



# FINAL Quarterly Report Q3 2013

The Commonwealth of Massachusetts

## Accelerated Energy Program 2012-2014

[www.mass.gov/DCAMM/aep](http://www.mass.gov/DCAMM/aep)



Governor Deval Patrick



Secretary Glen Shor  
Commissioner Carole Cornelison

Secretary Richard K. Sullivan  
Commissioner Mark Sylvia

Division of Capital Asset Management and Maintenance  
**D · C · A · M · M**



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## Introduction

The Commonwealth of Massachusetts is recognized as a national leader in energy and water efficiency for its establishment of clean energy policies and its implementation of innovative, sustainable, and economical energy and water solutions.

In 2012, for the second consecutive year, the Commonwealth was ranked the top state in the nation for energy-efficiency policies and programs by the American Council for an Energy-Efficient Economy (ACEEE). This distinction recognizes many initiatives in Massachusetts, including the investment and savings in energy efficiency for residential, low income, commercial and industrial electric and natural gas customers, delivered through the Mass Save® program. The Leading By Example (LBE) program is also a key factor in this ranking. LBE was established in April 2007 by Governor Patrick's Executive Order No. 484, which set aggressive energy and greenhouse gas reduction goals and renewable energy goals for state government operations.



In December 2011, the Accelerated Energy Program (AEP) was established to accelerate the implementation of energy and water savings projects across the Commonwealth and help the Commonwealth comply with Executive Order 484. The AEP aims to reduce energy consumption by 20-25% over 700 state sites, creating about 4,000 clean energy jobs and saving the Commonwealth an estimated \$43 million annually.

The AEP will significantly reduce the current annual consumption of more than 800 million kilowatt hours of electricity, 12 million gallons of heating oil, 55 million therms of natural gas, and emissions of more than 800,000 tons of greenhouse gases, which represent more than 4,000 buildings and 58 million square feet. The program will save an estimated 135,000 metric tons of greenhouse gases annually, the equivalent of removing 26,000 vehicles from the road per year.

## Program Goals & Objectives

DCAMM and DOER are working with a number of partners, agencies and utilities to accomplish the six main objectives of the AEP:



<sup>1</sup>AEP Metrics are provided in Appendix A.

## Summary of Major Accomplishments

DCAMM and DOER continued to build upon the hard work and progress made on the AEP by achieving some significant successes in the third quarter of 2013. Some notable achievements are summarized below.

### Significant Progress with Small Sites *(see page 31 for more details)*

Including the two (2) new vendors signed in Q3 2013, DCAMM has signed contracts with a total of ten (10) utility approved vendors. Utility vendors have projects underway at 176 sites, have completed audits at 80 sites, and started construction at 12 sites.

DCAMM approved 32 audits and instructed vendors to proceed with finalizing utility applications.

### Held an AEP Press Event *(see page 32 for more details)*

On September 27, DCR's Bradley Palmer State Park in Topsfield and South Hamilton, MA and Halibut Point State Park in Rockport, MA were the focus of a press event. Senior staff from the Division of Capital Asset Management (DCAMM), Department of Energy Resources (DOER) and Department of Conservation and Reservation (DCR toured the parks to assess and review the Accelerated Energy Program's (AEP) energy projects.

### Defined Approach for Towards Zero Net Energy (TZNE) Retrofits *(see page 33 for more details)*

The AEP management team hosted a facilitated 4-hour charrette to bring together 74 people from DCAMM, DOER, client agencies and service providers to identify how to implement TZNE Retrofits as an integrated team with clarity on specific changes needed by all members.



*The AEP hosted charrette, on September 13, 2013, brought together an integrated team of 74 people from various disciplines on how to better implement Towards Zero Net Energy (TZNE) Retrofits.*

## AEP Spotlight - Partner

Each quarter, DCAMM and DOER recognize individuals and organizations for their contribution to the success of the AEP. This quarter DCAMM and DOER recognize **Tom Mazzeo**.

Tom Mazzeo is the Director of Facilities with the Berkshire County Sheriff's Office. Tom helped DCAMM lead and implement a major energy efficiency and renewable energy project at the Berkshire County Jail and House of Correction.

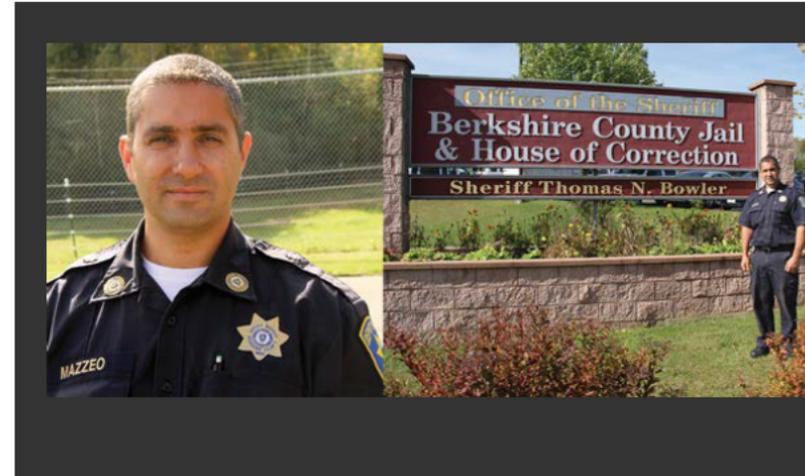
Through Tom's leadership, this project was a great example of an integrative design project across DCAMM, Berkshire House of Correction and consultants.

Tom was proactive throughout the process, and helped guide consultants through a complete energy assessment of the site. Tom provided direction and support to the project team based on his knowledge of energy efficiency technologies and systems.

Through Tom's leadership, the project team assembled a facility energy consumption profile and developed an integrative design of the three systems (condensing boilers, instantaneous hot water generation and solar thermal array) in addition to the other ECMs that will save the facility \$365,000 a year with a simple payback of less than 10 years.

The AEP Team greatly appreciates Tom's leadership in coordinating site visits, reviewing multiple documents, and providing important substantive comments and direction for the project sites.

We thank him for his dedicated efforts!



## AEP Spotlight – Innovative Technology

### Sheriff's Department

### Berkshire County Jail and House of Correction

Pittsfield, MA

#### Project Overview:

The Berkshire County Jail and House of Correction is a direct supervision facility of 160,000 square feet, built on 25 acres. Total inmate capacity is about 500. The facility features 288 cells among 8 two-tiered housing units, or pods. The pod design is an architectural design for a housing units.

The \$3.5 million energy project is spotlighted for their success using integrated planning and design to redesign three systems (condensing boilers, instantaneous hot water generation and solar thermal photovoltaic arrays) and install other ECMs that will save \$365,000 in annual energy costs with a payback of less than 10 years.

The project will save annually 365,000 gallons of water, 104,144 therms of gas, 1,413,434 kWh of electricity, and 1,170 tonnes of CO<sub>2</sub> - which equates to a 56% reduction. Some of the recommended ECMs include:

- High efficiency condensing boilers
- Domestic hot water instantaneous tanks
- Energy Management System
- Solar Thermal and Solar PV arrays
- Retrofit of lighting and installation of wall sensors

\$190,000 secured by  
DOER from the  
MassDEP Solar Grant.



*The instantaneous water heater is being installed at the Berkshire House of Correction in pair with condensing boilers. The solar thermal system pre-heats the water before the instantaneous water heater to further fuel savings.*

## AEP Spotlight – Access and Opportunity

### Higher Education

#### Northern Essex Community College

Haverhill and Lawrence, MA

#### Project Overview:

An objective of the AEP is to reach out to new vendors and contractors to solicit their participation on energy projects.

Project: Northern Essex Community College  
 Contractor: Enterprise Equipment Company  
 Constr. Cost: \$5.9 million  
 Annual savings: \$350,000

Enterprise was able to achieve a 12% participation by M/WBEs, which exceeds the goals established by the Commonwealth under EO 524 and 526. This goal was attained by utilizing the services of four (4) M/WBE sub-contractors.

Three of the subcontractors (Spindle City Insulation, Carl Louis and Company, and W.S. Anderson, Inc.) have worked with Enterprise on prior DCAMM projects. The fourth Company, Maria Fallon Electrical Services, is relatively new to both DCAMM and Enterprise. Maria Fallon acquired their SDO Certification within the past year, and NECC was their first opportunity to participate on a DCAMM project as a WBE.

