          | 1.4%                  |
| Total Gas Cost<br>(includes propane) | ● \$1,006,312                   | \$1,063,018    | 5.3%                  |
| Unit Cost of Fuel (\$/<br>Dth)       | ● \$4.075                       | \$5.038        | 19.1%                 |

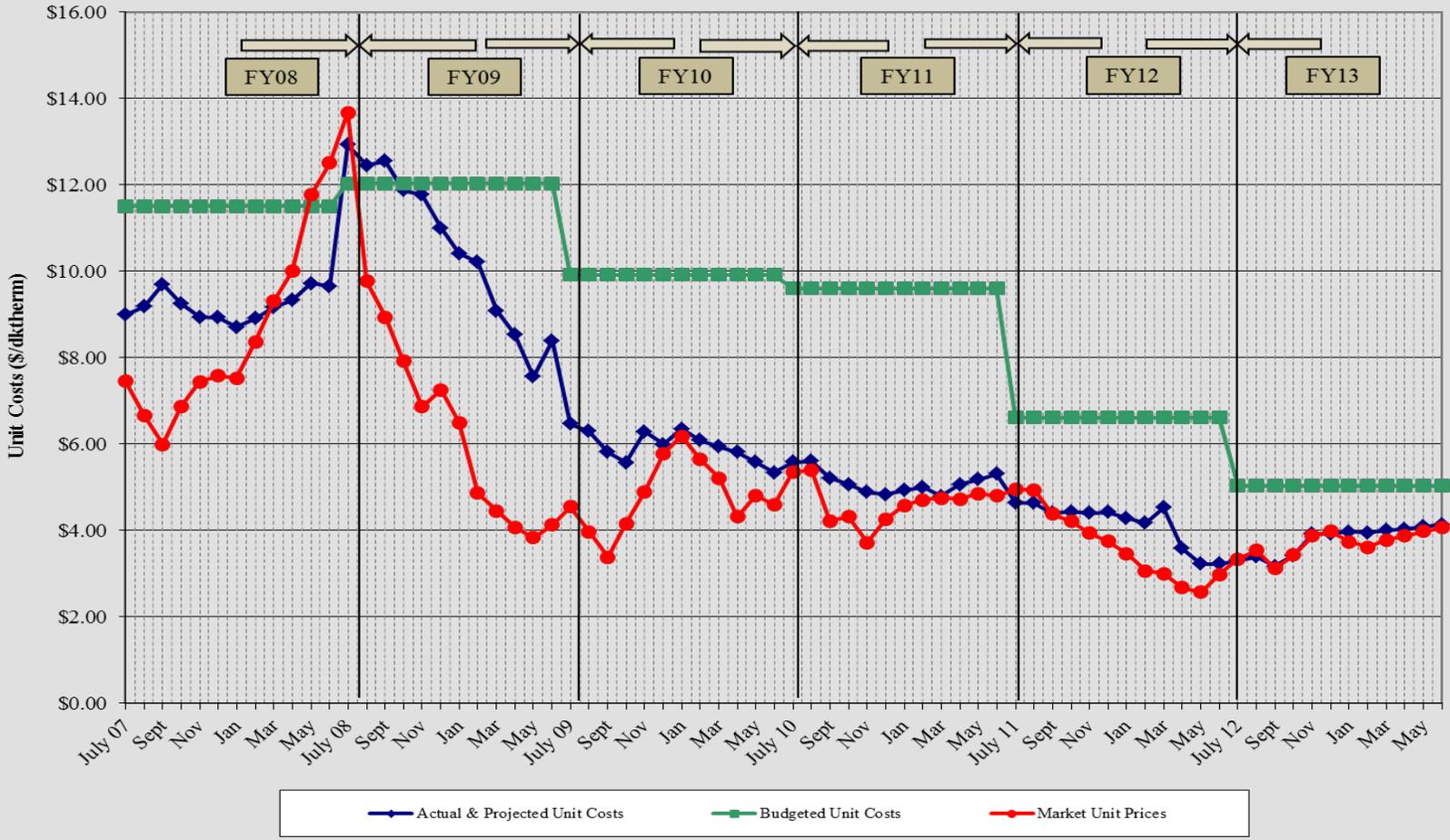
Excludes consultant fees and FEA

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Figure 5A. Actual and Projected Gas Cost Comparison History



