

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



*DES Advisory Board Meeting*  
*Third Quarter FY12*  
*May 17, 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. FY12 Costs to Date
7. Update on FY12 Budget
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

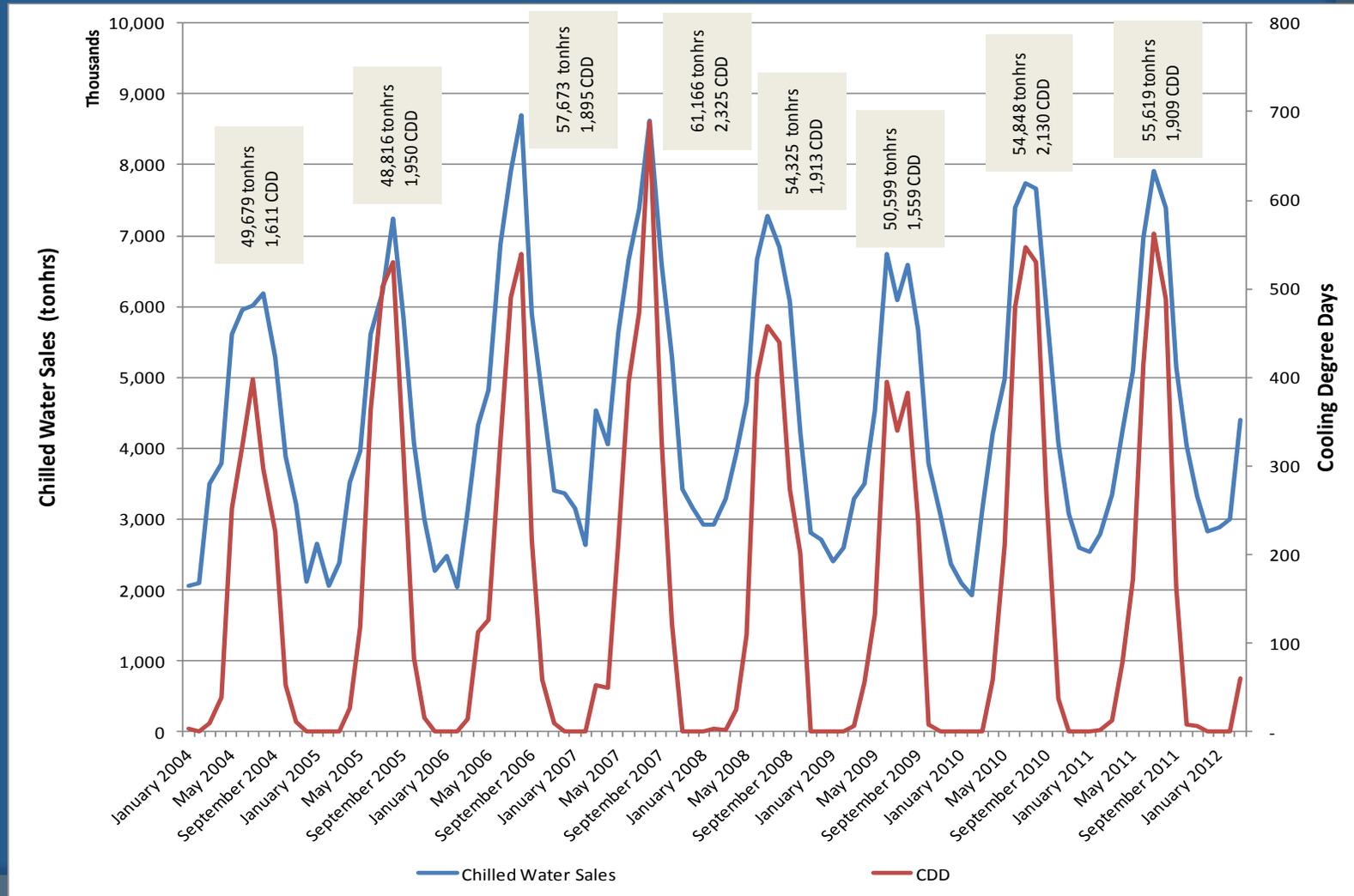
		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Apr 2011 - Mar 2011	Apr 2012 - Mar 2012	% Diff.	Apr 2011 - Mar 2011	Apr 2012 - Mar 2012	% Diff.
<b>Private</b>	Cost	\$ 1,594,263	\$ 1,444,939	-9.37%	\$ 3,184,104	\$ 3,357,010	5.43%
	Usage (lbs or tonhrs)	72,341,372	79,522,078	9.93%	17,444,562	17,869,948	2.44%
	Unit Cost	\$ 22.04	\$ 18.17	-17.6%	\$ 0.183	\$ 0.188	2.9%
<b>State</b>	Cost	\$ 2,100,852	\$ 1,893,713	-9.86%	\$ 3,331,546	\$ 3,466,582	4.05%
	Usage (lbs or tonhrs)	88,421,744	92,062,410	4.12%	17,539,204	17,582,753	0.25%
	Unit Cost	\$ 23.76	\$ 20.57	-13.4%	\$ 0.190	\$ 0.197	3.8%
<b>Metro</b>	Cost	\$ 1,892,433	\$ 1,689,879	-10.70%	\$ 3,128,791	\$ 3,298,471	5.42%
	Usage (lbs or tonhrs)	82,996,343	84,939,850	2.34%	18,961,342	19,354,000	2.07%
	Unit Cost	\$ 22.80	\$ 19.90	-12.7%	\$ 0.165	\$ 0.170	3.3%
<b>Aggregate</b>	Cost	\$ 5,643,373	\$ 5,051,229	-10.49%	\$ 10,219,751	\$ 10,732,370	5.02%
	Usage (lbs or tonhrs)	243,806,607	256,524,338	5.22%	56,381,396	57,212,050	1.47%
	Unit Cost	\$ 23.15	\$ 19.69	-14.9%	\$ 0.181	\$ 0.188	3.49%

\*FY09 MFA = \$3,217,986; FY10 MFA = \$2,661,553; FY11 MFA = \$2,444,100; post-True-up; MFA not included in values shown