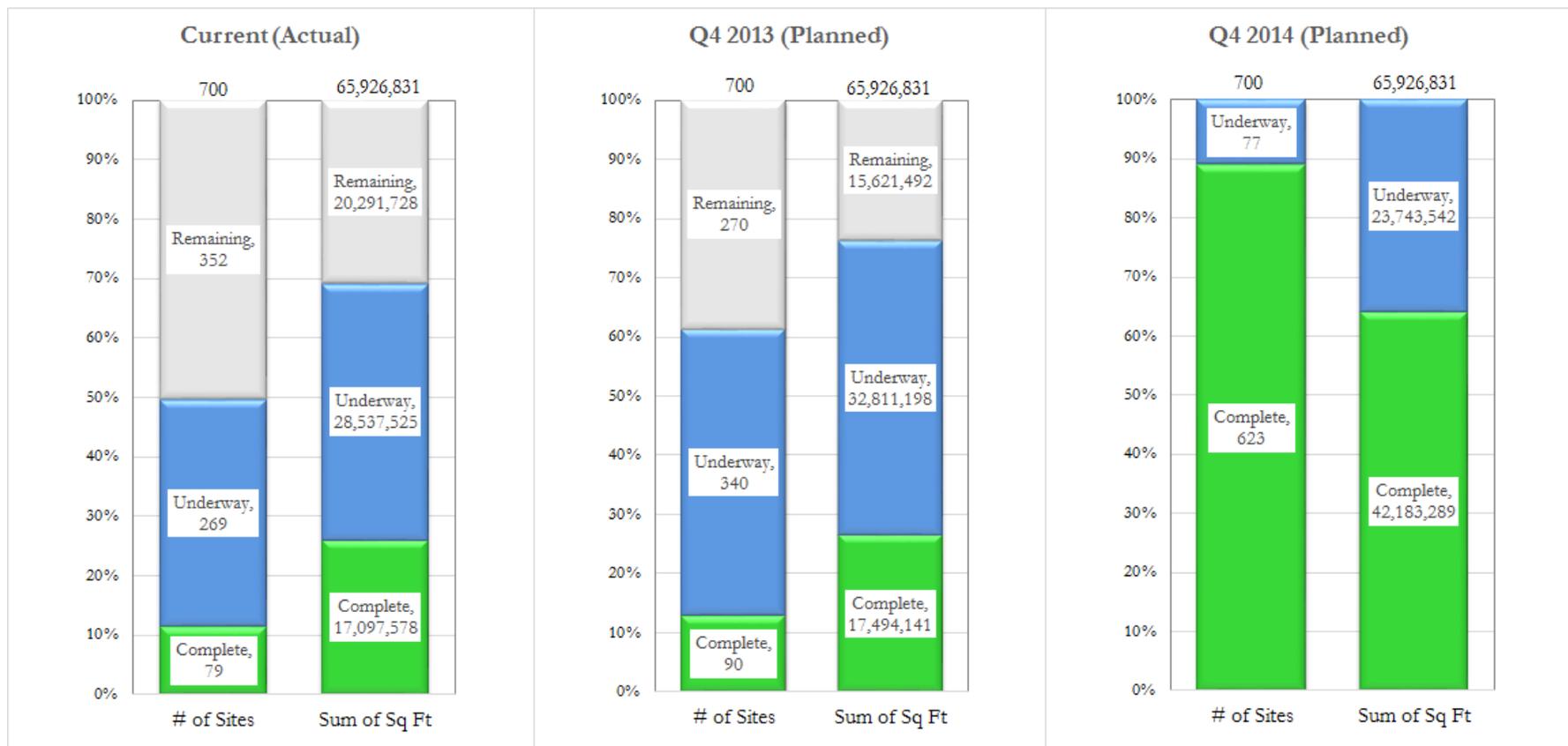


*Enterprise Equipment Company has executed a number of projects for DCAMM. The Northern Essex Community College conventional design-bid-build project was their first comprehensive energy services performance project with DCAMM.*

## Program Status – Q3 2013

DCAMM and partners plan to retrofit 700 sites encompassing more than 4,800 buildings throughout the Commonwealth. The AEP was authorized in January 2012 and implementation was kicked off in March 2012. The completion of the AEP is planned for December 2014, which provides 700 working days from the start of implementation to evaluate, audit or get into construction all sites in the program.

The chart below shows progress to date, planned progress for Q4 2013 and planned progress at the end of the AEP in Q4 2014. More details on projects underway are provided on page 22.



*Sites are categorized as “Complete” when energy projects at these sites are been substantially completed or when the site has been evaluated and determined to not benefit from an energy project under the AEP because the site does not consume energy or has recently been retrofitted (Evaluated N/A).*

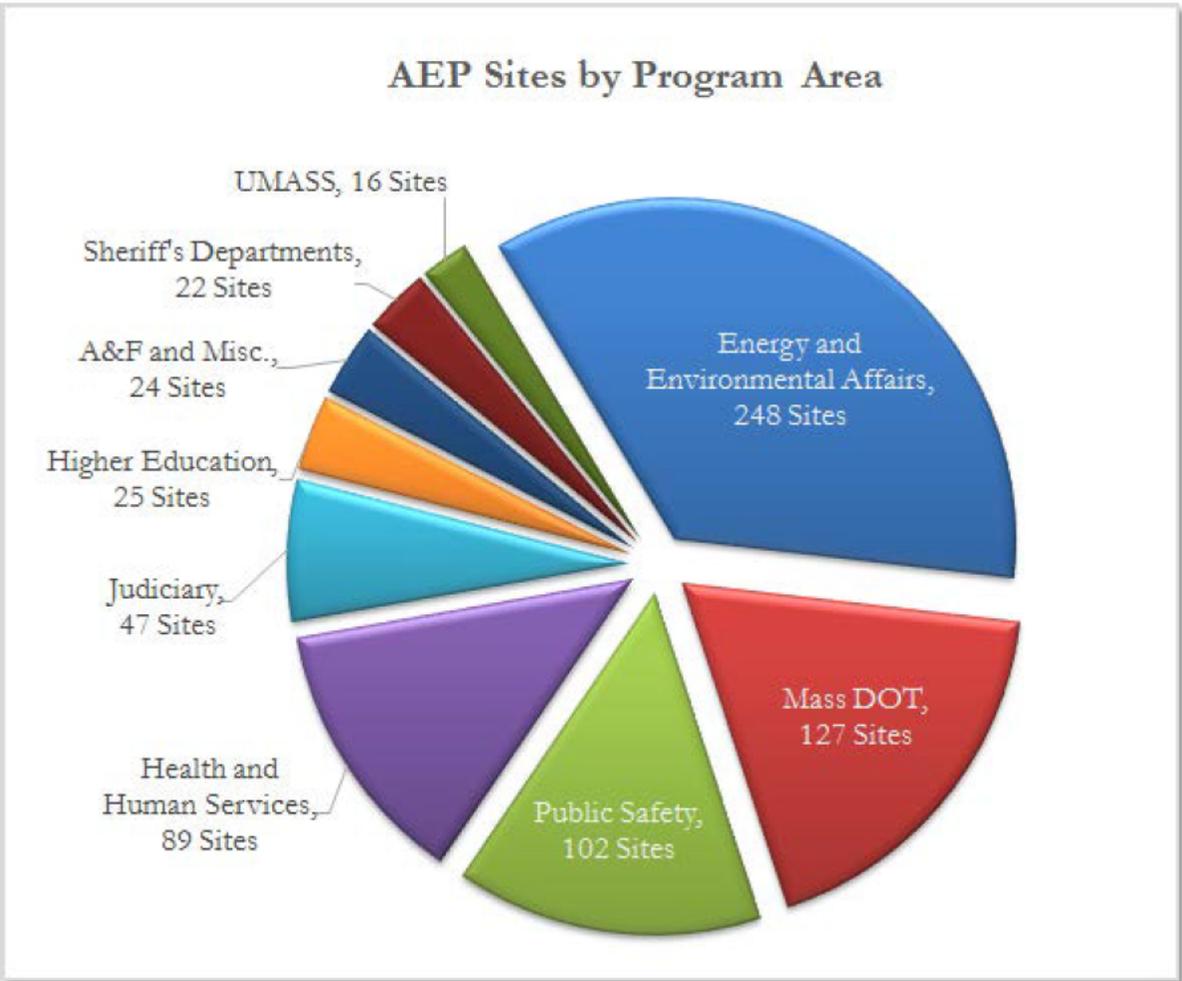
## Program Areas

There are a total of 818 sites in the Commonwealth's capital asset inventory. Of the 818 sites, 700 sites are being retrofitted in the AEP. There are 118 sites excluded from the AEP because they are currently not in use, implemented energy efficient through recent prior projects, or do not consume energy.

During Q3 2013, there were no changes in project categorization of each site by program area. However, Mass DOT has been reported separately from the A&F and Misc. Program Area.

The graphic provides an overview of the 700 sites by Program Area. A full list of AEP sites is provided in Appendix C.