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### 6. FY13 Costs to Date

| Item                        | FY12 Actual         | FY13 Budget         | FY13 Actual to date | Percent of FY13 Budget |
|-----------------------------|---------------------|---------------------|---------------------|------------------------|
| FOC's                       | \$ 4,303,100        | \$ 4,303,100        | \$2,195,495         | 51.02%                 |
| Pass Throughs               |                     |                     |                     |                        |
| Non-Energy                  | \$ 842,241          | \$ 1,031,400        | \$ 318,847          | 30.91%                 |
| Water/Sewer                 | \$ 433,255          | \$ 597,700          | \$ 303,826          | 50.83%                 |
| Natural Gas Base            | \$ 2,025,943        | \$ 2,129,500        | \$1,012,875         | 47.56%                 |
| Natural Gas Contingency     | \$ -                | \$ 1,809,800        | \$ -                | 0.00%                  |
| Electricity                 | \$ 4,737,502        | \$ 5,192,900        | \$3,014,399         | 58.05%                 |
| Debt Service                | \$ 4,928,191        | \$ 5,021,600        | \$1,926,236         | 38.36%                 |
| <b>Total Expenses</b>       | <b>\$17,270,232</b> | <b>\$20,086,000</b> | <b>\$8,771,676</b>  | <b>43.67%</b>          |
| <b>Total Revenues</b>       | <b>\$15,644,921</b> | <b>\$17,723,000</b> | <b>\$8,478,191</b>  | <b>47.84%</b>          |
| <b>Metro Funding Amount</b> | <b>\$ 2,363,000</b> | <b>\$ 2,363,000</b> | <b>\$1,157,828</b>  | <b>49.00%</b>          |



## 7. Capital Expenditure Update

|              | <b>Spent to End of<br/>FY12</b> | <b>FY13<br/>Spending</b> | <b>Balance to Date<br/>(01/31/13)</b> |
|--------------|---------------------------------|--------------------------|---------------------------------------|
| R&I Projects | \$1,543,008                     | \$549,243                | \$32,465                              |
| 2005B Bond   | \$8,186,500                     | \$0                      | \$0                                   |
| 2010 Bond    | \$1,876,222                     | \$5,701                  | \$528,077                             |
| MCCC Fund    | \$5,264,022                     | \$120,165                | \$3,115,814                           |
| <b>Total</b> | <b>\$16,869,752</b>             | <b>\$675,109</b>         | <b>\$3,676,356</b>                    |



