

Metro Nashville
DISTRICT ENERGY SYSTEM



DES Advisory Board Meeting
First Quarter FY13
November 15, 2012



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. FY13 Budget Update
8. Capital Projects Review & Status Report Update
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: CHW Sales & CDD
- ❖ Figure 3B: Steam Sales & HDD

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

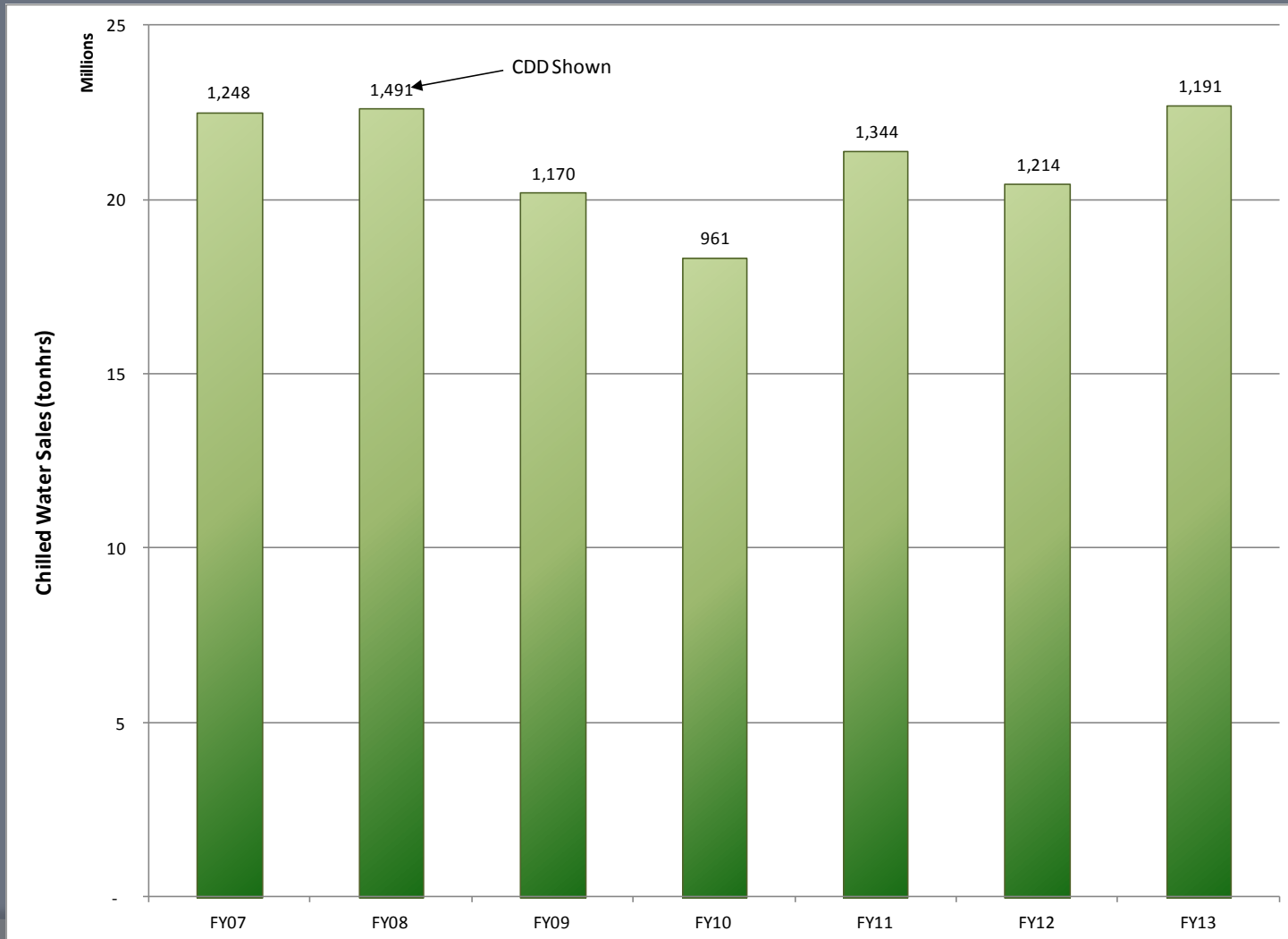
		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Oct 2010 - Sept 2011	Oct 2011 - Sept 2012	% Diff.	Oct 2010 - Sept 2011	Oct 2011 - Sept 2012	% Diff.
Private	Cost	\$ 1,611,911	\$ 1,375,223	-14.68%	\$ 3,318,769	\$ 3,358,928	1.21%
	Usage (lbs or tonhrs)	78,781,426	77,661,948	-1.42%	17,099,377	17,886,987	4.61%
	Unit Cost	\$ 20.46	\$ 17.71	-13.5%	\$ 0.194	\$ 0.188	-3.2%
State	Cost	\$ 2,074,244	\$ 1,821,194	-12.20%	\$ 3,426,692	\$ 3,445,843	0.56%
	Usage (lbs or tonhrs)	92,631,933	88,566,614	-4.39%	16,804,270	17,219,018	2.47%
	Unit Cost	\$ 22.39	\$ 20.56	-8.2%	\$ 0.204	\$ 0.200	-1.9%
Metro	Cost	\$ 1,898,623	\$ 1,635,618	-13.85%	\$ 3,290,498	\$ 3,259,572	-0.94%
	Usage (lbs or tonhrs)	89,651,041	84,834,001	-5.37%	19,003,327	18,905,054	-0.52%
	Unit Cost	\$ 21.18	\$ 19.28	-9.0%	\$ 0.173	\$ 0.172	-0.4%
Aggregate	Cost	\$ 5,640,798	\$ 4,930,021	-12.60%	\$ 10,633,431	\$ 11,002,590	3.47%
	Usage (lbs or tonhrs)	261,111,548	257,640,772	-1.33%	55,191,768	59,484,054	7.78%
	Unit Cost	\$ 21.60	\$ 19.14	-11.4%	\$ 0.193	\$ 0.185	-3.99%

*FY11 MFA = \$2,444,100; FY12 MFA=\$2,363,000 post-True-up; MFA not included in values shown