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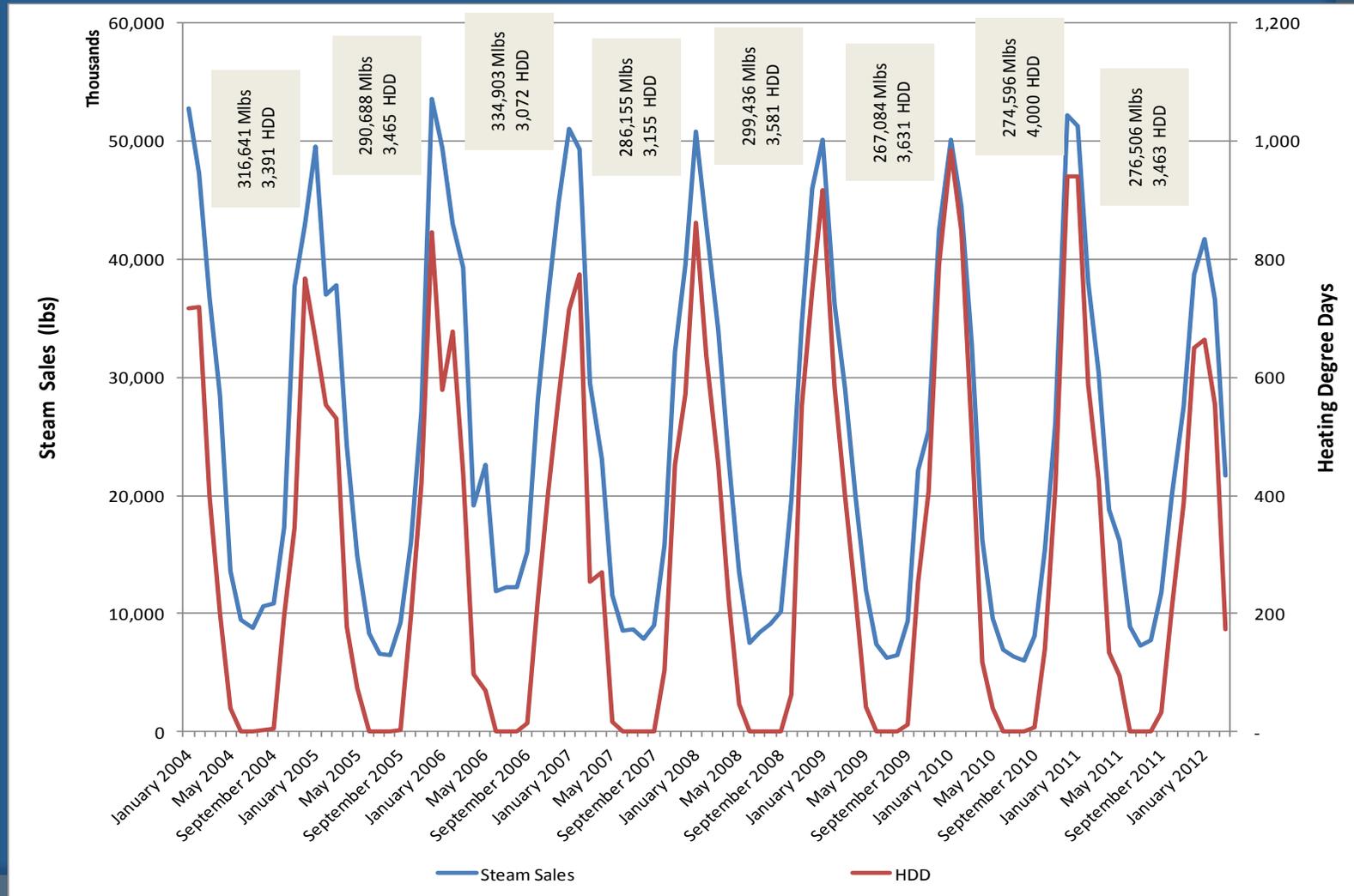
## Figure 3A: CHW Sales & Cooling Degree Days



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## Figure 3B: Steam Sales & Heating Degree Days





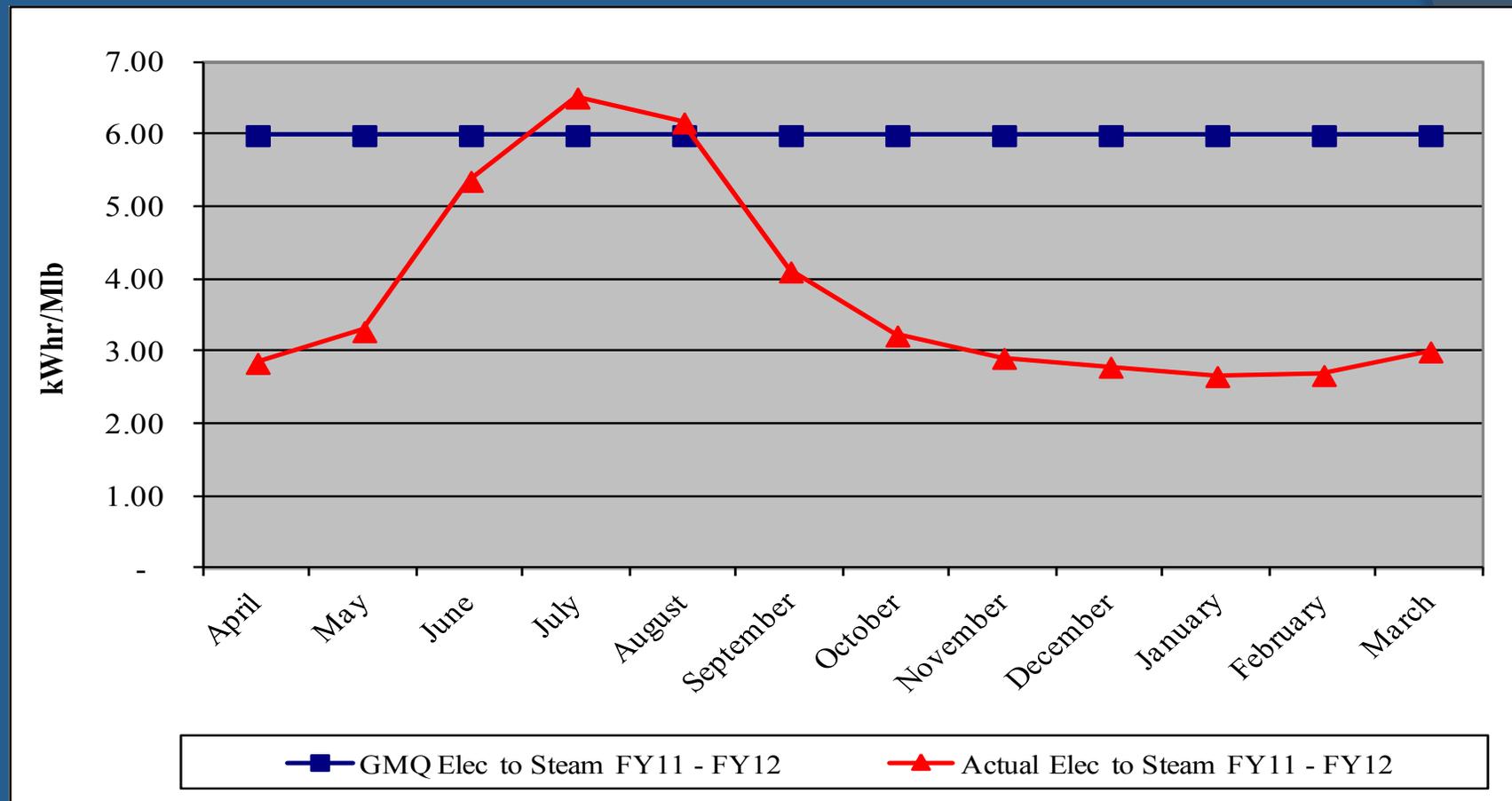
## 4. *Review of DES Contractor Performance*

Contractor (CEPS) is in compliance with their contractual obligations for FY12.