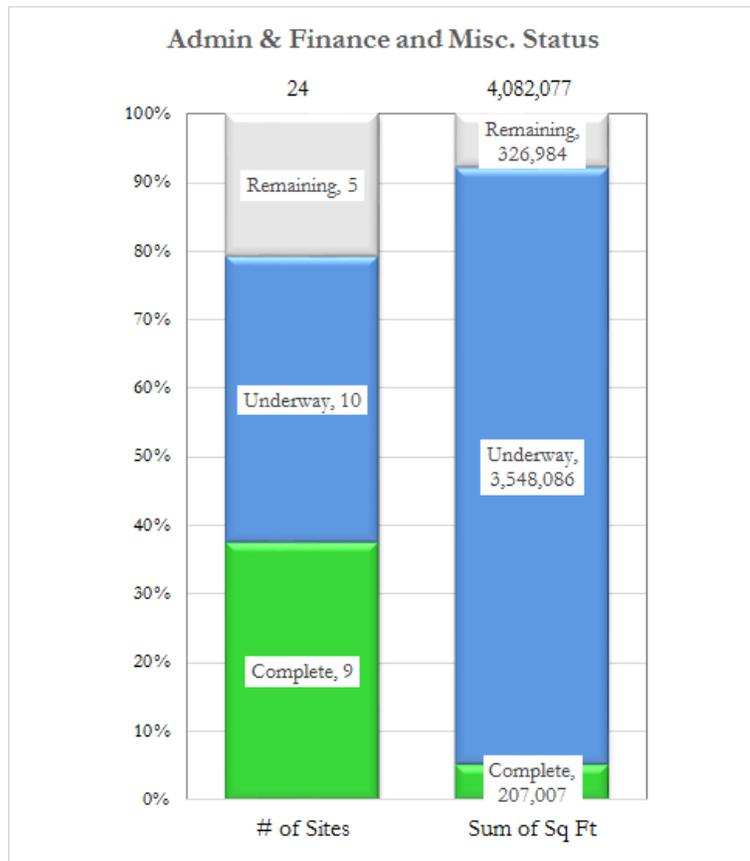
AEP Scope  
700 Sites



## Administration & Finance and Misc.

### Status

The graphic below provides a summary of sites in the AEP and the status of progress with retrofitting each site as of September 30, 2013.



### Estimated Financials

Project Costs: \$59.1 million  
 Annual Energy Savings: \$3.8 million

### Project Types

Of the 24 sites, 5 sites will be retrofitted through comprehensive projects, 4 sites through retro-commissioning, 3 sites through projects managed by OPDC, two sites through the utility vendor program, and 2 sites through TZNE pilots.

In addition, DCAMM has determined that work is not applicable at 8 sites, therefore they are characterized as Complete.

### Highlights

#### Underway Sites:

- Projects at the Veteran’s Cemeteries in Agawam and Winchendon were initiated with a utility vendor, Guardian, as part of a bundle in the utility vendor program.
- A design-build contractor was selected for comprehensive retrofits of the McCormack and Lindemann Buildings.
- A comprehensive retrofit project was initiated at the Massachusetts Information Technology Center in Chelsea.

#### Remaining Sites:

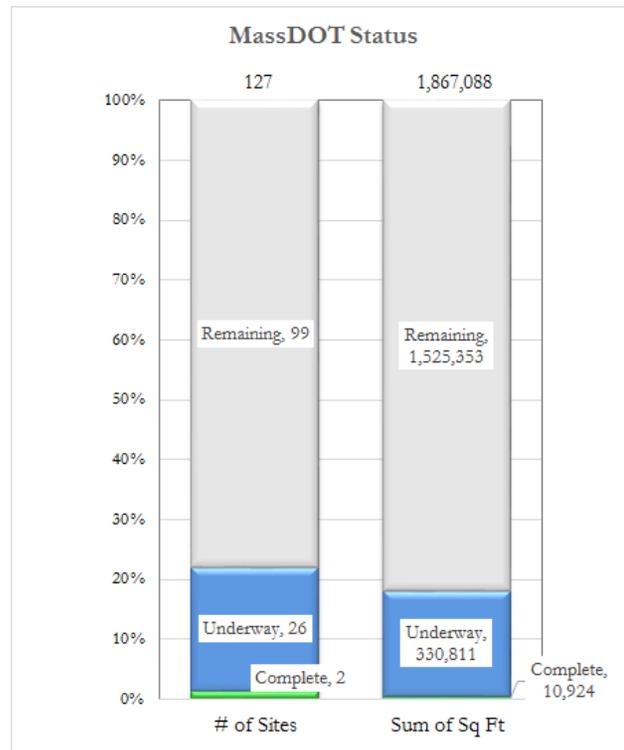
- Two sites (Lancaster Complex OSP and Job Center New Bedford) were identified for TZNE pilot sites.

Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.

## Massachusetts Department of Transportation

### Status

The graphic below provides a summary of sites in the AEP, and the status of progress with retrofitting each site as of September 30, 2013.



### Estimated Financials

Project Costs: \$4.0 million

Annual Energy Savings: \$0.5 million

### Project Types

All Mass DOT sites will be retrofitted through utility vendor contracting with the exception of the Wang Building, which will be retrofitted through a New Review process, and the Taunton Administration District 5 Site, which will be retro-commissioned.

In addition, DCAMM has determined that work is not applicable at 2 sites, therefore they are characterized as Complete.

### Highlights

Underway Sites:

- Two bundles with a total of 26 sites in Mass DOT District 4 were issued to AECOM and NES in Q1 2013 through the utility vendor contracts.

NES completed nine (9) draft audits

AECOM is expected to finalize audit work in Q4 2013

Remaining Sites:

- In Q4 2013, the AEP team plans to issue a bundle of all 19 sites in Mass DOT District 2.

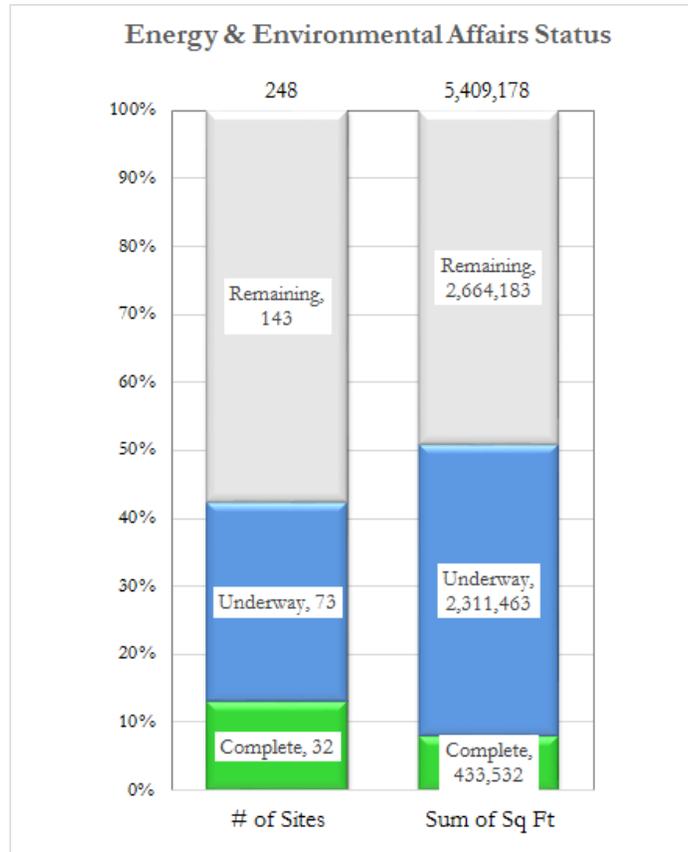
Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.



# Energy and Environmental Affairs

## Status

The graphic below provides a summary of sites in the AEP, and the status of progress with retrofitting each site as of September 30, 2013.



## Estimated Financials

Project Costs:	\$10.1 million
Annual Energy Savings:	\$1.1 million

## Project Types

Of the 248 sites, 215 sites will be retrofitted through the utility vendor program, one site will be retrofitted through a TZNE pilot and 10 sites have been completed through DOER and DCR. In addition, DCAMM has determined that work is not applicable at 22 sites, therefore they are characterized as Complete.

## Highlights

Department of Conservation and Recreation (DCR) manages 222 of the 248 sites in E&EA. Most of the remaining sites are managed by Fisheries Wildlife and Environmental Law Enforcement.

### Completed Sites:

- DOER retrofitted 5 DCR rinks as part of an ARRA project.
- DCR managed the retrofit of 5 sites based on an AEP audits.

### Underway Sites:

- A single bundle of 21 DCR sites in the Northeast was issued to SourceOne through the utility vendor program.
- DCAMM initiated a TZNE pilot at DCR’s Georges Island site.
- The other 51 sites underway were audited by DCAMM consultants in Q3 2012 and will be retrofitted through the utility vendor program.