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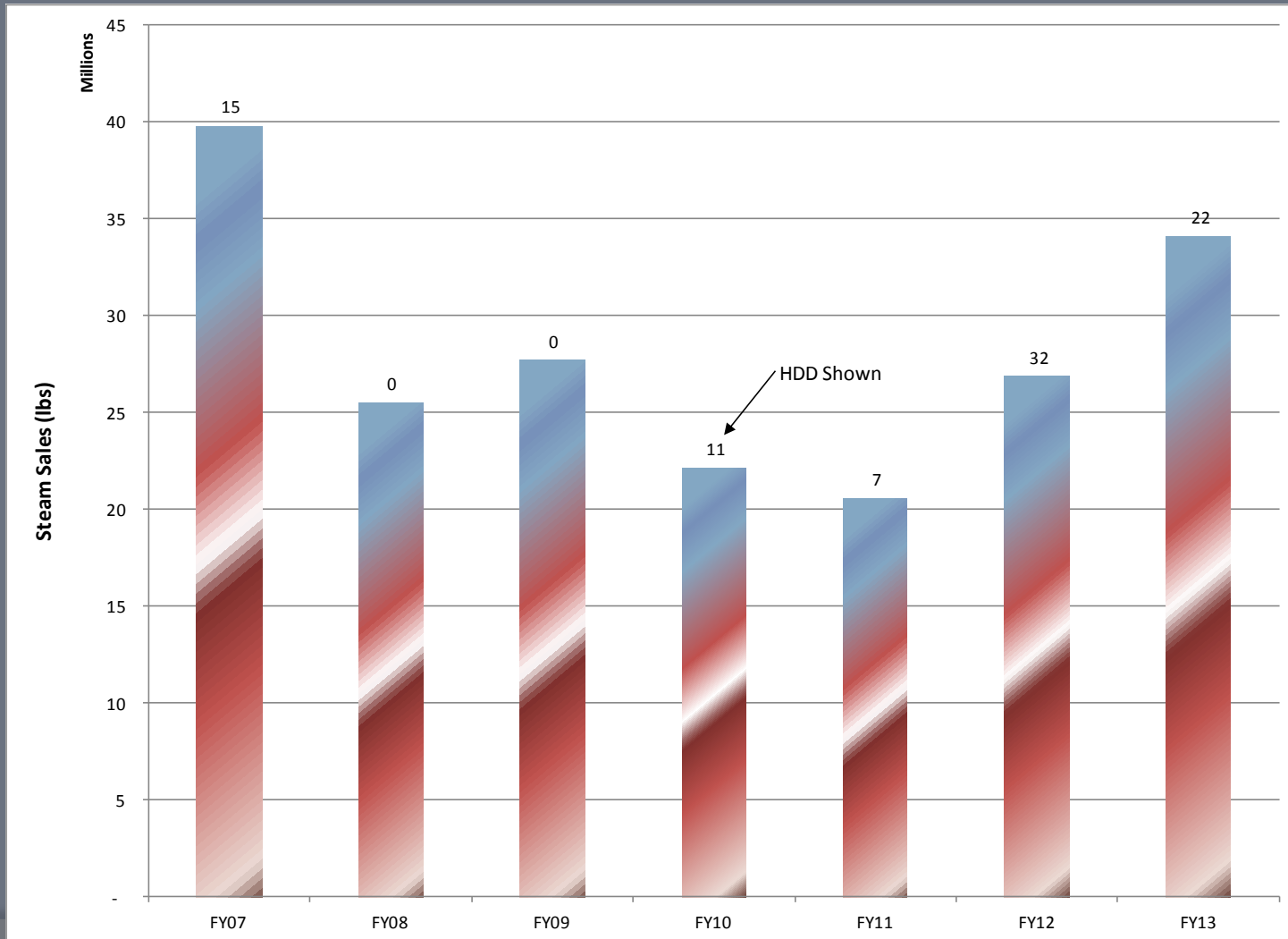
Figure 3A: Historic 1st Quarter CHW Sales



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Figure 3B: Historic 1st Quarter Steam Sales





4. *Review of DES Contractor Performance*

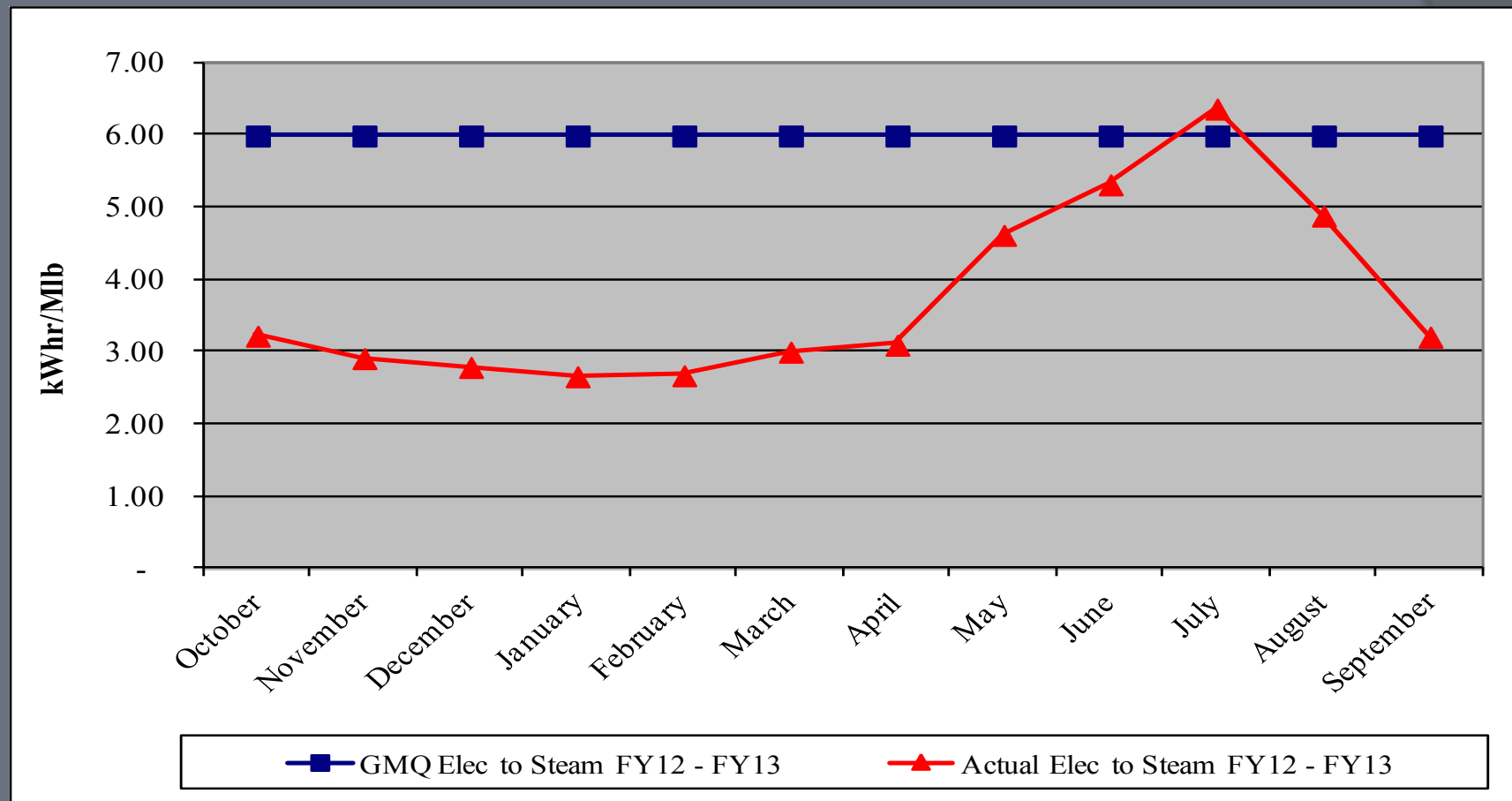
Contractor (CNE) is in compliance with their contractual obligations for FY13.