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



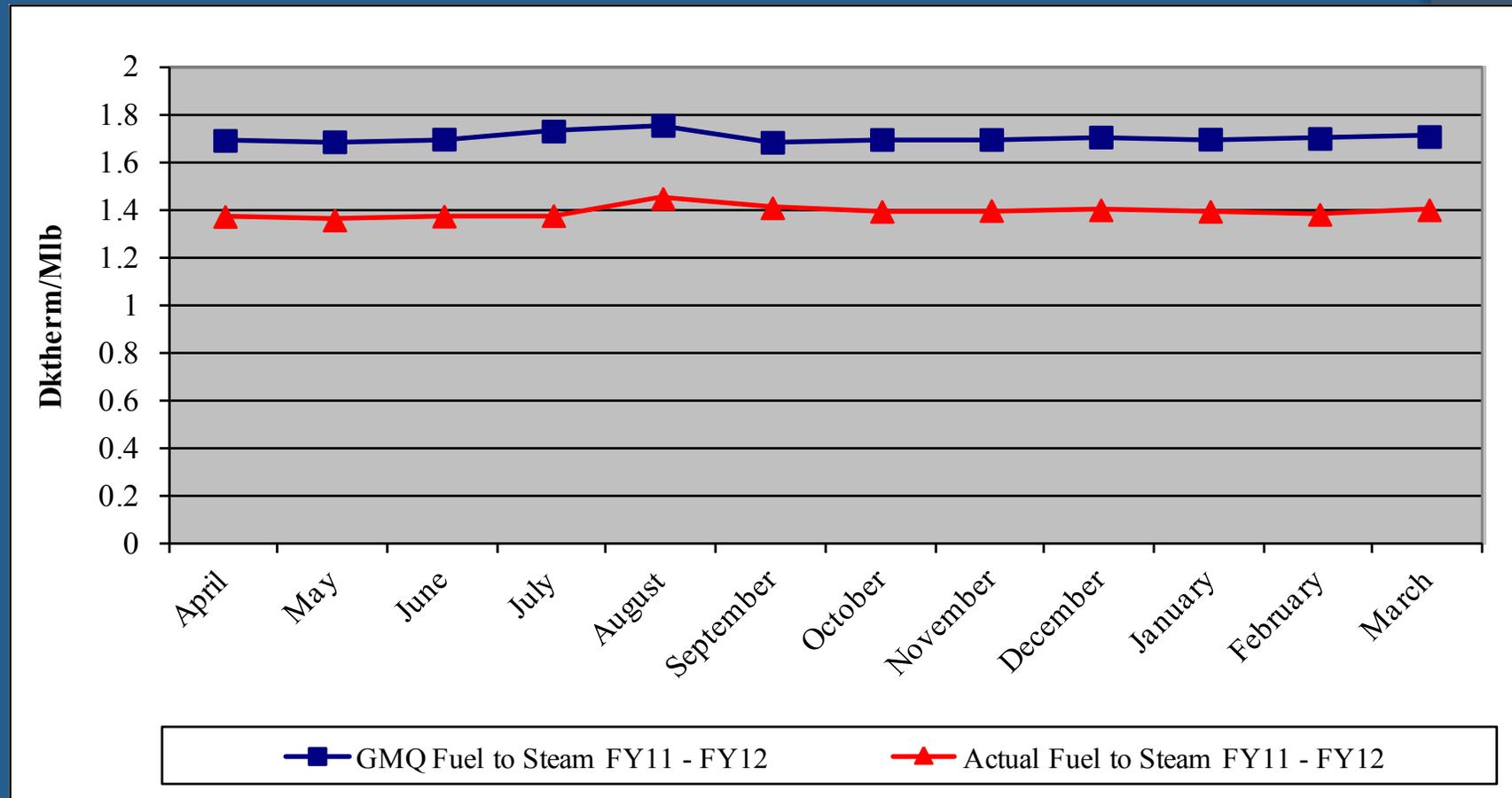
## Performance Measurement FY12: Steam Electric Conversion ●



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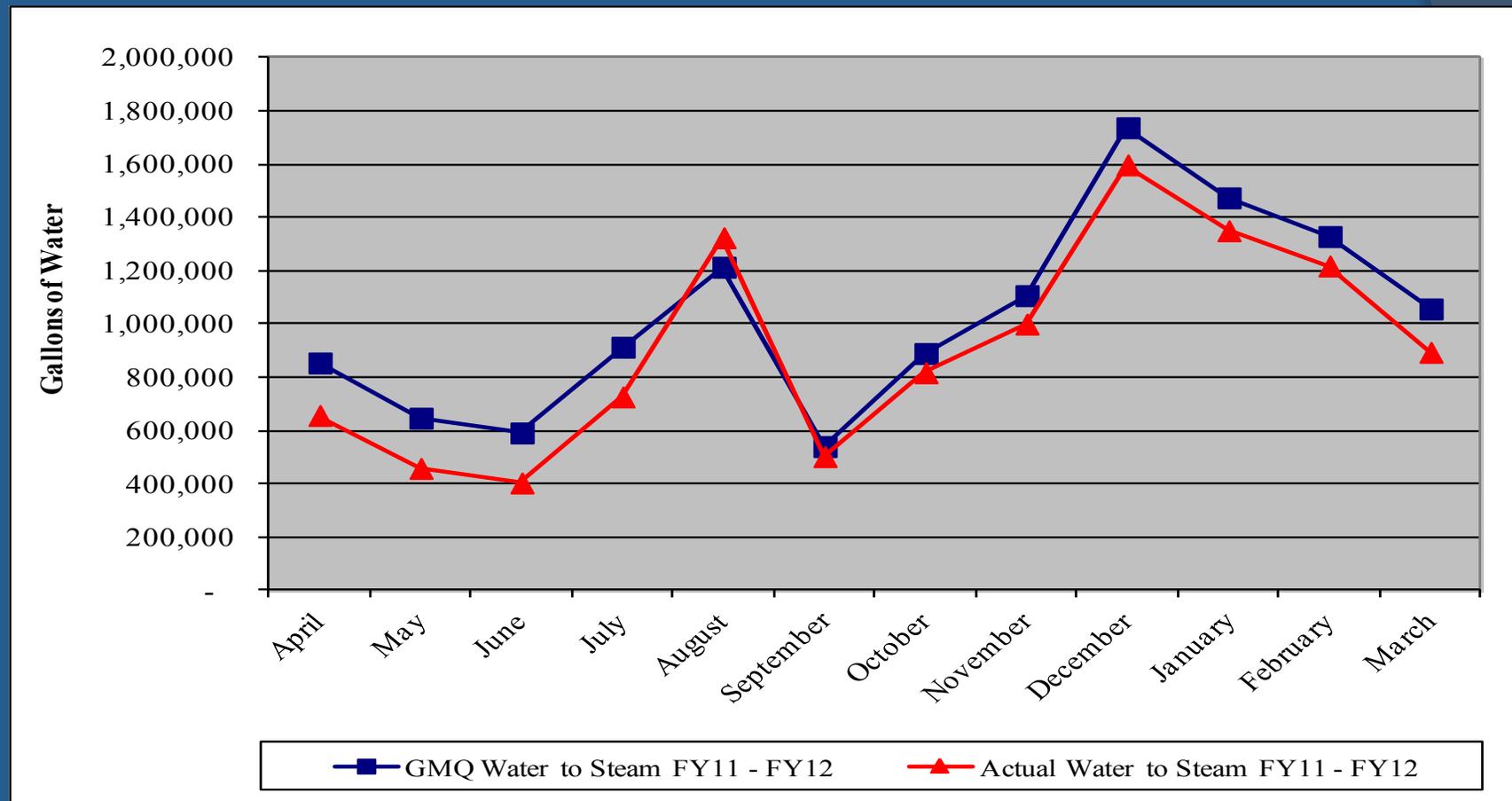