# *Capital Projects Review*

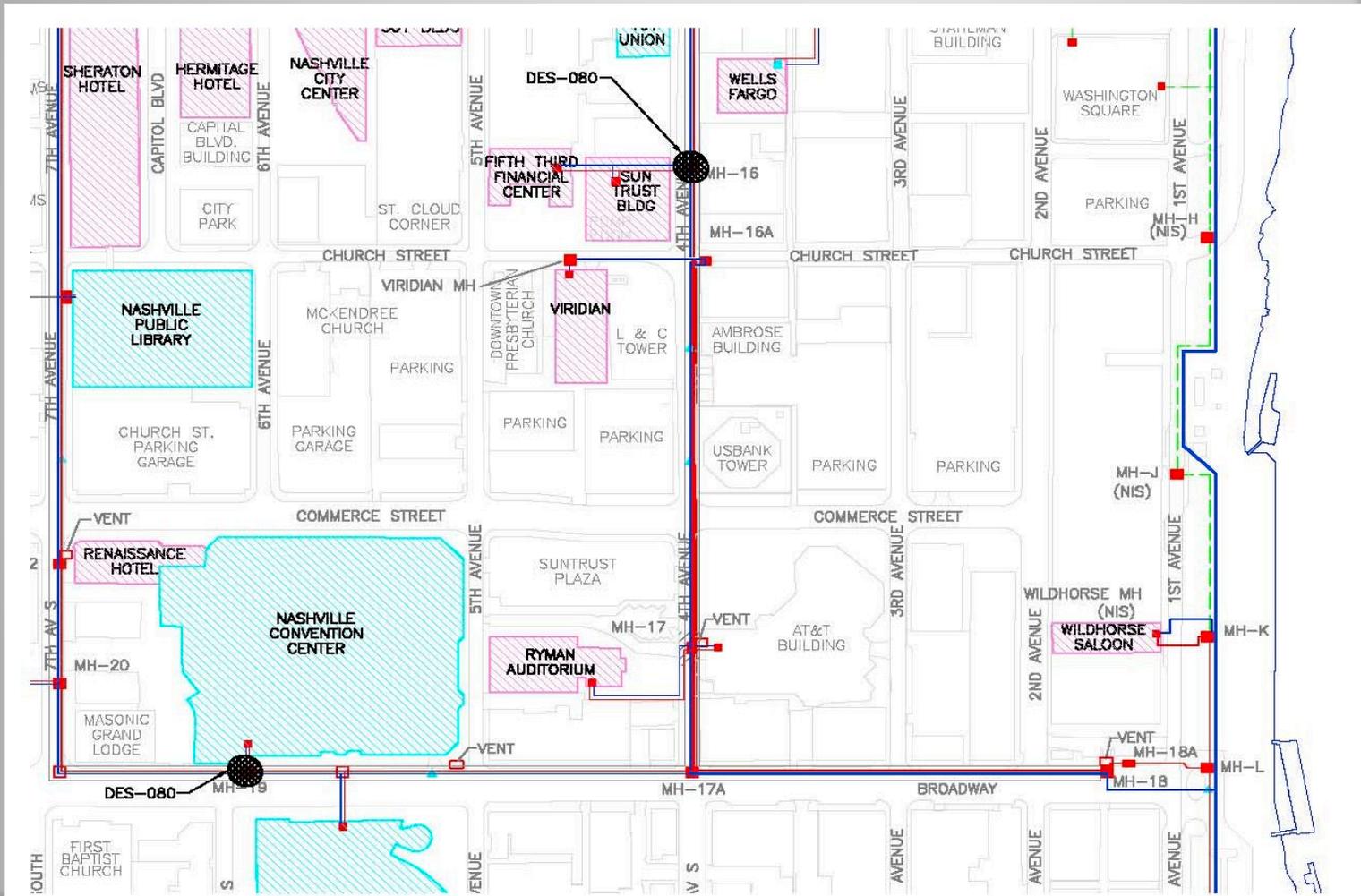
## Active Capital Projects

- DES 061: MH & Tunnel Steel Corrosion Repair & Prevention – ongoing
- DES 080: Misc. MH & Tunnel Safety Repairs – in closeout
- DES 091: TOU and Thermal Storage – developing TOU customer rates
- DES 094: Molloy Street Exploratory Dig – in closeout
- DES 095: MH B2 Water Infiltration Remediation – in closeout
- DES 098: Service Connection to Nashville Hyatt Place – complete; waiting for instrumentation installation – coordinating with building contractor
- DES 100: MH-10 Sump Pump – in design