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

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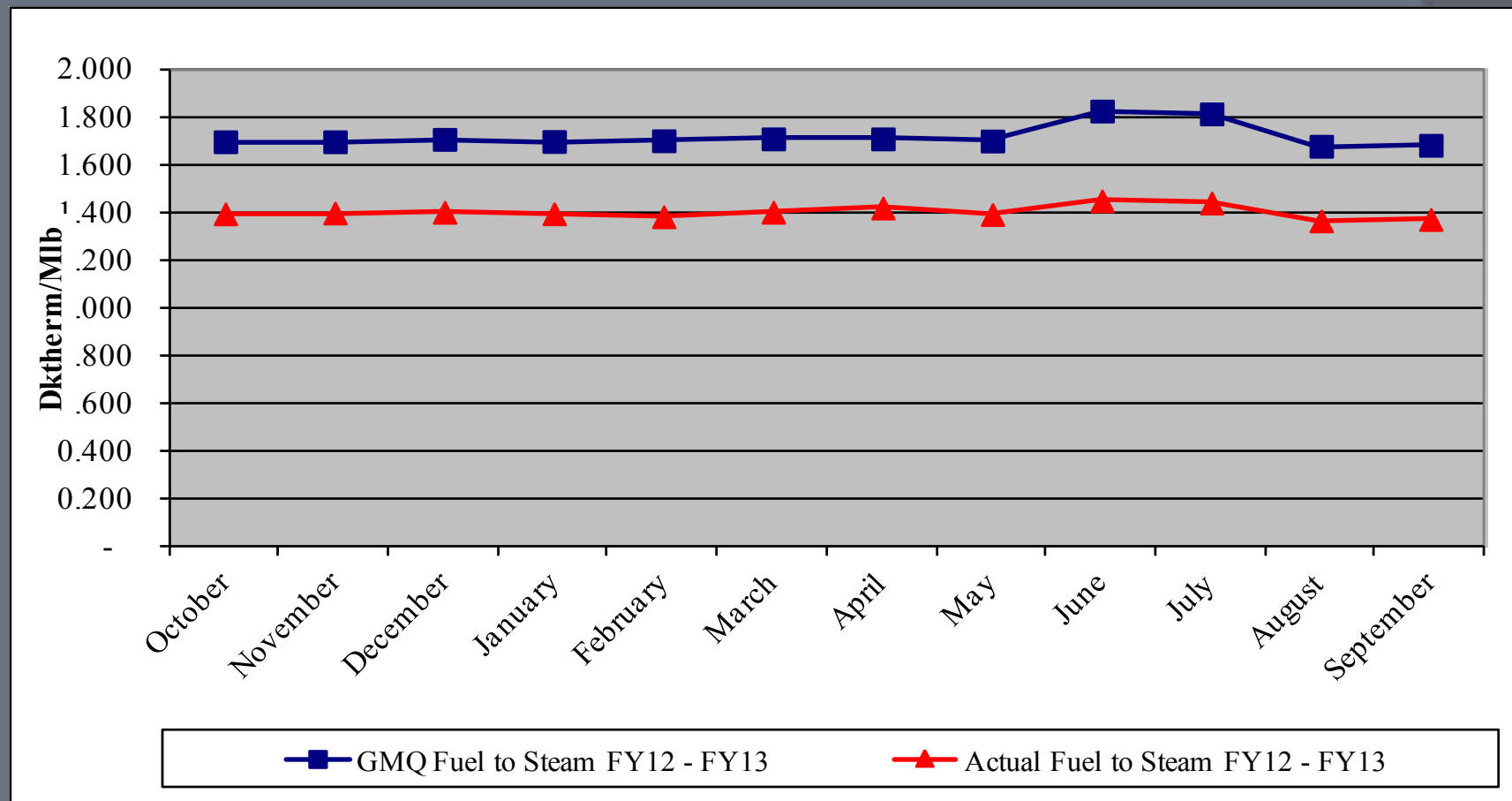
Performance Measurement FY13: Steam Electric Conversion ●



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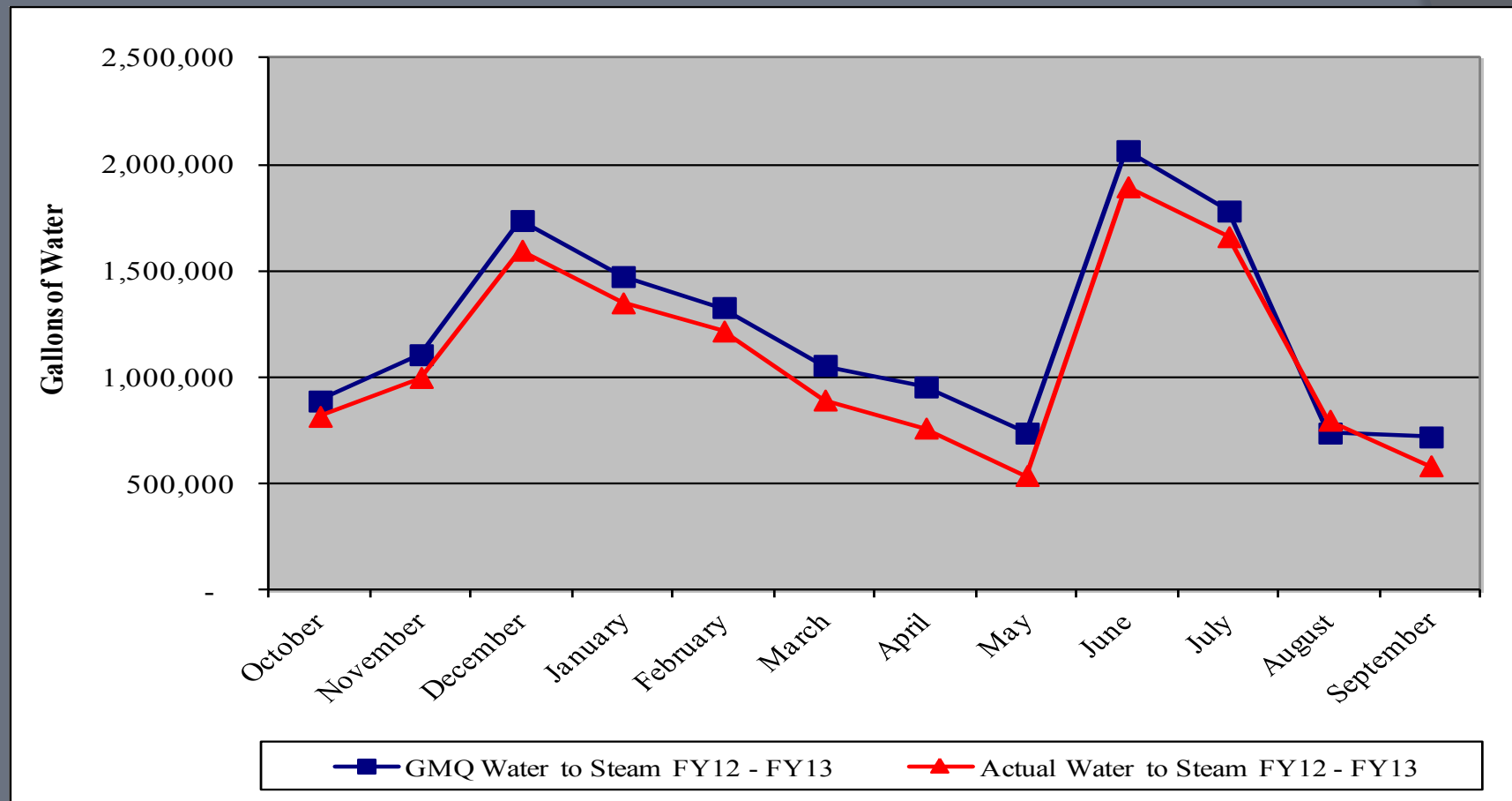