## Performance Measurement FY12: Steam Plant Efficiency



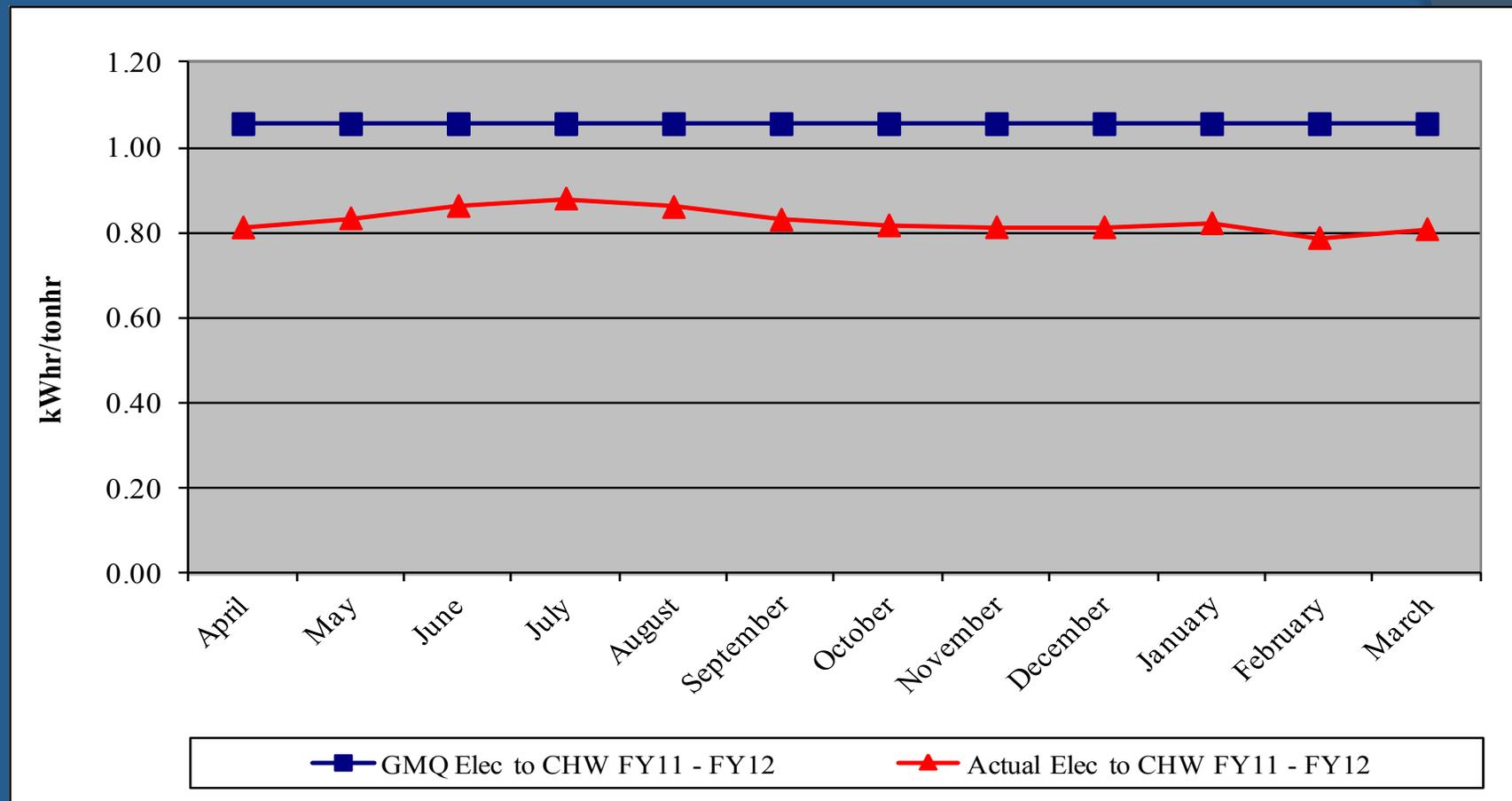


## Performance Measurement FY12: Steam Water Conversion ●



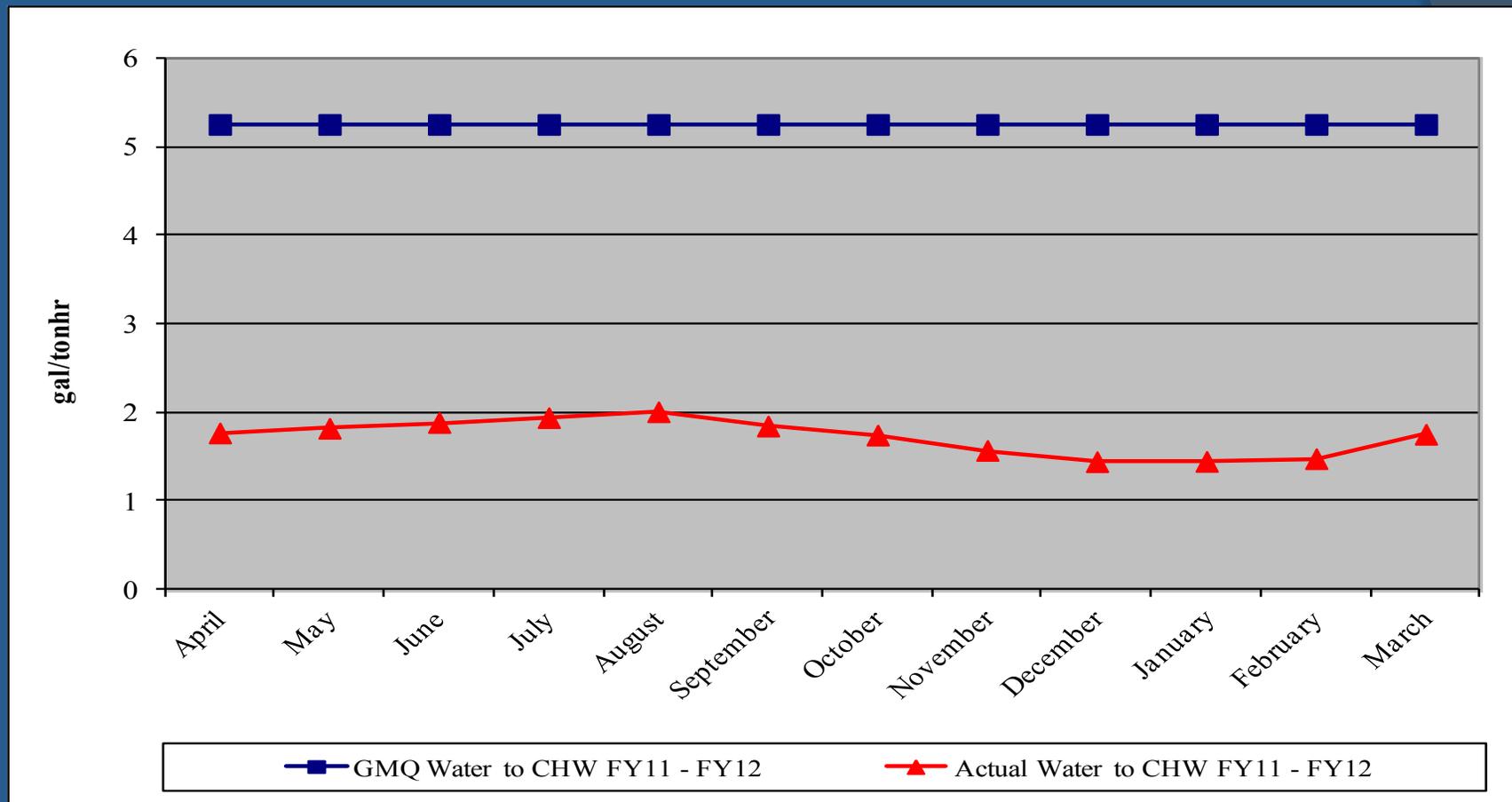


## Performance Measurement FY12: CHW Electric Conversion ●



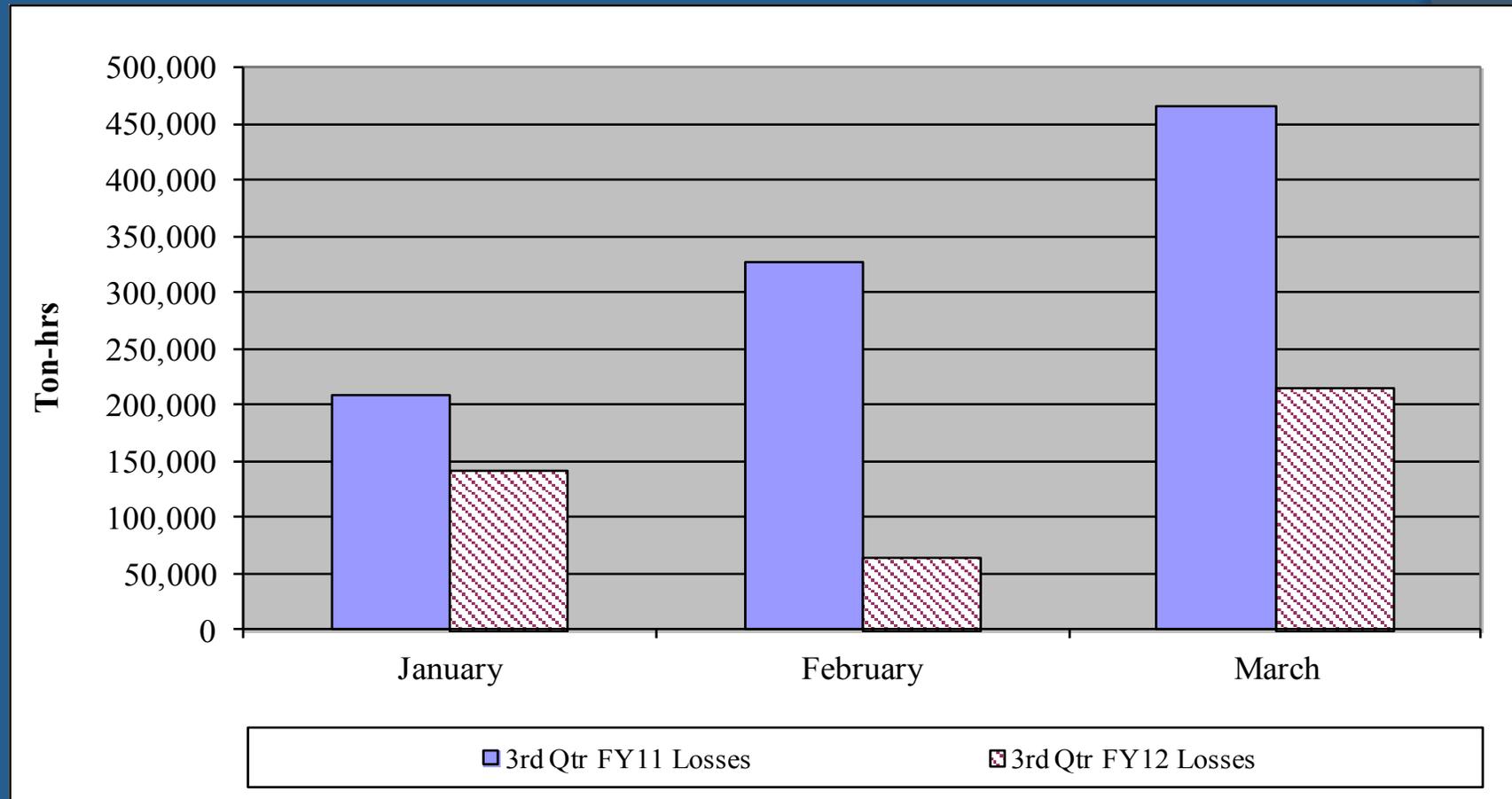


## Performance Measurement FY12: CHW Water Conversion ●



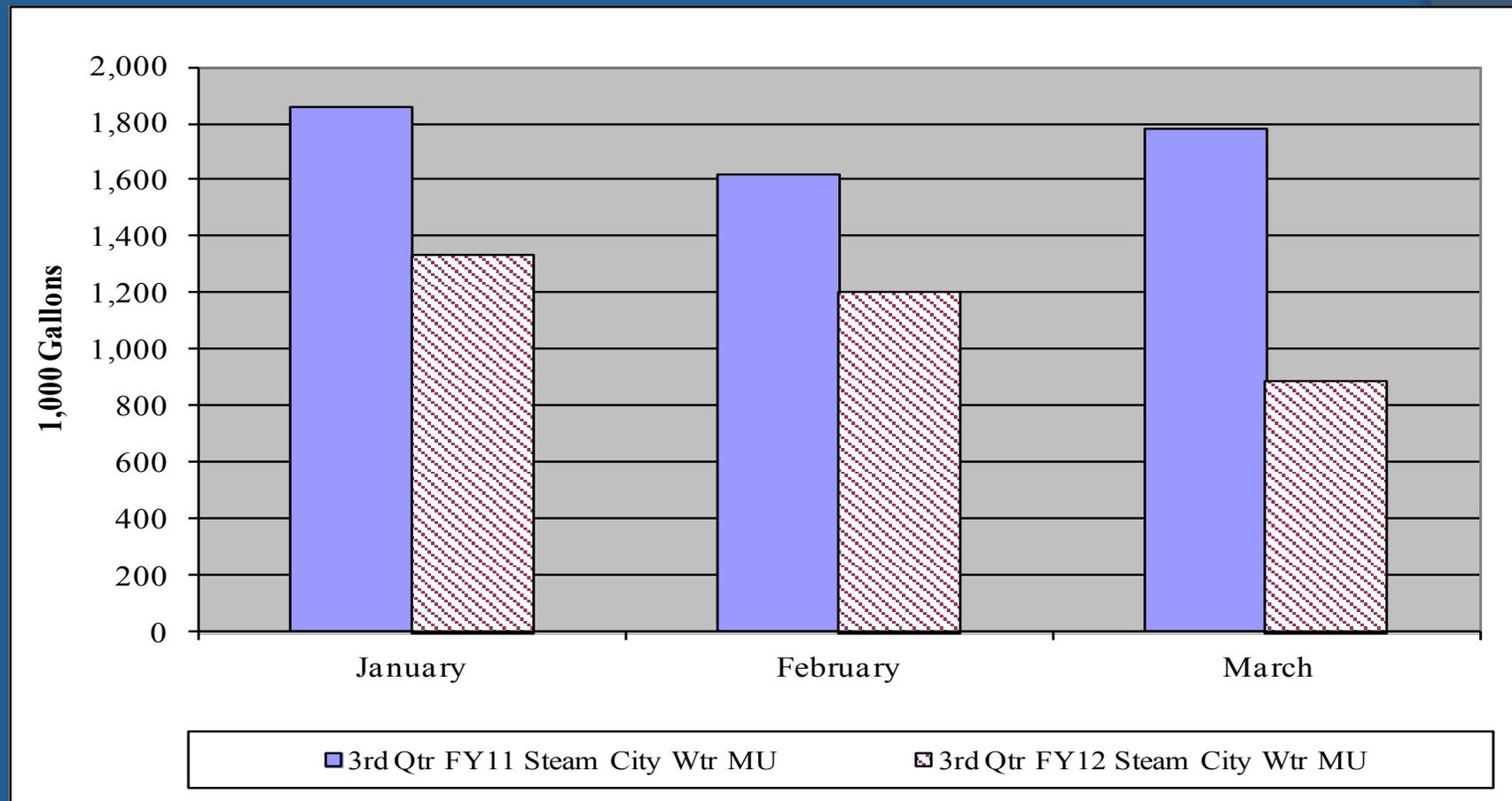


## Third Quarter CHW Losses





## Steam System Water Usage





# *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: FY12 Gas Spending & Budget Comparison**
  - ❖ **Figure 5: Actual and Projected Gas Cost Comparison for FY12**