### Remaining Sites:

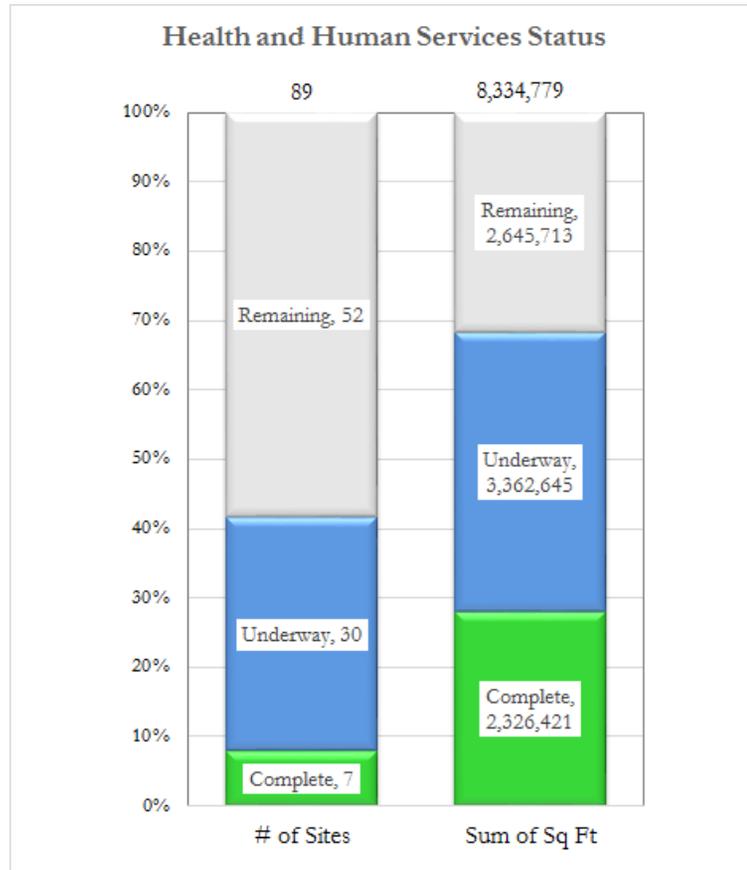
- The remaining 143 sites have been organized into 17 bundles for contracting with utility vendors in the next year.

Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.

## Health and Human Services

### Status

The graphic below provides a summary of sites in the AEP, and the status of progress with retrofitting each site as of September 30, 2013.



### Estimated Financials

Project Costs: \$48.8 million

Annual Energy Savings: \$3.0 million

### Project Types

Of the 89 sites, 15 sites will be retrofitted through comprehensive projects, 11 sites through retro-commissioning, 53 sites through the utility vendor program, 1 site through a TZNE pilot, and 2 sites through a New Review process. In addition, DCAMM has determined that work is not applicable at 7 sites, therefore they are characterized as Complete.

### Highlights

#### Underway Sites:

- 16 of 30 sites underway are being retrofitted through the utility vendor program in three (3) bundles. Horizon, Paquette and Energy Conservation are the utility approved vendors assigned to the 3 bundles.
  - Horizon has initiated 8 sites
  - Paquette completed a final audit of Gandara Mental Health Center
  - Energy Conservation has visited 4 sites
- In Q1 2013, the DCAMM consultant CLEARresults submitted a draft retro-commissioning audit for the two facilities at DYS Westborough.

#### Remaining Sites:

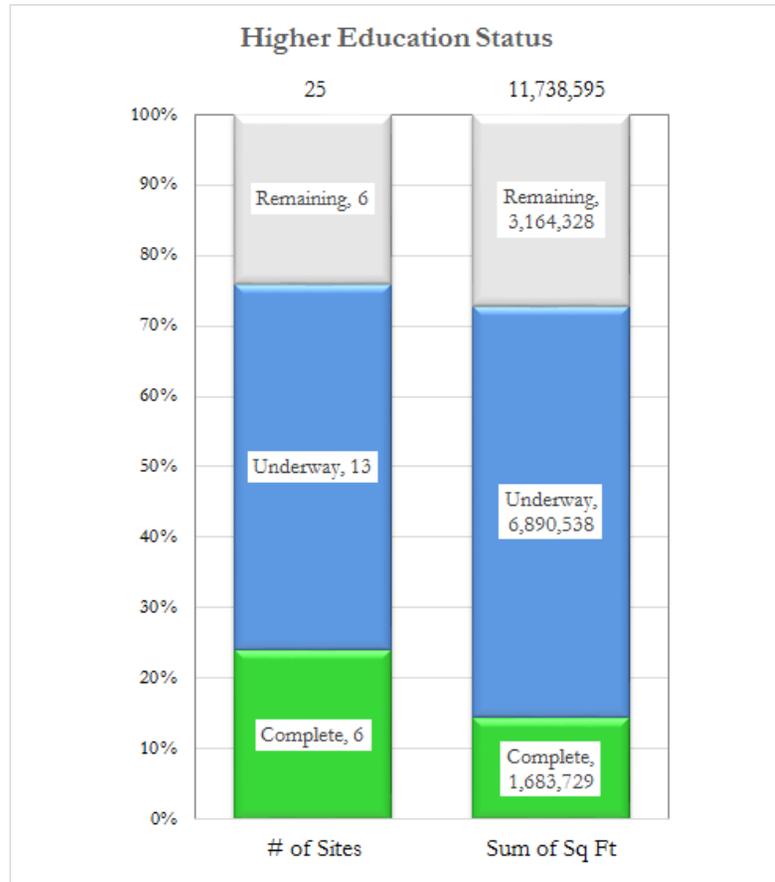
- In Q3 2013, the Soldiers' Home in Chelsea was selected for a TZNE pilot. This project is expected to be started in Q4 2013.

Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.

## Higher Education

### Status

The graphic below provides a summary of sites in the AEP, and the status of progress with retrofitting each site as of September 30, 2013.



### Estimated Financials

Project Costs: \$100.4 million

Annual Energy Savings: \$6.6 million

### Project Types

Of the 25 sites, 11 sites will be retrofitted through comprehensive projects, 1 site through the utility vendor program, 4 sites through TZNE pilots, and 5 sites will be audited through a New Review process. In addition, DCAMM has determined that work is not applicable at 4 sites, therefore they are characterized as Complete.

The 4 sites selected for TZNE pilots are Holyoke Community College, Cape Cod Community College, Fitchburg State University, and Worcester State University.

### Highlights

#### Completed Sites:

- A project at both sites of Northern Essex Community College (Haverhill and Lawrence) was substantially completed.

#### Underway Sites:

- DCAMM signed phase 1 of a comprehensive project contract for \$2 million with Constellation New Energy for Salem State University.
- DCAMM initiated comprehensive projects and TZNE pilots at 3 sites.

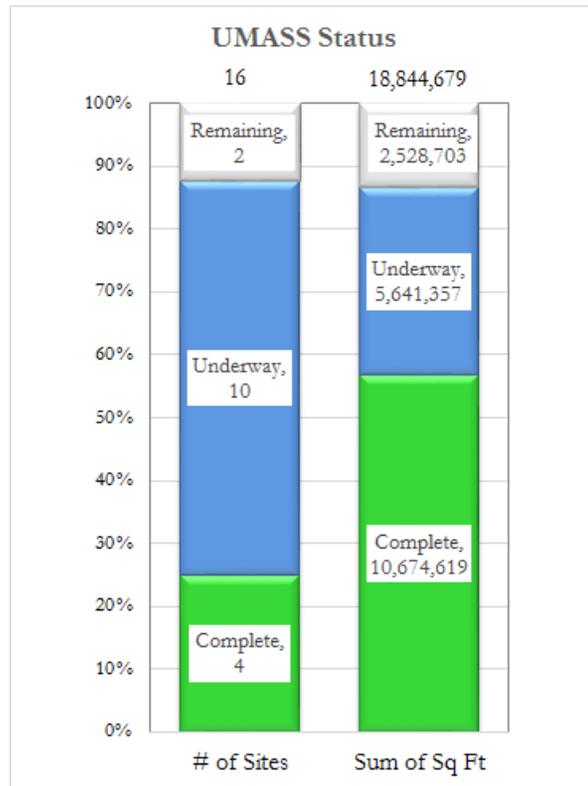
#### Remaining Sites:

- The 6 remaining sites are Cape Cod Community College, Berkshire Community College, Bridgewater Community College, Bristol Community College, Mass College of Art and Mass Bay Community College.

Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.

## UMass

The graphic below provides a summary of sites in the AEP, and the status of progress with retrofitting each site as of September 30, 2013.



### Estimated Financials

Project Costs: \$121.6 million

Annual Energy Savings: \$10.9 million

### Project Types

The 5 UMass campuses comprise 16 sites in the AEP. Four (4) sites will be retrofitted through comprehensive projects (UMass Boston, UMass Lowell, State Laboratory Institute and UMass Medical Center), 5 sites will be retrofitted through the utility vendor program, 2 sites through retro commissioning, and 2 sites will be audited through a New Review process.