Performance Measurement FY13: Steam Plant Efficiency ●



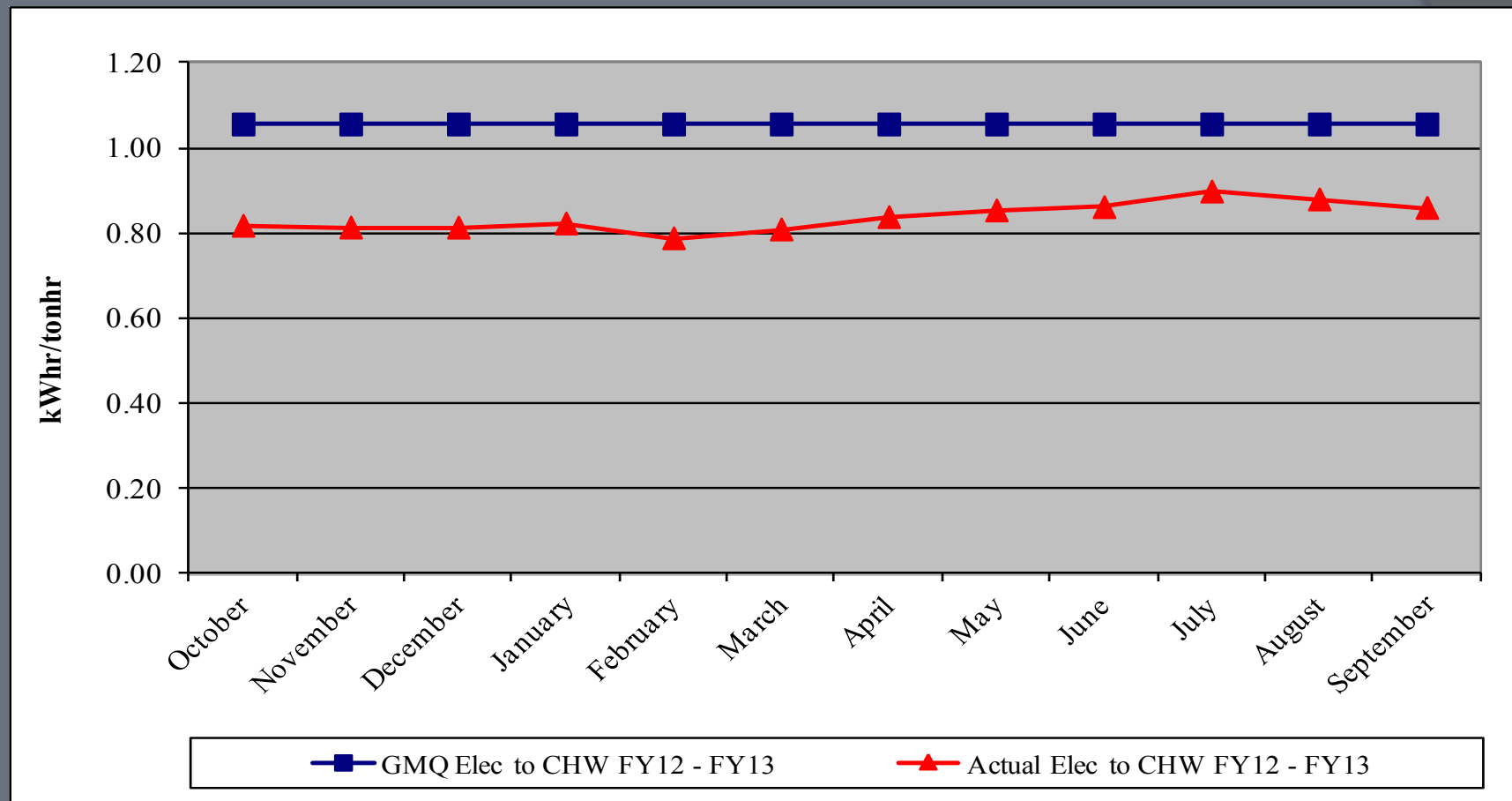


Performance Measurement FY13: Steam Water Conversion



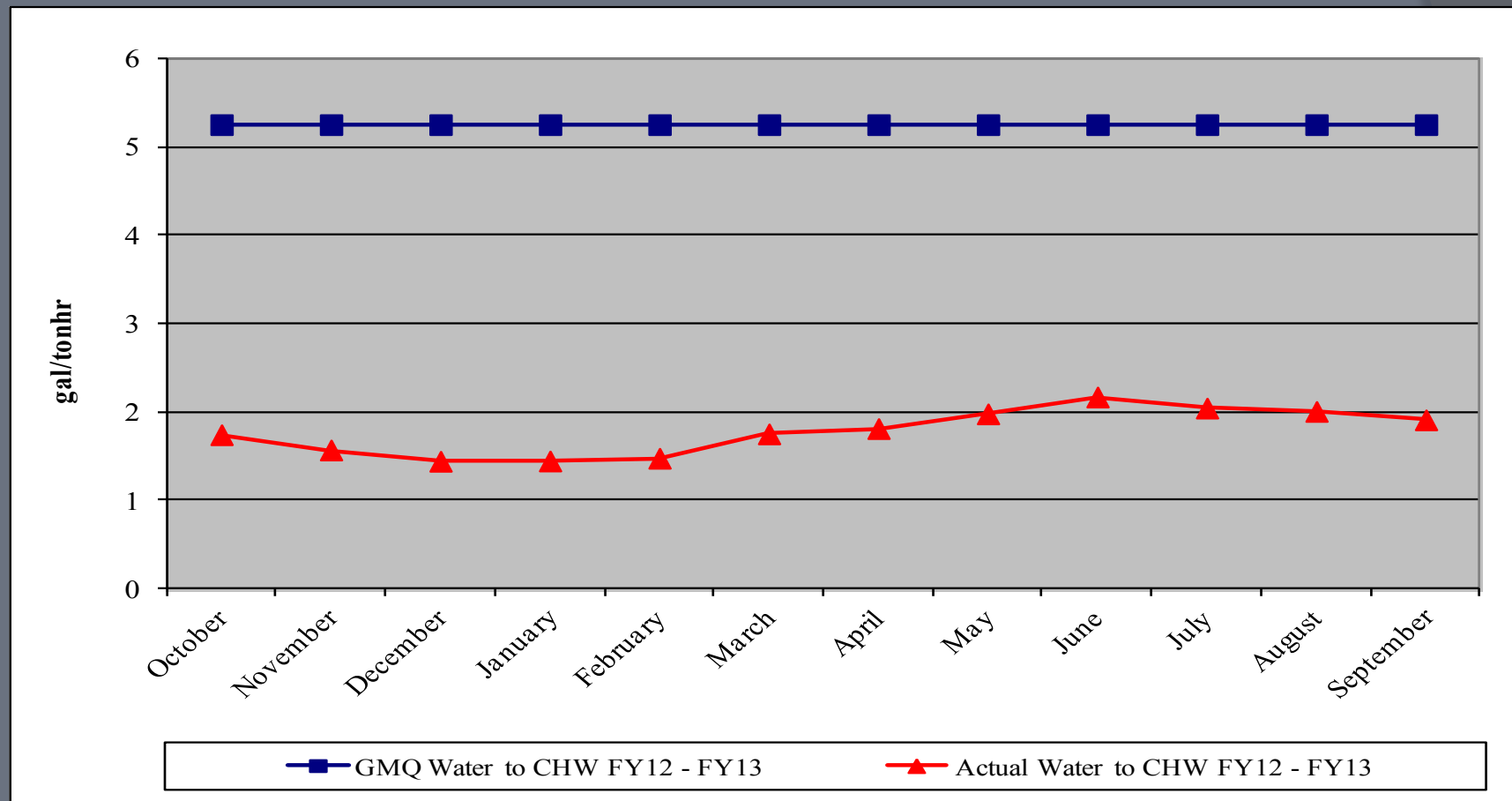


Performance Measurement FY13: CHW Electric Conversion ●





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 (MH B2 being sealed) ●
 - ✓ Corrosion of Structural Metal Components ●
- ✓ Safety Items (DES 080 under construction – additional items added to scope) ●