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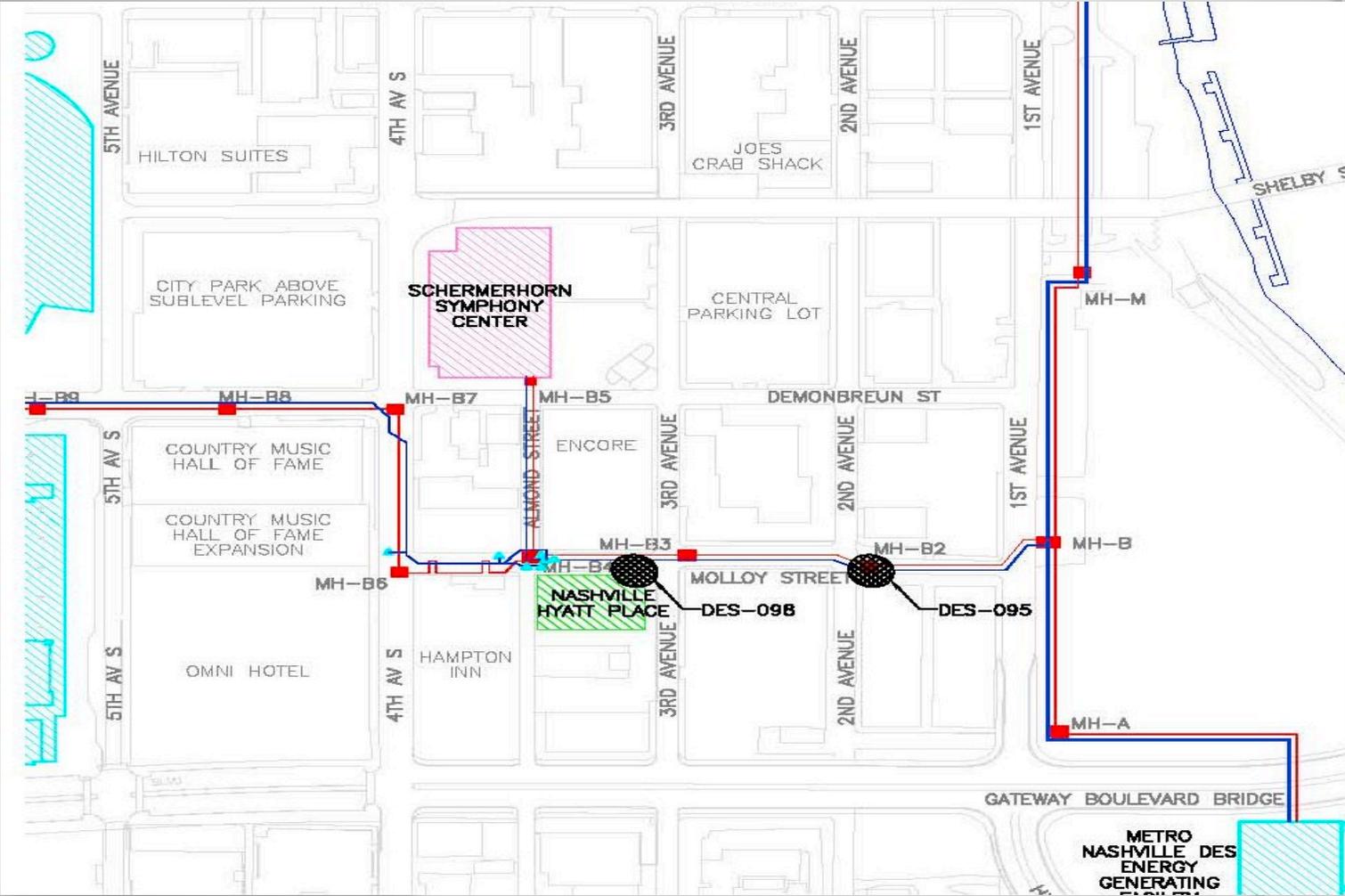
## Active Capital Projects



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## Active Capital Projects





# *Capital Projects Review*

## Capital Projects in Close-out

- DES 080: Misc. MH & Tunnel Safety Repairs
- DES 090: Manhole & Tunnel Insulation – closed (ongoing)
- DES 094: Molloy Street Exploratory Dig
- DES 095: MH B2 Water Infiltration Remediation
- DES 099: 2012 Steam Shut-down (MH-B Valve Removal) – completed



## ***8. New Website Format***

- ❖ Randall Pomeroy with Pomeroy Marketing and Communications to present changes to DES website
- ❖ <http://www.nashville.gov/District-Energy-System.aspx>