In addition, DCAMM has determined that work is not applicable at 3 sites, therefore they are characterized as Complete.

### Highlights

#### Completed Sites:

- DCAMM completed a small energy retrofit at UMass (\$1.7 million costs, \$226,000 annual energy savings). Therefore, UMass Amherst has been characterized as complete but work will continue through additional projects.

#### Underway Sites:

- In Q3 2013, projects were initiated at six sites. Five of the six sites are part of the bundle of UMass sites issued to Horizon through the utility vendor program.
- A comprehensive project was initiated at UMass Medical Center in Worcester.

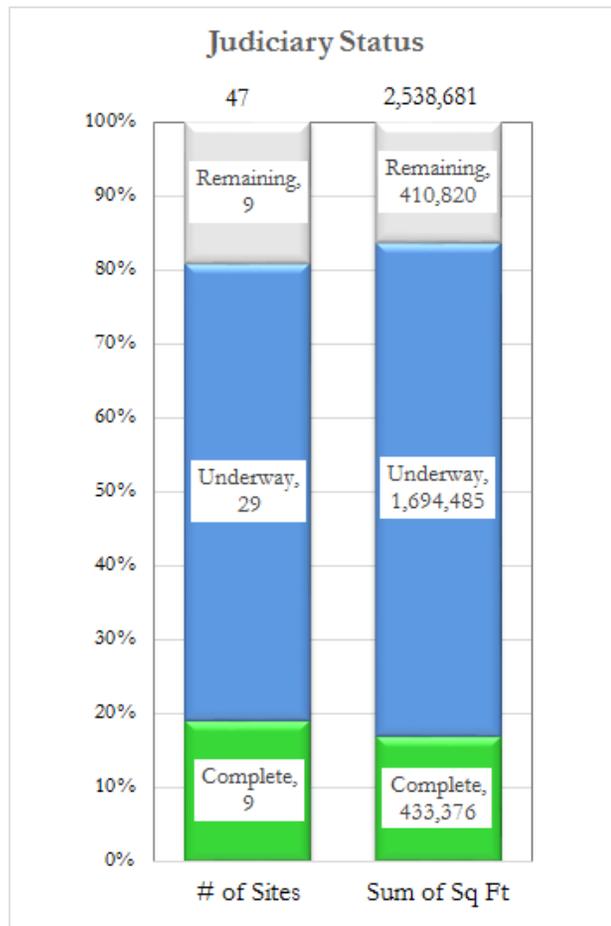
#### Remaining Sites:

- UMass Boston is the remaining campus to be initiated.

Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.

## Judiciary

The graphic below provides a summary of sites in the AEP, and the status of progress with retrofitting each site as of September 30, 2013.



## Estimated Financials

Project Costs: \$10.9 million

Annual Energy Savings: \$0.8 million

## Project Types

Of the 47 sites, 12 sites will be retrofitted through comprehensive projects, 19 sites through the utility vendor program, 4 sites through retro-commissioning, 5 sites through DOER and 5 sites through DCAMM's Office of Planning, Design and Construction (OPDC). In addition, DCAMM has determined that work is not applicable at 2 sites, therefore they are characterized as Complete.

## Highlights

### Completed Sites:

- In Q3 2013, Fitchburg District Court was the first utility vendor site to be completed.

### Underway Sites:

- Construction is in full swing at the 9 courts in western Massachusetts through BG Mechanical Contractors.
- In Q3 2013, comprehensive projects were initiated at 3 sites – Lawrence Superior Court, Lowell District Court, and Lowell Superior Probate and Family Court.
- In Q3 2013, RISE completed audits at Milford District Court and Uxbridge District Court as part of the utility vendor program.

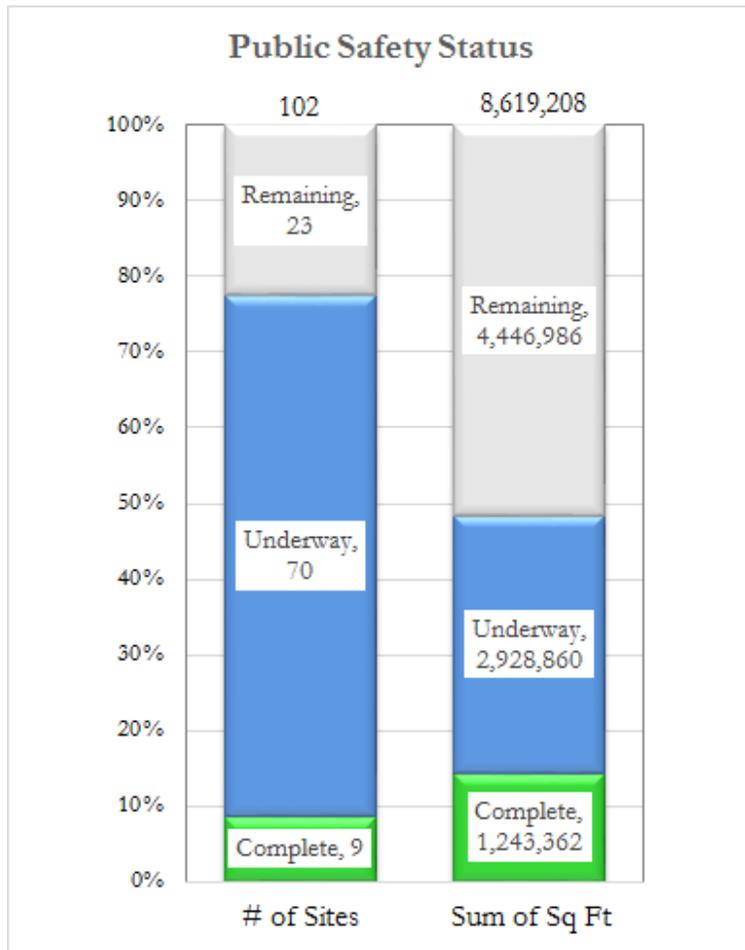
### Remaining Sites:

- A utility vendor bundle with five judiciary sites is expected to be initiated in 2014.

Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.

## Public Safety

The graphic below provides a summary of sites in the AEP, and the status of progress with retrofitting each site as of September 30, 2013.



### Estimated Financials

Project Costs: \$55.1 million  
 Annual Energy Savings: \$4.7 million

### Project Types

Of the 102 sites, 32 sites will be retrofitted through comprehensive projects, 44 sites through the utility vendor program, 7 sites through retro-commissioning, 1 site through a project managed by DOER, 1 site through a TZNE pilot and 9 sites through a New Review process.

In addition, DCAMM has determined that work is not applicable at 8 sites, therefore they are characterized as Complete.

### Highlights

The Public Safety program area includes 42 Military sites (with the majority being armories), 33 State Police sites, 20 Department of Correction sites and 7 other sites.

#### Completed Sites:

- A retrofit project was completed by DOER at the Police Station Milton.

#### Underway Sites:

- In Q3 2013, DCAMM executed a contract for retrofits at 26 state police barracks with Constellation New Energy.
- There are 35 sites underway through utility vendor contracts - four bundles of Military sites and a single bundle of Public Safety sites from Department of Correction and State Police. Audits were completed on seven armories.

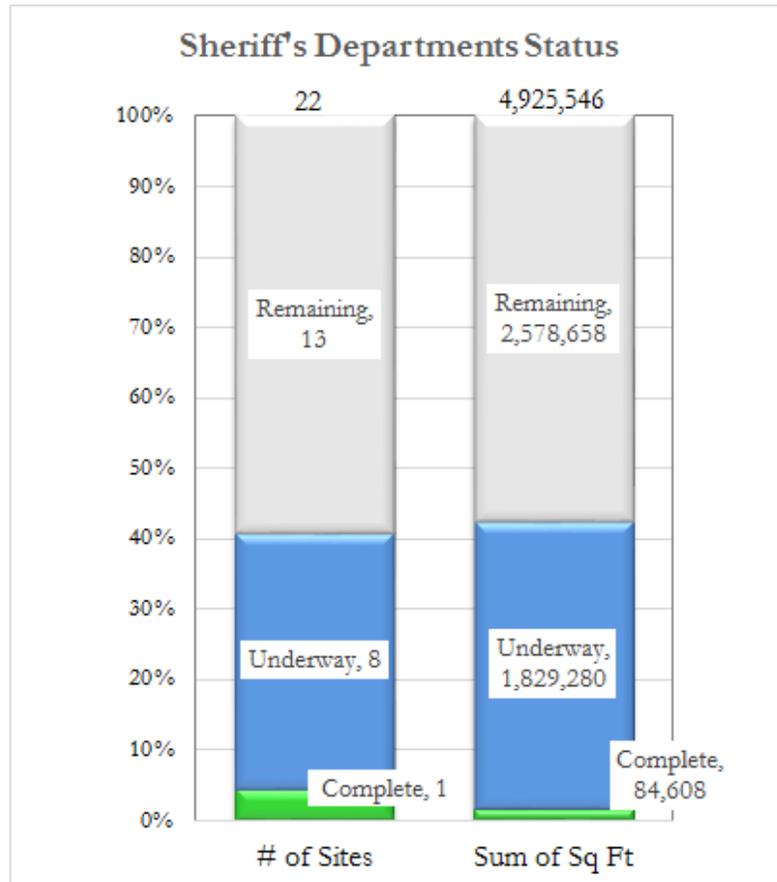
#### Remaining Sites:

- Audits through a New Review process will be conducted at 9 Department of Correction sites in 2014.

Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.

## Sheriff's Departments

The graphic below provides a summary of sites in the AEP, and the status of progress with retrofitting each site as of September 30, 2013.



## Estimated Financials

Project Costs: \$53.5 million  
 Annual Energy Savings: \$4.7 million

## Project Types

Of the 22 sites, 7 sites will be retrofitted through comprehensive projects, 7 sites through the utility vendor program, 2 sites through retro-commissioning and 1 site through a New Review process. In addition, DCAMM has determined that work is not applicable at 1 site, therefore they are characterized as Complete.

Four (4) sites will be retrofitted through a TZNE pilot. The TZNE pilot sites are the new Berkshire House of Correction in Essex (Lawrence), Essex (Middleton), and Franklin counties.

## Highlights

Underway Sites:

- In Q3 2013, projects were initiated at two Bristol Sheriff's Department sites (Dartmouth and New Bedford).
- A wind turbine study was completed at the Worcester Sheriff's Department site.
- DCAMM initiated TZNE pilots at Berkshire and both Essex sites (Lawrence and Middleton).

Remaining Sites:

- In Q4 2013, the AEP team plans to initiate comprehensive and retro-commissioning projects at five sites.
- A utility vendor bundle of seven Sheriff's Department sites will be initiated with Groom.

Appendix C provides a complete list of sites and their status, and Appendix D provides details on all projects underway.

# Detailed Program Report

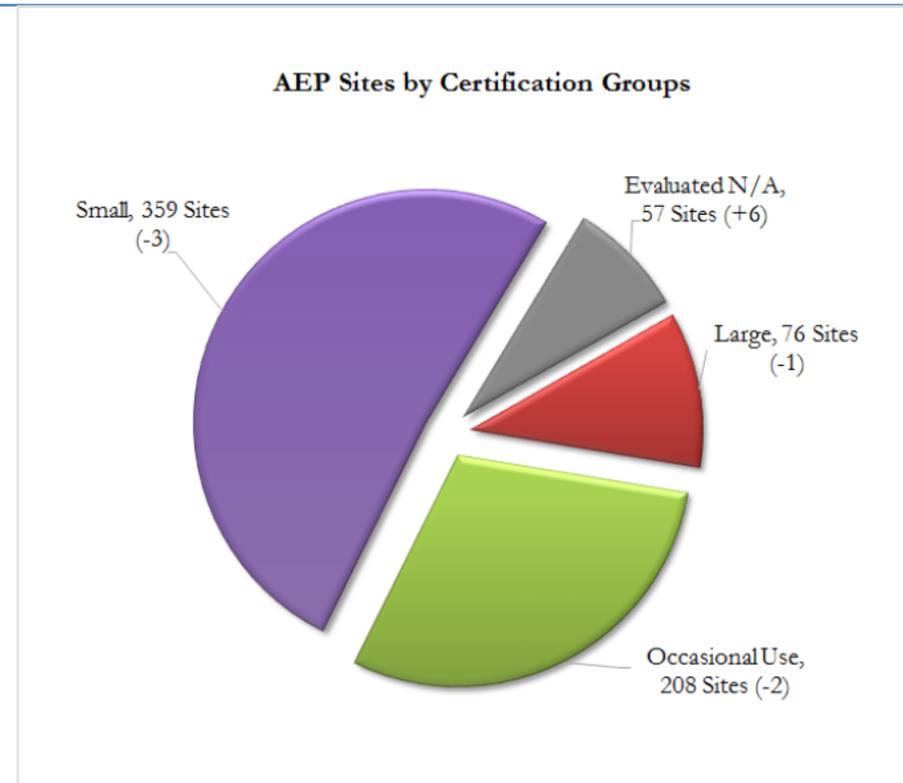
## AEP Sites by Certification Groups

DCAMM and DOER have established an AEP Certification system for recognizing sites that achieve a significant level of energy reduction. Across the entire AEP portfolio of 700 sites, DCAMM and DOER target a 25% reduction in energy consumption, greenhouse gas emissions, and energy costs.

The reduction requirements for individual sites to achieve AEP Certified designation vary based on site size and type – for instance, larger sites with comprehensive projects can typically expect deeper measures and greater savings than smaller sites that are addressed through utility vendor projects.

During Q3 2013, a total of six (6) additional sites were evaluated and categorized as N/A.

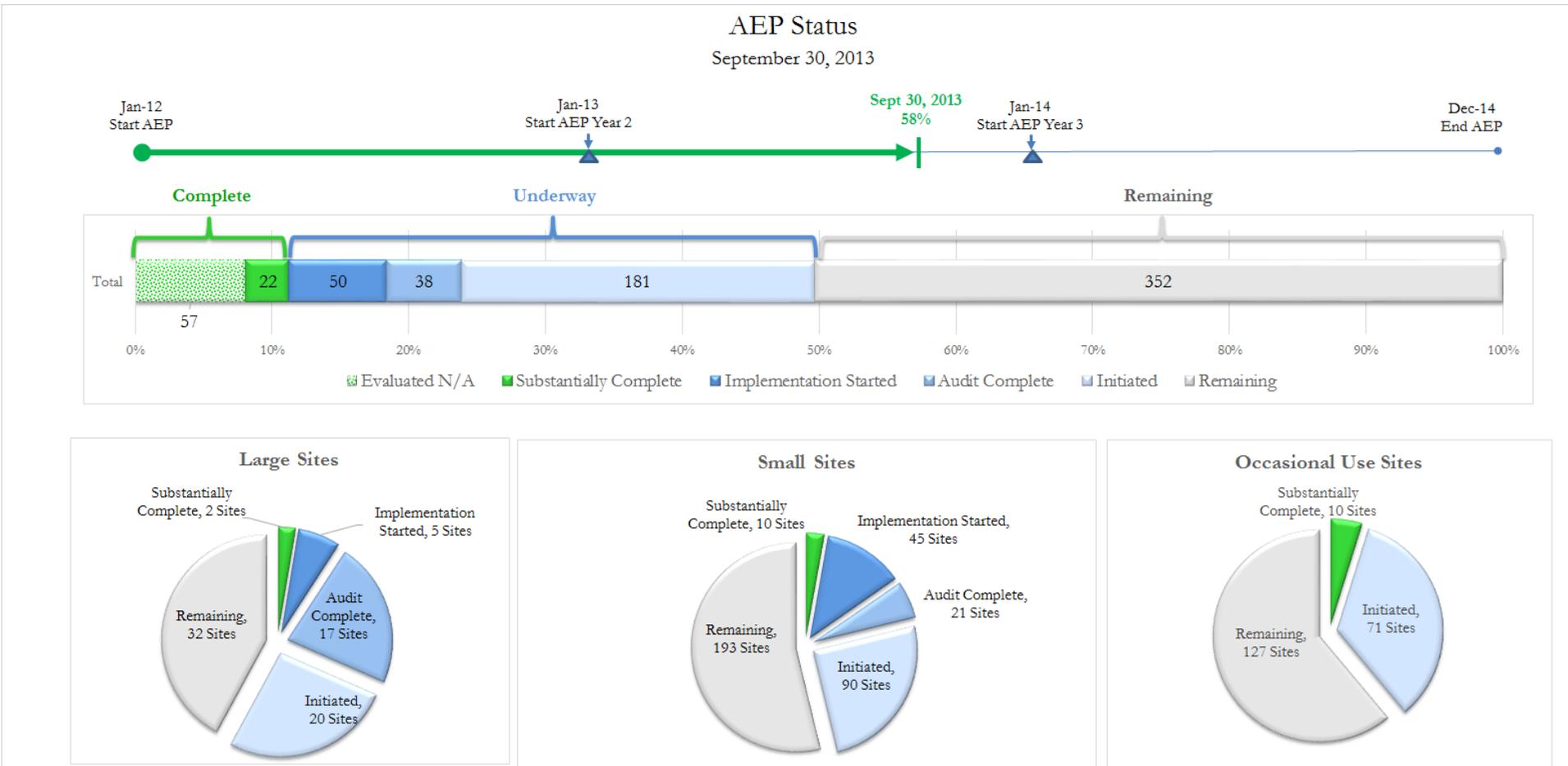
The graphic provides an overview of the 700 sites by Certification Group. Changes to Program Area totals since the last report are shown in parentheses.