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



Table 5: FY13 Gas Spending & Budget Comparison

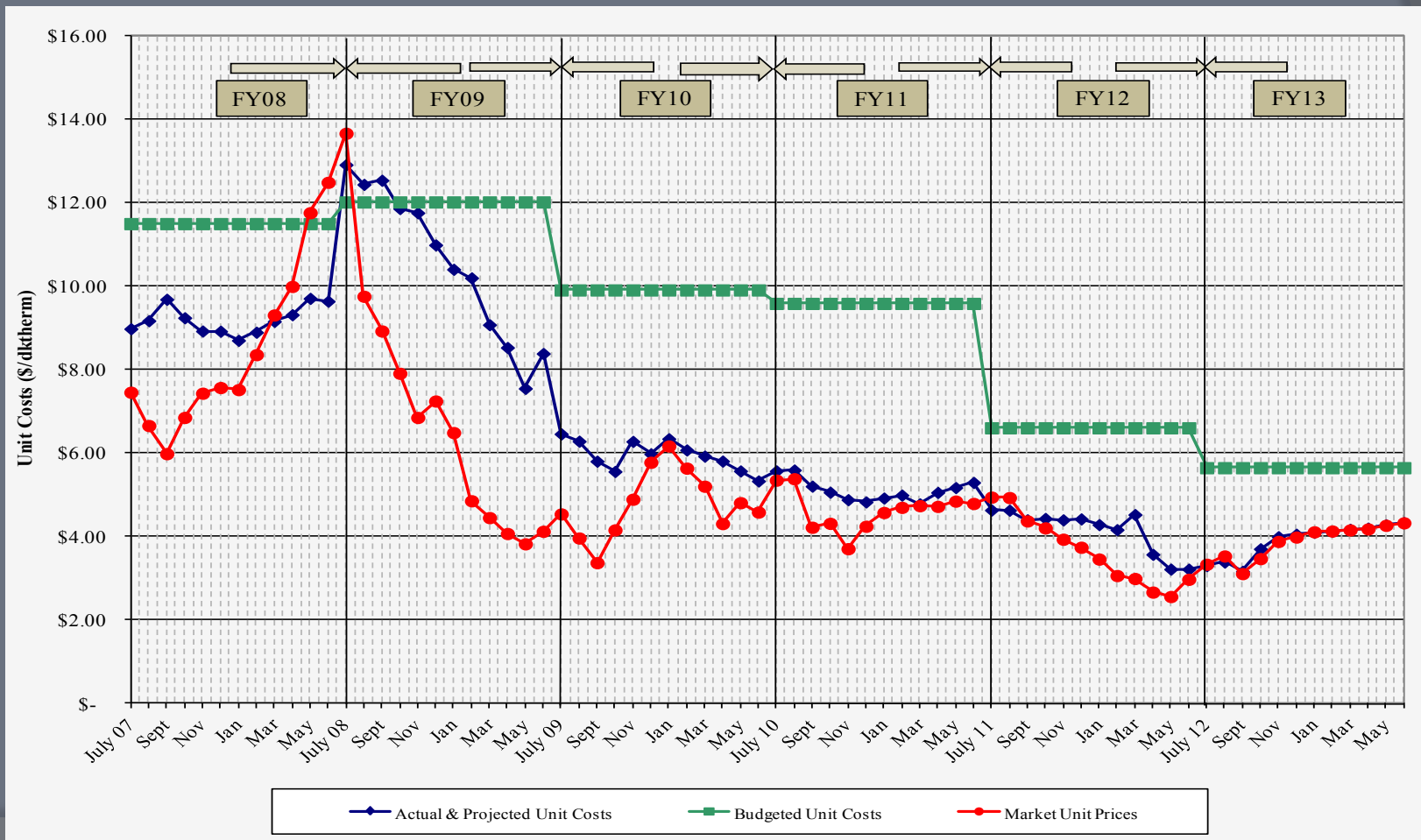
	Actual FY13 To date (Sept 30)	Budget FY13	Percent Difference
Steam Sendout (Mlbs)	53,379	40,422	-32.1%
Fuel Use (Dth) (includes propane)	● 74,016	55,940	-32.3%
Plant Eff (Dth/Mlb)	● 1.387	1.384	-0.2%
Total Gas Cost (includes propane)	● \$281,459	\$316,453	11.1%
Unit Cost of Fuel (\$/ Dth)	● \$3.803	\$5.657	31.2%

Excludes consultant fees and FEA; MCC Budget = 738,551 lbs;
 Actual = 2,629,997 lbs

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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	\$ 1,097,747	25.51%
Pass Throughs				
Non-Energy	\$ 842,241	\$ 1,031,400	\$ 178,712	17.33%
Water/Sewer	\$ 433,255	\$ 597,700	\$ 200,346	33.52%
Natural Gas	\$ 2,025,943	\$ 3,939,300	\$ 283,559	7.20%
Electricity	\$ 4,737,502	\$ 5,192,900	\$ 2,193,683	42.24%
Debt Service	\$ 4,928,191	\$ 5,021,600	\$ 1,126,463	22.43%
Total Expenses	\$ 17,270,232	\$ 20,086,000	\$ 5,080,511	25.29%
Total Revenues	\$ 15,644,921	\$ 17,723,000	\$ 4,781,761	26.98%
Metro Funding Amount	\$ 2,363,000	\$ 2,363,000	\$ 298,749	12.64%

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7. FY13 Submitted Budget

Item	FY12 Actual	FY12 Budget	FY13 Budget	Percent Change (Budgets)
FOC's	\$ 4,303,100	\$ 4,303,100	\$ 4,401,100	2.28%
Pass Throughs				
Non-Energy	\$ 842,241	\$ 1,031,400	\$ 1,098,400	6.50%
Water/Sewer	\$ 433,255	\$ 597,700	\$ 616,500	3.15%
Natural Gas	\$ 2,025,943	\$ 3,939,300	\$ 3,185,100	-19.15%
Electricity	\$ 4,737,502	\$ 5,192,900	\$ 5,673,500	9.25%
Debt Service	\$ 4,928,191	\$ 5,021,600	\$ 4,163,555	-17.09%
Total Expenses	\$ 17,270,232	\$ 20,086,000	\$ 19,138,155	-4.72%
Total Revenues	\$ 15,644,921	\$ 17,723,000	\$ 16,822,500	-5.08%
Metro Funding Amount	\$ 2,363,000	\$ 2,363,000	\$ 2,315,655	-2.00%



8. Capital Expenditure Update

	Spent to End of FY12	FY13 Spending	Balance to Date (09/30/12)
R&I Projects	\$1,543,008	\$273,503	\$242,656
2005B Bond	\$8,186,500	\$0	\$0
2010 Bond	\$1,876,222	\$1,243	\$532,535
MCCC Fund	\$5,264,022	\$63,641	\$3,172,338
Total	\$16,869,752	\$338,387	\$3,947,529