**Table 5: FY12 Gas Spending & Budget Comparison**

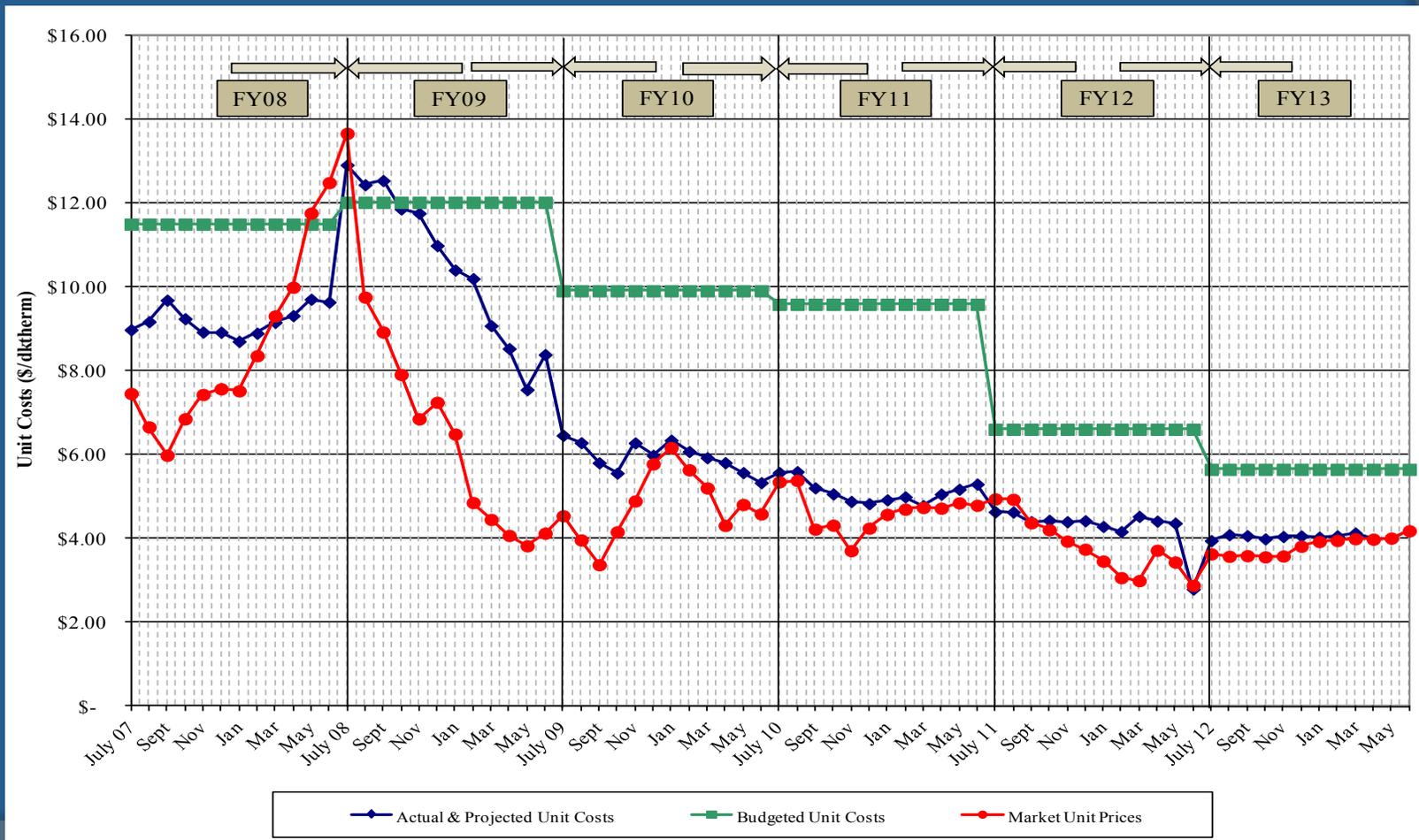
	Actual FY12 To date (Mar 31)	Budget FY12	Percent Difference
Steam Sendout (Mlbs)	254,852	281,594	9.5%
Fuel Use (Dth) (includes propane)	● 356,102	399,300	10.8%
Plant Eff (Dth/Mlb)	● 1.397	1.418	1.5%
Total Gas Cost (includes propane)	● \$1,732,457	\$2,640,970	34.4%
Unit Cost of Fuel (\$/ Dth)	● \$4.865	\$6.614	26.4%

Excludes consultant fees and FEA

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## Figure 5. Actual and Projected Gas Cost Comparison History



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### 6. FY12 Costs to Date

Item	FY11 Actual	FY12 Budget w/MCCC	FY12 Actual	Percent of FY12 Budget
FOC's	\$ 4,129,302	\$ 4,303,100	\$ 3,185,550	74.03%
Pass Throughs				
Non-Energy	\$ 859,795	\$ 1,031,400	\$ 461,645	44.76%
Water/Sewer	\$ 396,869	\$ 597,700	\$ 320,943	53.70%
Natural Gas	\$ 2,496,141	\$ 3,939,300	\$ 1,749,524	44.41%
Electricity	\$ 4,310,054	\$ 5,192,900	\$ 3,538,752	68.15%
Debt Service	\$ 5,042,150	\$ 5,703,700	\$ 3,345,367	58.65%
<b>Total Expenses</b>	<b>\$ 17,234,310</b>	<b>\$ 20,768,100</b>	<b>\$ 12,601,780</b>	<b>60.68%</b>
<b>Total Revenues</b>	<b>\$ 15,395,261</b>	<b>\$ 18,405,100</b>	<b>\$ 12,025,567</b>	<b>65.34%</b>
<b>Metro Funding Amount</b>	<b>\$ 1,839,049</b>	<b>\$ 2,363,000</b>	<b>\$ 576,213</b>	<b>24.38%</b>