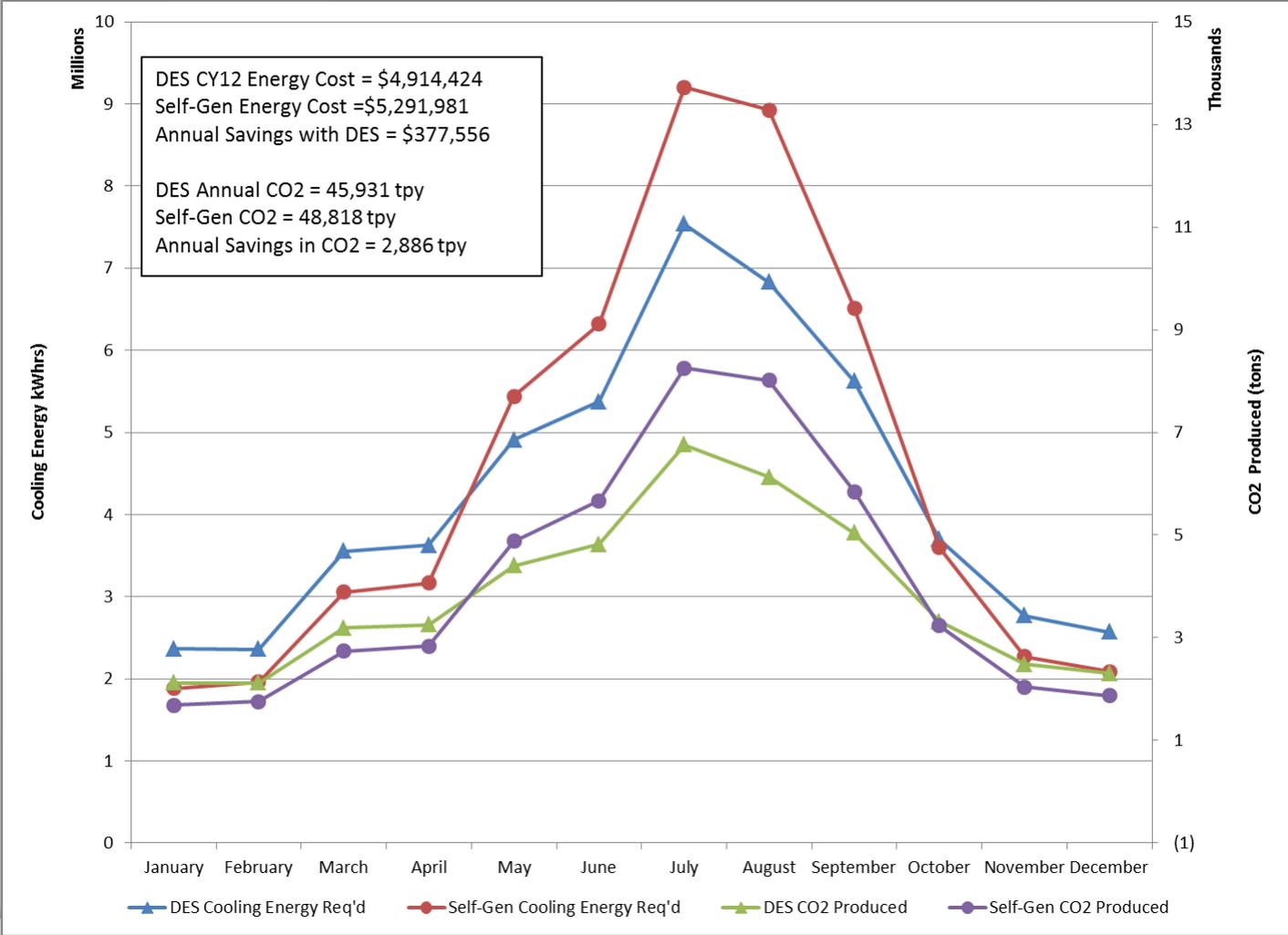
## 9. *Other Board Member Items*

- ❖ Avoided Energy Costs and CO<sub>2</sub> Production Related to the Self-Generation of Heating and Cooling with In-building Equipment
- ❖ Fig 9A: Cooling Comparison for CY12
- ❖ Fig 9B: Heating Comparison for CY12