Capital Projects Review

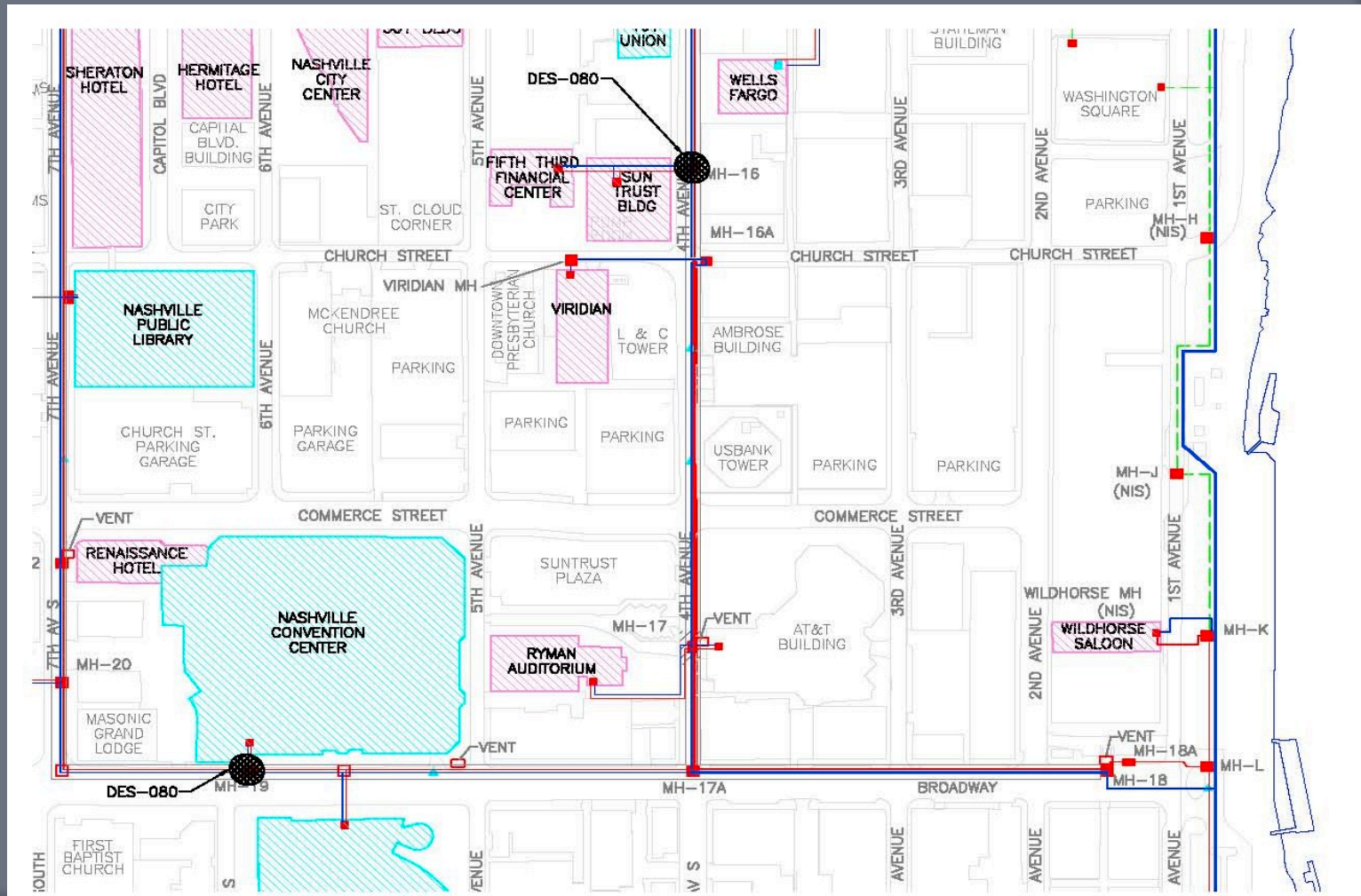
Active Capital Projects

- DES 061: MH & Tunnel Steel Corrosion Repair & Prevention – ongoing
- DES 080: Misc. MH & Tunnel Safety Repairs – punch list items being addressed
- DES 094: Molloy Street Exploratory Dig – in closeout
- DES 095: MH B2 Water Infiltration Remediation – punch list items being addressed
- DES 098: Service Connection to Nashville Hyatt Place – in construction
- DES 100: MH-10 Sump Pump – in design

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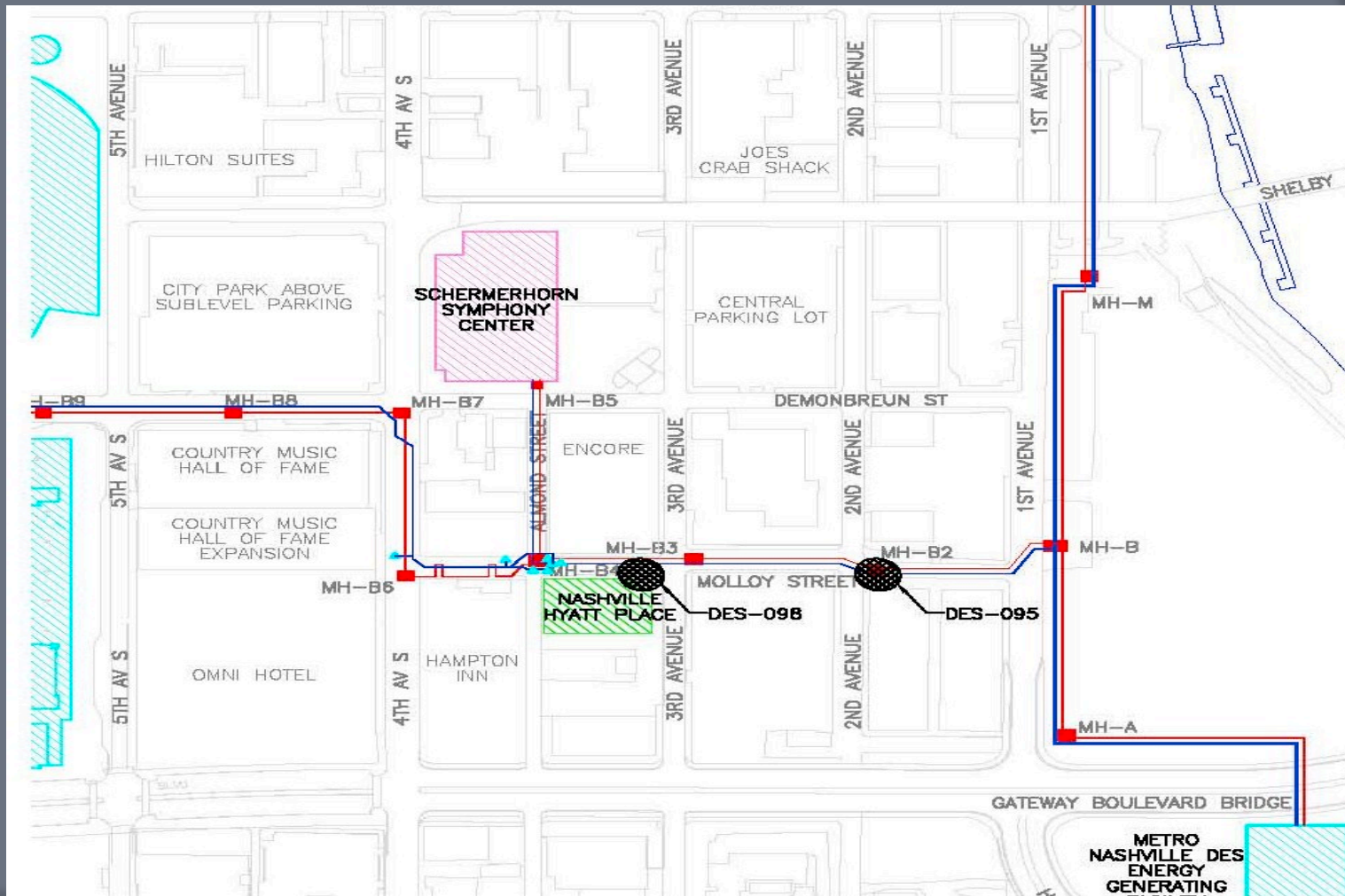
Active Capital Projects



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Active Capital Projects





Capital Projects Review

Capital Projects in Close-out

- DES 048: Tunnel Lighting - closed
- DES 076: Manhole S4A Repair - closed
- DES 087: Exploratory Dig @ MH D/CJC (chilled water leak) - closed
- DES 090: Manhole & Tunnel Insulation – closed (ongoing)
- DES 091: TOU and Thermal Storage – no further action
- DES 093: Manhole 6 Repair and Structural Rehabilitation - closed
- DES 097: EGF Cooling Tower Re-Test – completed
- DES 099: 2012 Steam Shut-down (MH-B Valve Removal) – completed



9. *Other Board Member Items*

- ❖ Expansion of the EGF with Service Down Peabody
 - ❖ Requires additional equipment at EGF
- ❖ Equipment Options
 - ❖ Conventional Chillers and Boilers (No Operational Savings)
 - ❖ CHW Storage or Ice Storage (Electric Load Shedding and Shifting)
 - ❖ Cogeneration (Energy Savings Potential and Electric Load Shedding)