AEP Scope  
700 Sites

# Detailed Program Status

As of the end of Q3 2013, DCAMM and DOER have been working on the AEP for 58% of the total duration of the three year program. A total of 351 sites have been initiated, which equates to 50% of the total AEP sites. A list of all sites and their status is provided in Appendix C. A list of all initiated sites and their current schedule is provided in Appendix D.



\*Evaluated N/A sites are not included in the lower three charts (Large, Small and Occasional Use Sites).

## Program Exposures

The AEP has a wide variety of stakeholders and contributors that work to ensure its success. Given the AEP's complexity, the identification and mitigation of risks is an important factor in successful program management.

The table below lists the AEP's remaining risks, the defined response and risk owner. Risks are categorized by the area of the program affected (i.e. planning, data management, communications). Each risk is scored as a combination of the probability of the risk being realized and the risk's potential impact on the AEP.

In Q3 2013, the AEP team identified additional risks and developed risk responses. The Risk Identifier for new risks is highlighted in green.

Risk Identifier	Risk	Impact Description	Risk Score (1=Low 6=High)	Timeline	Risk Response	Risk Owner (Working Group)
<b>Procurement Management</b>						
PrM-R1	All requested funding not in place for future projects (bond bills, utility rebates, etc.)	Not enough funds to complete program; program delay.	4	Q4 2013	Prioritize projects with funding in place; Governor introduced bond bills.	Procurement & Performance Mgmt
PrM-R2	MWBE goals are not achieved, tracked and reported.	Program goals are not achieved.	3	Near term	Coordinate with Compliance to ensure goals are defined in contracts and effectively tracked; host vendor outreach meetings.	Procurement & Performance Mgmt
PrM-R3	Agency resource are not enough to support program goals.	Delay of program	4	Near term	Outreach and hold additional meetings with agencies; Engage senior management.	Procurement & Performance Mgmt

Risk Identifier	Risk	Impact Description	Risk Score (1=Low 6=High)	Timeline	Risk Response	Risk Owner (Working Group)
<b>Project Management</b>						
PM-R3	Vendor and staff shortfall to audit, review and implement work at all sites.	Delay of program	4	Mid-term	Backfill DCAMM positions; Use consultants for surge; Develop alternative implementation methods; Streamline existing processes.	Simple Fix; PMO
PM-R5	Procurement process for large sites (Energy Design-Build and Performance Contracts) needs to be shortened to meet AEP goals.	Delay of program or incomplete projects	4	Mid-term	Develop phasing plan to level load resources; continuously improve processes using LEAN.	Procurement & Performance Mgmt
<b>"InReach" &amp; Technical Support</b>						
IN- R3	Lack of building occupant training participation (e.g., how to reduce plug load usage).	Full energy saving potential not realized.	3	Long term	Coordinate with IFM / MAFMA / CFAC to develop training and coordination.	"InReach & Technical Support
<b>Data &amp; Performance Management</b>						
DM-R1	Complex Audit Data collection is laborious and different across vendors and procurement methods.	Inaccurate collection and reporting of progress	2	Near term	Develop standardized audit templates that are integrated into data management solution	Data & Performance Management
DM-R2	Data and cost management processes not established to effectively manage program.	Program becomes unmanageable because of data inaccuracies	5	Near Term	Develop short term data management solutions (e.g., MSFT Access) in parallel to longer term solutions (e.g. Oracle BI)	Data & Performance Management

Risk Identifier	Risk	Impact Description	Risk Score (1=Low 6=High)	Timeline	Risk Response	Risk Owner (Working Group)
<b>Facility Energy Efficiency (Center of Excellence)</b>						
CoE-R1	Savings achieved through AEP projects are not sustained by facility, nor leveraged for longer term improvements	Energy savings are not sustained or further reduced to meet LBE goals.	3	Long Term	Develop longer term facility energy efficiency strategy in conjunction with MAFMA, DOER and DCAMM IFM initiative.	Inreach and Technical Support; Innovation
CoE-R2	AEP may not achieve overall average annual energy savings of 25%.	Annual Energy Savings at sites that have started implementation are lower than 25%.	5	Long Term	Develop new procurement approach for select facilities with an opportunity to achieve TZNE	Inreach and Technical Support; Innovation

## Quality Management

The AEP Quality Management Plan was established to ensure AEP projects are executed in a consistent manner with regard to quality and cost effectiveness across DCAMM facility advisors and contractors.

In Q3 2013, the AEP Quality Manager completed a comprehensive set of initiatives, as follows:

### Quality Control (QC) of All Projects

The Quality Team will review 10% of each of the five project types (towards zero net energy, comprehensive, retro-commissioning (RCx), utility vendor, and new review) at major milestone throughout the process. A site evaluation and construction inspection will be completed on an additional 5% of each of the project types.

QC reviews are completed at three major milestones during the project lifecycle, as follows:

- 1) Technical QC of draft audit report
- 2) Site Visit after Final Audit to evaluate audit accuracy and comprehensiveness
- 3) Construction inspection at conclusion of project

The following table provides a summary of the 32 sites selected and the QC reviews completed.

QC Tracking Table	Total Sites	QC Goal (5%)	Tech Review Complete	Site Visits Complete	Construction Inspection Complete
Utility Vendor	473	23	7	2	0
RCx	31	2	1	1	0
Comprehensive	100	5	0	0	0
New Review	20	1	0	0	0
<b>Total</b>	<b>700</b>	<b>31</b>	<b>7</b>	<b>2</b>	<b>0</b>

## Technical QC of Draft Audits

The technical review process allows for DCAMM project managers to do the technical review of audits while the quality management consultant verifies the technical review on a sample of all projects.

The quality management consultant provides a monthly report on identified project deficiencies as well their program-wide resolution.

The focus of these reviews is to identify any problems that may be encountered by on a single project, and to fix the problems at the program-level. This helps to improve the consistency in quality across all projects in the program.

The graphic to the right is an extract from the September 2013 Quality Report. It provides a summary of technical reviews performed, the problems identified on projects, and the resolution of each problem.

Technical review of all Utility Vendor (UV) audits has been implemented. There have been notices sent out for 122 UV audits, 59 have been completed, and 24 have been technically reviewed.

1. Screening rational of the ECMs between the preliminary audit and the "Approved Measures" is not consistent. Sometimes this is the result of the facility needs and preference of ECMs.

**Resolution:** *Provided verbal and written guidance to PMs to try to keep consistency across review of all sites and vendors. Make notes where there are differences.*

2. The acquisition from facilities of complete and accurate utility data is inconsistent.

**Resolution:** *More direction to the Facility may be necessary to set their expectations about the effort needed by them to gather utility data for the vendors.*

3. There were 18 audit templates that were generating a common error when attempting to upload to the EPDB. The auditors were manually adding building codes to the measure input tab because the formula was not working.

**Resolution:** *The majority of the errors were due to the auditor inputting buildings that were not in the database. These have been resolved. The other error is caused by duplicate measure entries in the database. This has been sent to TRC to investigate.*

4. AECOM required clarification of the AEP audit template instructions for DPW90.

**Resolution:** *The QC Team contacted the auditor and resolved the issues by directing AECOM to provide a lighting line-by-line worksheet in their audit template and only inputting one lighting measure per building in future audits.*

## Audit Template with a QC Checks

An AEP Audit template was created for all vendors to use. This has helped standardize the audit process and collection of important energy usage information as well as energy conservation measures (ECMs) based on a DCAMM listing of ECMs. Version 4 was released in July 2013 which added columns for additional fuel types, an AEP certification calculator and a hidden QC check tab.

## Review and Update Scopes of Work

All Scopes of Work issued to service providers in Requests for Proposals have been updated and standardized to ensure all DCAMM Project Managers are requesting the same services across projects. This has helped ensure a consistent approach to projects across DCAMM Project Managers and service providers. The following work has been done in support the AEP:

- A. Utility Vendor Scope of Work completed in March 2013 and issued.
- B. Retro-Commissioning Scope of Work completed in June 2013 and issued.
- C. Comprehensive Scope of Work completed in August 2013 and issued.
- D. New Review Scope of Work completed in August 2013 and issued.
- E. TZNE Scope of Work in development.