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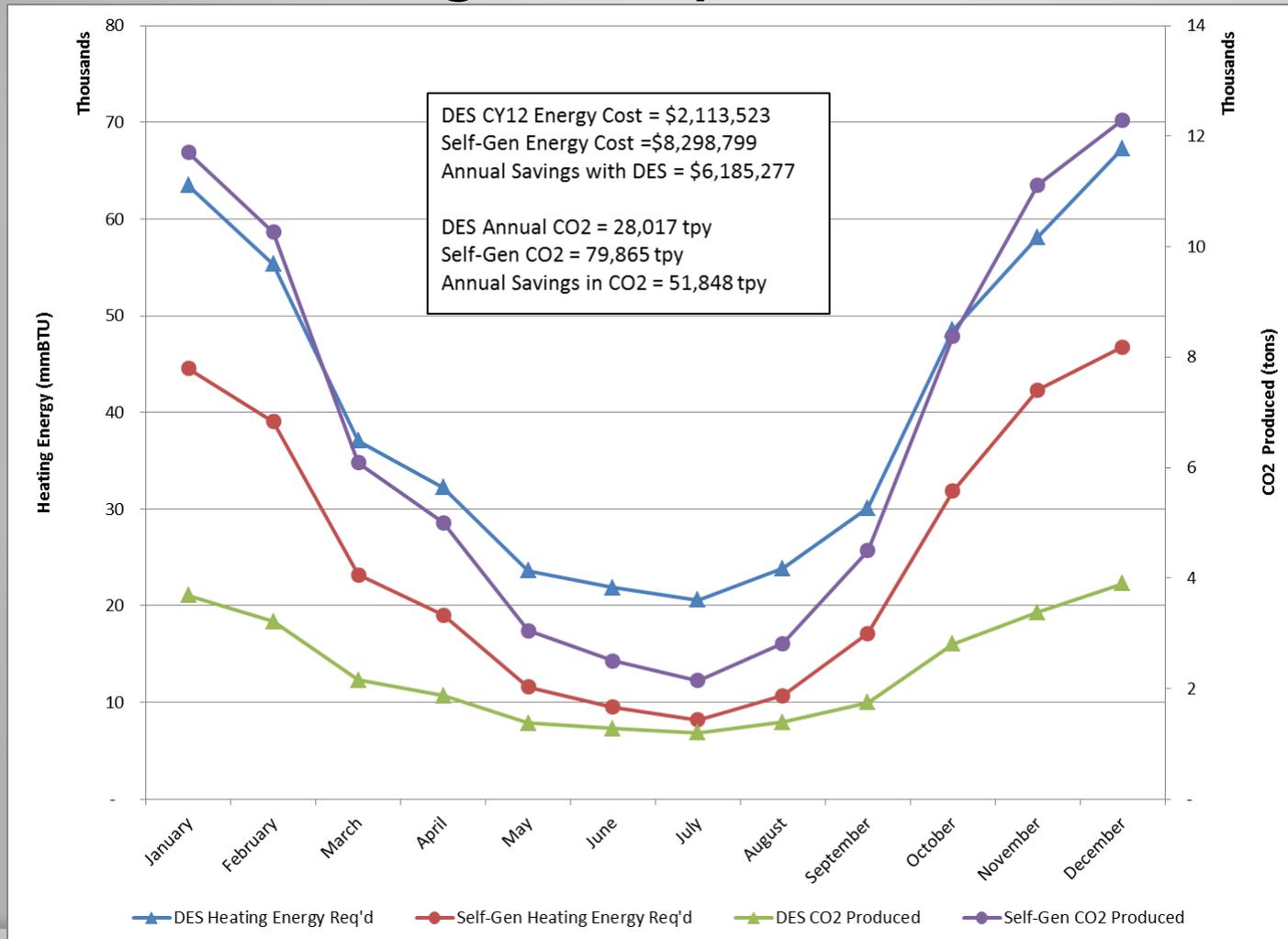
## Fig 9A: Cooling Comparison for CY12



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## Fig 9B: Heating Comparison for CY12





## *New Board Member Items*

*Customer Meeting – March 21, 2013 at 12:30 pm*

### *10. Adjourn*

- *Advisory Board Meeting Schedule*
- FY13 – 3<sup>rd</sup> Quarter Meeting – May 16, 2013
- FY13 – 4<sup>th</sup> Quarter Meeting – August 15, 2013
- FY14 – 1<sup>st</sup> Quarter Meeting – November 21, 2013
- FY14 – 2<sup>nd</sup> Quarter Meeting – February 20, 2014