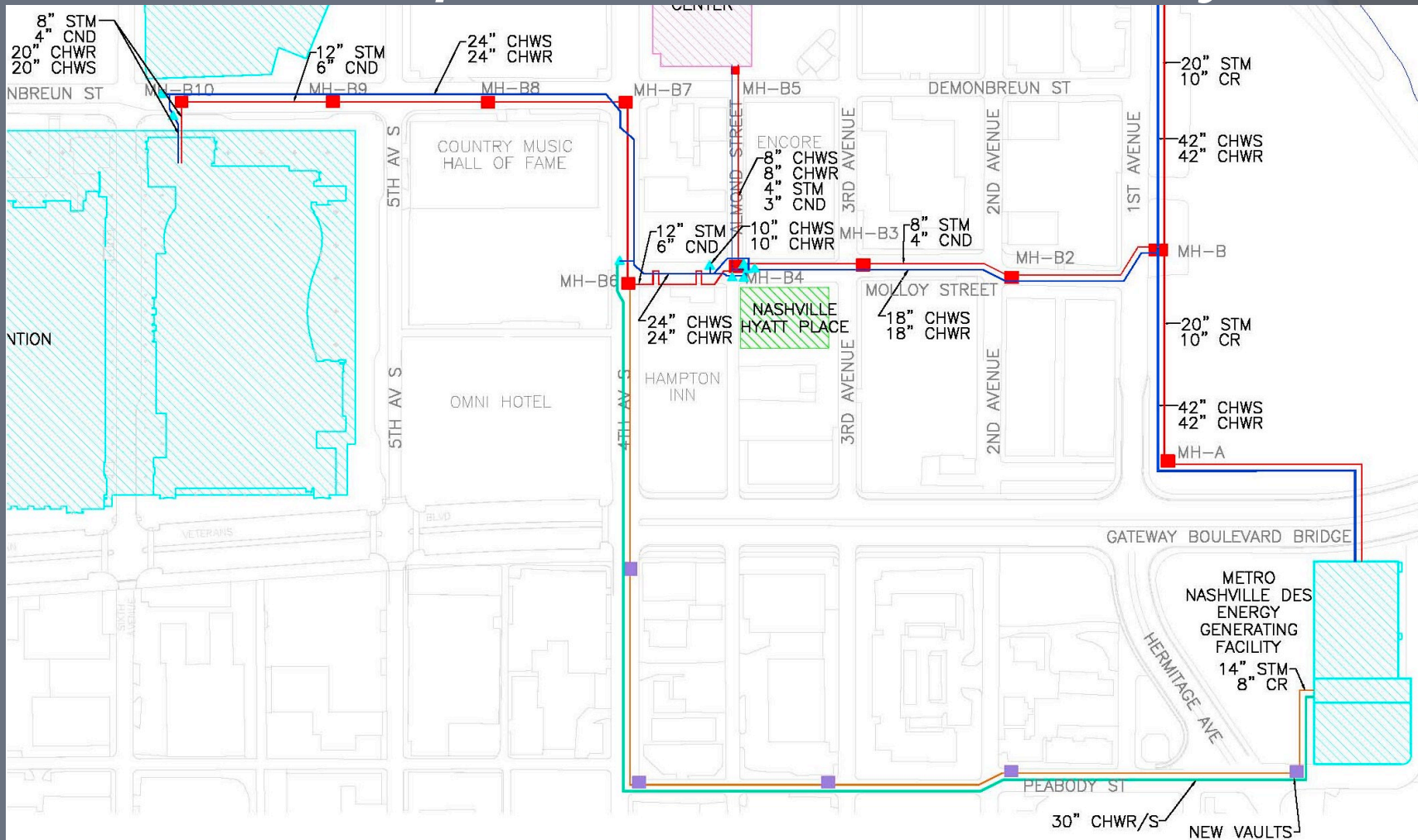
Equipment Expansion Options

- ❖ Conventional Equipment
 - ❖ 5,200 tons Chilled Water and 65,000 pph Steam
 - ❖ Service to Approximately 3,000,000 sq ft of New Customers
 - ❖ No Operational Savings
- ❖ CHW Storage or Ice Storage
 - ❖ Approximate 4,000 kW Electric Peak Load Shedding
 - ❖ Electric Load Shifting to Off-Peak
 - ❖ Increase Capacity by Approximately 4,700 tons Chilled Water
 - ❖ Electric Savings of Approximately \$250,000 per year
 - ❖ Potential Room for 65,000 pph Steam
- ❖ Cogeneration
 - ❖ Approximate 6,000 kW to 8,000 kW Electric Peak Load Shedding
 - ❖ 2,600 tons Chilled Water and up to 150,000 pph Steam
 - ❖ Potential of Approximately \$2,000,000 per year Fuel and Electric Savings

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Service Expansion on Peabody