## 7. Capital Expenditure Update

	<b>Spent to End of FY11</b>	<b>FY12 Spending</b>	<b>Balance to Date (04/17/12)</b>
R&I Projects	\$1,313,613	\$185,108	\$409,420
2005B Bond	\$8,139,071	\$31,516	\$15,913
2010 Bond	\$1,461,651	\$140,897	\$807,452
MCCC Fund	\$3,856,349	\$1,044,372	\$3,599,279
<b>Total</b>	<b>\$14,770,684</b>	<b>\$1,401,893</b>	<b>\$4,832,064</b>



# Capital Projects Review

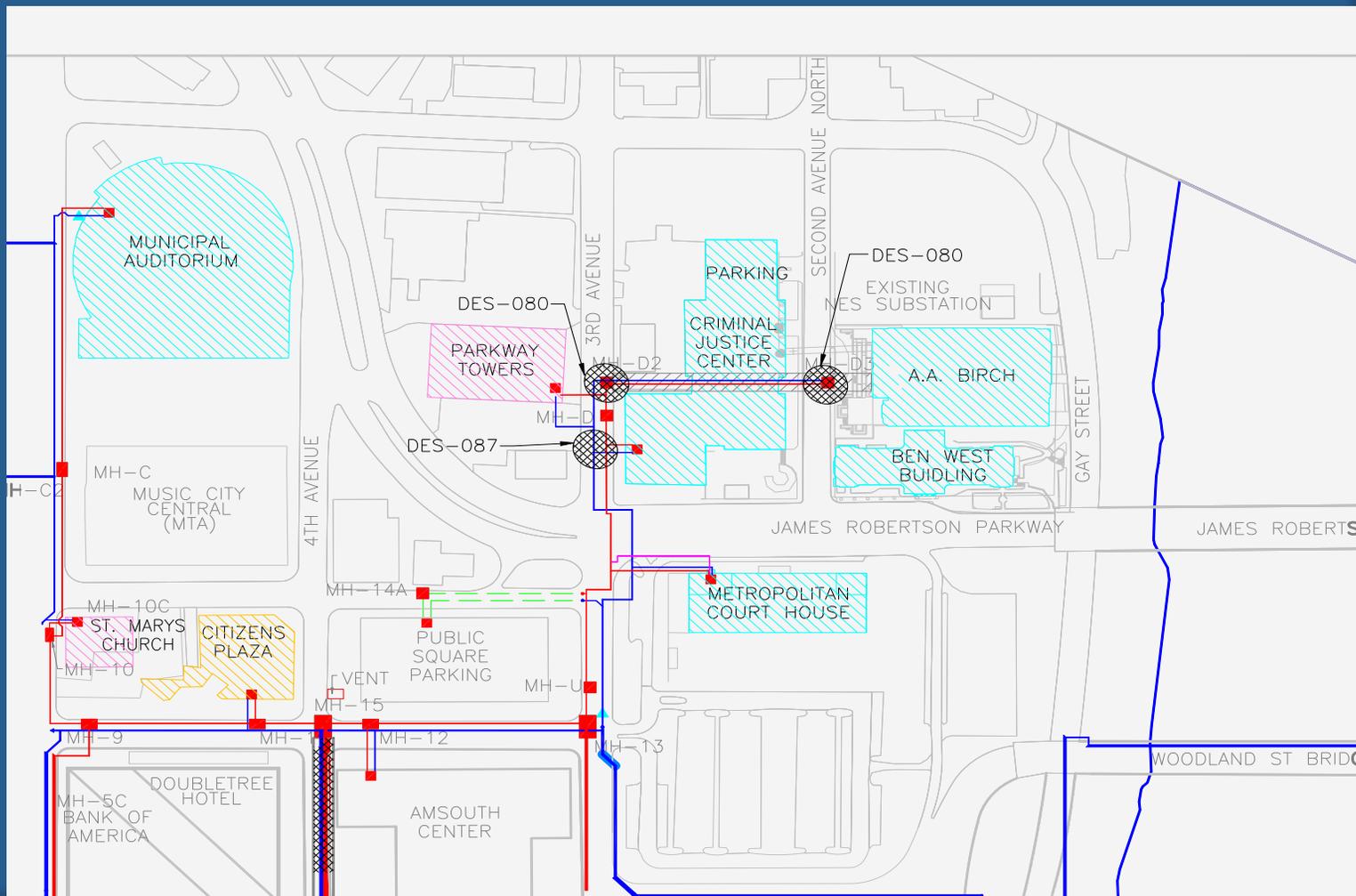
## Active Capital Projects

- DES 048: Tunnel Lighting Replacement Phase III – in construction; additional items added to scope
- DES 061: MH & Tunnel Steel Corrosion Repair & Prevention – in construction/ongoing
- DES 076: MH-S4A State Manhole Rebuild – in closeout; under budget
- DES 080: Misc. MH & Tunnel Safety Repairs – in construction; additional items added to scope
- DES 087: Exploratory Dig @ MH D/CJC (Chilled Water Leak) – in closeout
- DES 090: MH/Tunnel Insulation – tunnel insulation in closeout (ongoing)
- DES 091: Thermal Storage System – in design/evaluation phase
- DES 093: Manhole 6 Repair and Structural Rehabilitation – in closeout
- DES 094: Molloy Street Exploratory Dig – Phase I complete; Phase II to start construction during Fourth Quarter FY12
- DES 095: MH B2 Water Infiltration Remediation – in construction