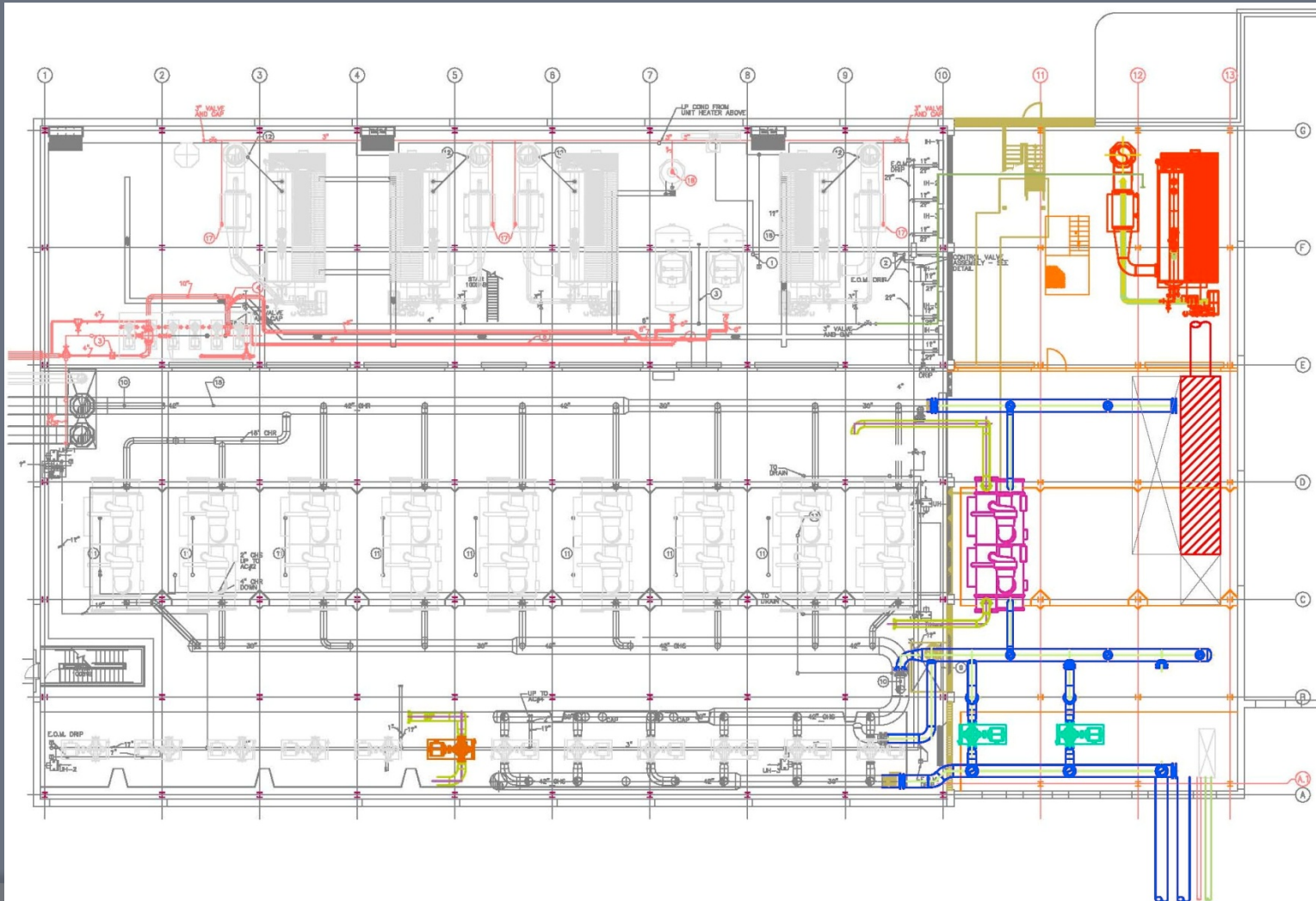


Requires increase in EGF capacity

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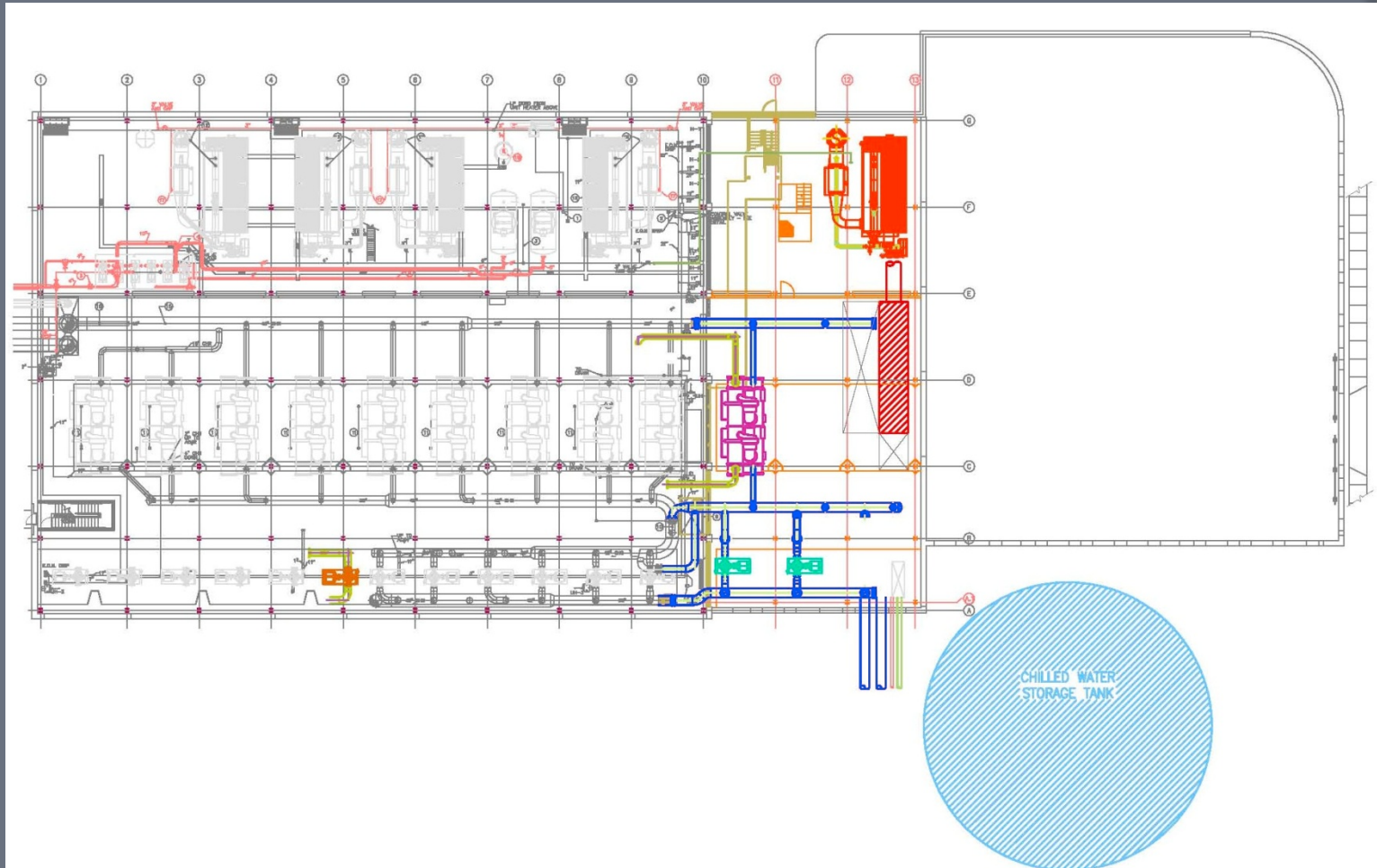
Equipment Expansion at EGF



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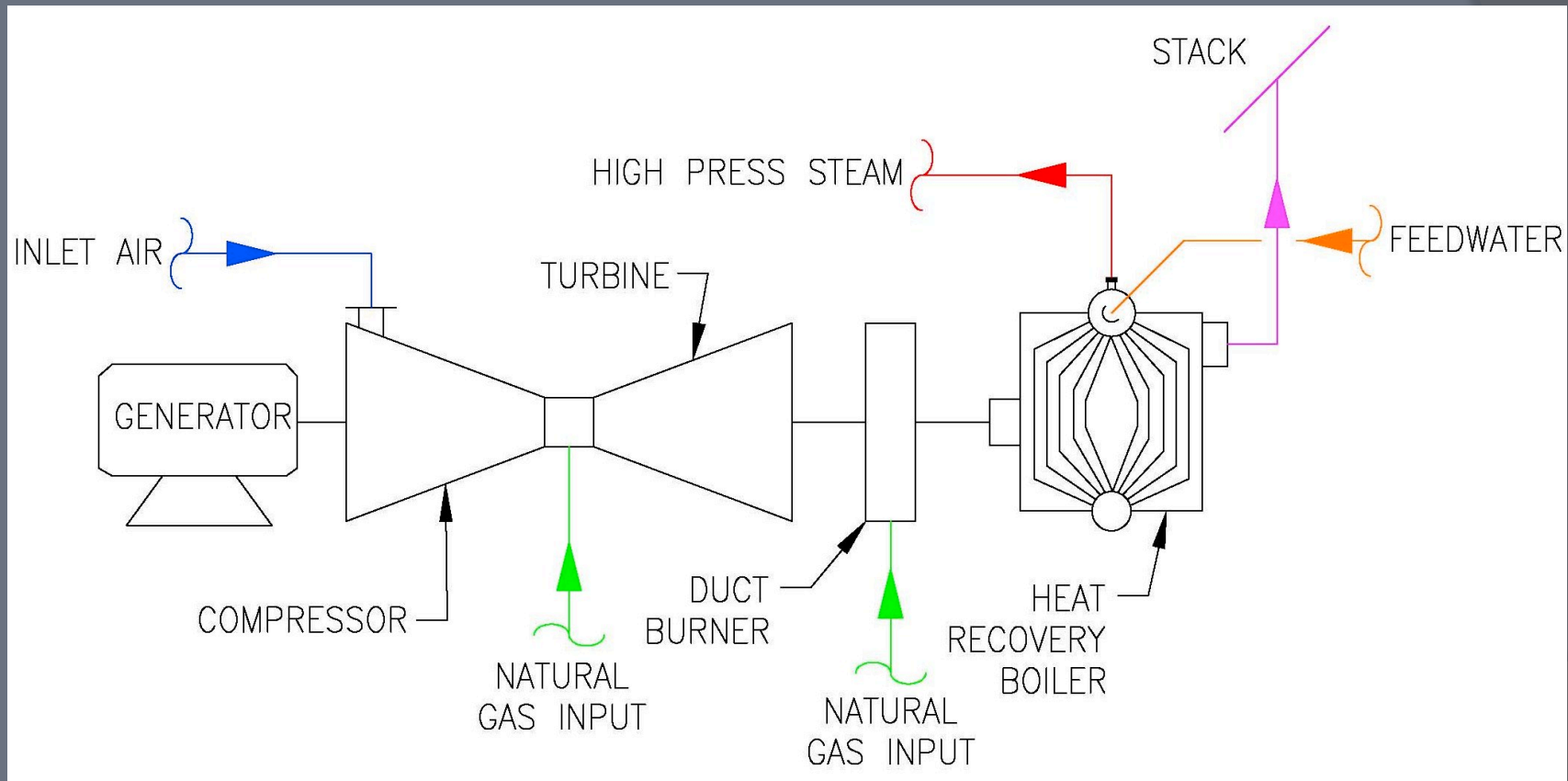


Equipment Expansion at EGF





Cogeneration



Existing Boilers = 1.401 dt/Mlb; \$6.51/Mlb (2011 values)

New HRSG + Boilers = 0.47 dt/Mlb; \$2.15/Mlb



Considerations

- ❖ Capital Recovery
- ❖ Increased Customer Demand
- ❖ Increased Maintenance Costs (Operator)
- ❖ Operating Costs
 - ❖ Electric Demand Reduction
 - ❖ Time of Day Rates
 - ❖ Efficiency Improvements



New Board Member Items

10. Adjourn

- *Advisory Board Meeting Schedule*
- FY13 – 2nd Quarter Meeting – February 21, 2013
- FY13 – 3rd Quarter Meeting – May 16, 2013
- FY13 – 4th Quarter Meeting – August 25, 2013
- FY14 – 1st Quarter Meeting – November 20, 2013