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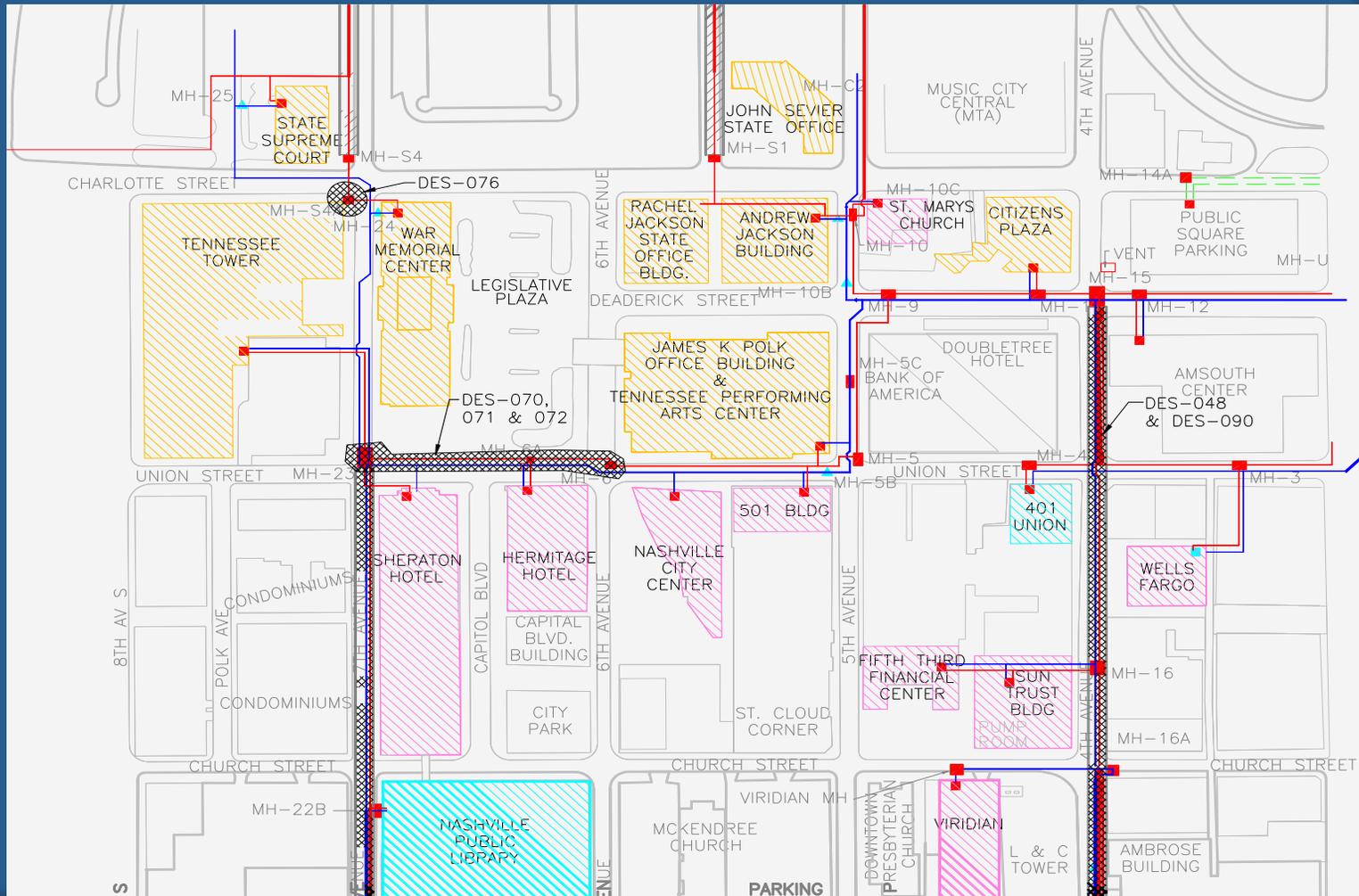
## Active Capital Projects



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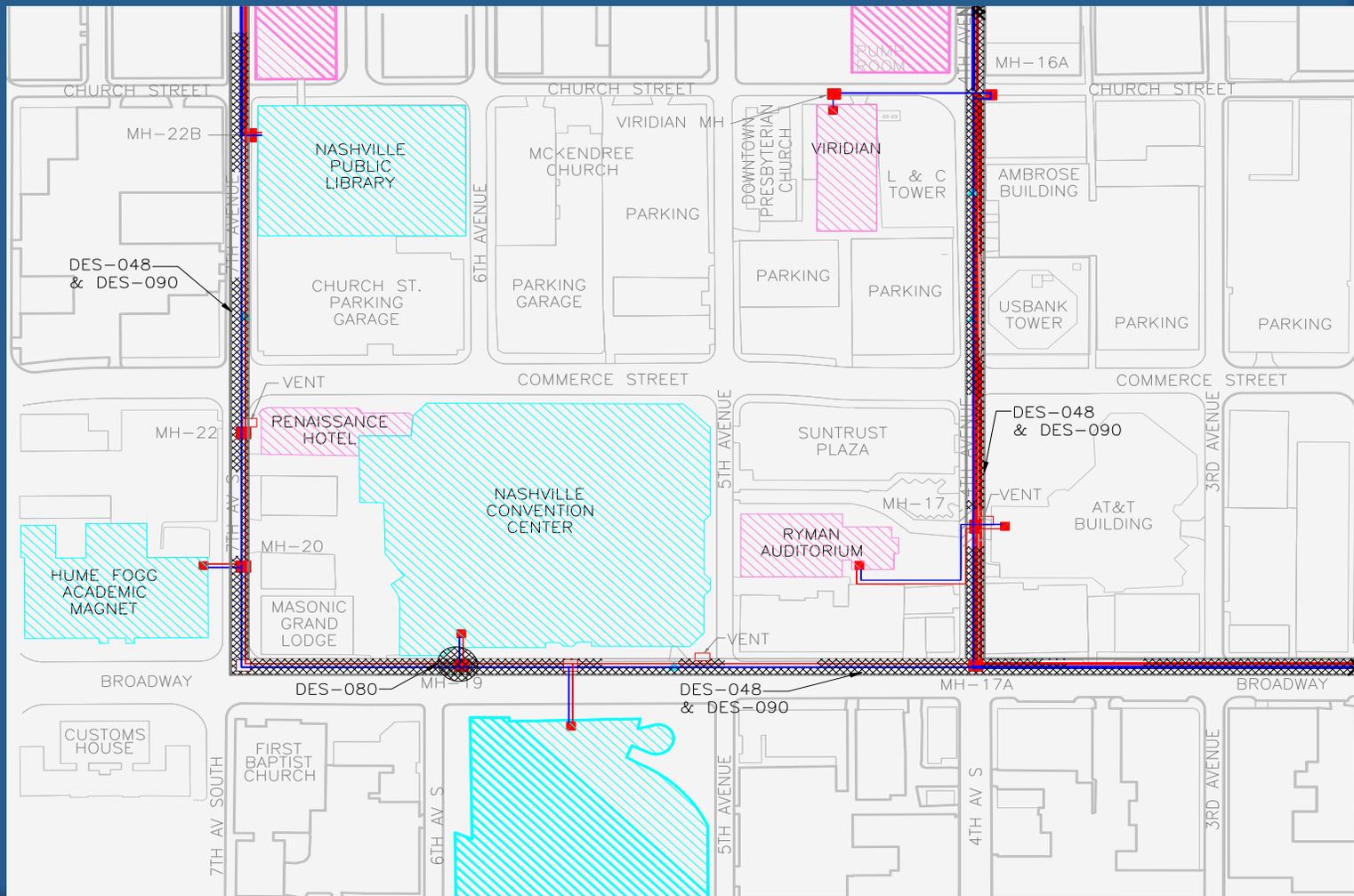
## Active Capital Projects



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## Active Capital Projects





# *Capital Projects Review*

## Capital Projects in Close-out

- DES 076: Manhole S4A Repair
- DES 077: Expansion of Service to the Music City Convention Center – complete; temporary CHW connection April 25; meter finalization; pumps
- DES 087: Exploratory Dig @ MH D/CJC (chilled water leak)
- DES 088: Andrew Jackson PRV – closed
- DES 090: Manhole & Tunnel Insulation – tunnel insulation project in closeout
- DES 092: Sheraton CHW Pumps – closed
- DES 093: Manhole 6 Repair and Structural Rehabilitation



## *11. Other Board Member Items*

## *12. Adjourn*

- *Advisory Board Meeting Schedule*
- FY12 – 4<sup>th</sup> Quarter Meeting – August 16, 2012
- FY13 – 1<sup>st</sup> Quarter Meeting – November 15, 2012
- FY13 – 2<sup>nd</sup> Quarter Meeting – February 21, 2013
- FY13 – 3<sup>rd</sup> Quarter Meeting – May 16, 2013