Utility Vendor QA/QC Evaluation Status

Vendor	Project Number	Site Code	Site Name	Technical Review	Site Inspection	Co
Rise	AEP1301E UT1	TRC21	Fitchburg District Court	21-Feb-13	23-Apr-13	
Nxegen	AEP1302E UT1	MIL05	Braintree Armory	10-Apr-13	18-Apr-13	
Prism	AEP1303E UT1	MIL39	Northbridge Armory	19-Jun-13		
N.E.S.	AEP1304E UT1	DPW42	Chelmsford Depot	25-Jul-13		
Horizon	AEP1305E UT1	DMH33	Wrentham Housing			
AECOM	AEP1306E UT1	DPW96	MHD Medford Facility			
Source1	AEP1307E UT1	BRAD2	Bradley Palmer State Park	19-Aug-13		
Guardian	AEP1308E UT1	FWE23	Lobster Hatchery			
ECI	AEP1309E UT1	MIL56	Taunton Armory	26-Aug-13		
Groom	AEP1310E UT1	TRC27	Haverhill District Court			
Paquette	AEP1311E UT1	DMR01	LGR Region 1 Amherst	18-Jul-13		

*An AEP Quality Report is issued monthly and includes a status of QA/QC activities across the entire program. The tables above are examples of the evaluation of utility vendors.*

## Financial Management

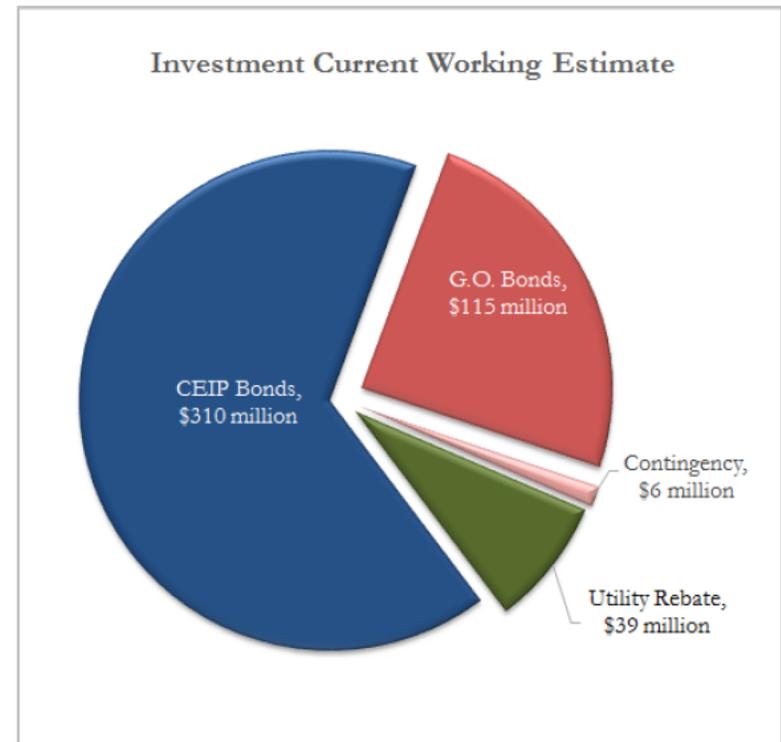
### Current Investment Plan

The AEP is budgeted at \$427 million with a 10% contingency which totals \$470 million. AEP retrofits will be funded by a combination of CEIP Bonds, G.O. Bonds, utility rebates and other funding sources. More details are provided in Appendix F.

The current working estimate and use of contingency will continue to be adjusted based on the cost effective opportunities identified at each site.

As of September 30, 2013, the current working estimate is approximately \$464 million with a contingency of \$6 million, with funding as follows:

- **CEIP bonds**  
An innovative investment approach created by the Patrick administration, debt service is repaid through energy savings. Current estimated CEIP bonds are \$310 million.
- **Utility Rebates**  
Provided by utilities based on a new and comprehensive MOU, estimates are based on energy savings calculated from a review of past DCAMM, DOER, and utility projects. Current estimated rebates are \$39 million.
- **G.O. Bonds and Other Funds**  
Traditional funding source of energy projects are estimated to fund the remaining investment. Current estimated funding is \$115 million.



## Savings

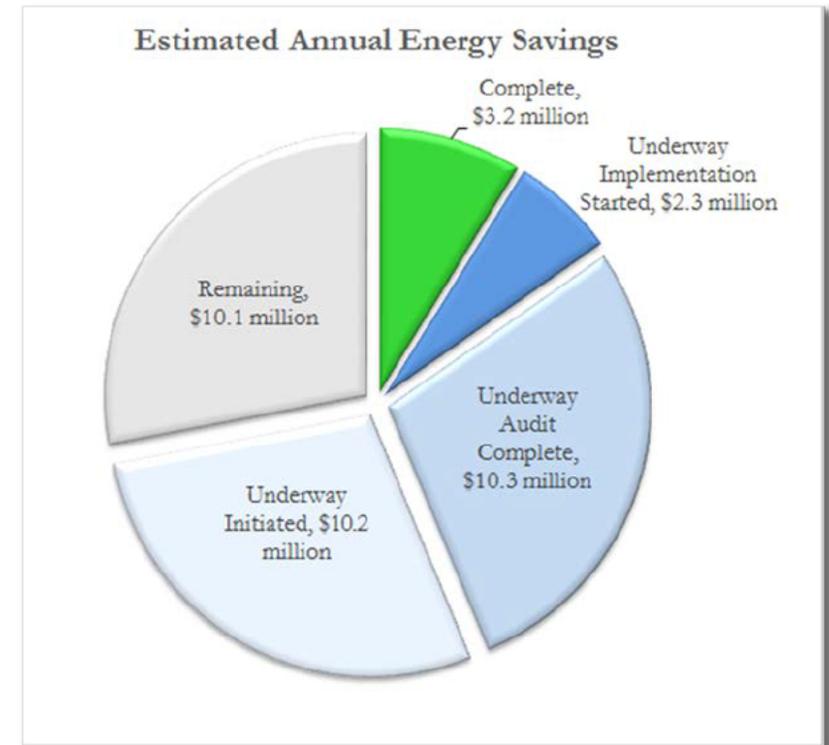
The investment in energy conservation measures is developed and approved based on the estimated annual energy savings at each site.

The AEP has a goal of \$43 million in annual savings.

As of September 30, 2013, the current estimate of annual energy savings at all AEP sites is approximately \$36.1 million, as follows:

- **Substantially Complete**  
The annual savings produced at the substantially completed sites is estimated at \$3.2 million based on signed construction contracts.
- **Implementation Started**  
The annual savings produced at the sites that have final audits and signed construction contracts is estimated at \$2.3 million.
- **Audit Complete**  
The estimated savings produced at sites with an audit completed by a facility advisors or house doctors assigned to the site is estimated at \$10.3 million.
- **Initiated**  
The estimated savings produced at sites that are initiated but do not yet have an audit completed audit completed is estimated at \$10.2 million.
- **Remaining**  
The projected savings produced at remaining sites is \$10.1 million. The budgeted investment and estimated savings is based on the procurement approach and prior sites that have been audited using the same approach.

DCAMM and DOER are investigating using innovative approaches to achieve deeper energy retrofits and higher annual energy savings at the remaining sites in the AEP.



## AEP Working Group Accomplishments

The Implementation Committee Working Groups made significant accomplishments during Q3 2013. The table below highlights the accomplishments in Q3 2013 and planned goals for Q4 2013:

<b>AEP Working Group Accomplishments and Goals</b>		
	<b>Q3 2013</b>	<b>Q4 2013</b>
<b>Innovations</b>	Developed approach to pilot innovative technologies and held TZNE Charette	Finalize and post Charrette Report; produce vendor intake form
<b>Simple Fix</b>	Initiated work at another 26 sites with 2 new vendors	Initiate work at another 70+ sites; develop close-out process
<b>Audits &amp; RCx</b>	Developed New Review scope of work	Develop TZNE framework, approach and scope of work
<b>Inreach &amp; Tech Support</b>	Agreed on new WG goals; Developed outreach kit outline	Provide facility manager outreach kit
<b>Data &amp; Performance</b>	Developed Energy Project Database enhancements; Updated EEMS – CAMIS	Issue NTP for additional updates to the Energy Project Database
<b>Communications</b>	Held Press Event at DCR sites	Host another AEP event
<b>Leasing</b>	Finalized and mailed letter to landlords	Investigate opportunities to “green” standard lease
<b>Labor &amp; Workforce</b>	Interviewed GCs/ESCOs; researched job “portal” options	Update RFPs to provide more assistance in matching; expand Interested Parties list

\*TZNE = Towards Zero Net Energy

## Simple Fix Working Group

### Utility Vendor Contracting

In Q3 2013, DCAMM held several meetings with new vendors and signed contracts with two (2) new companies:

- **Guardian Energy Management Solutions:** Issued a bundle of 13 public safety sites, of which they have completed four audits.
- **Horizon Energy Services:** Issued a bundle of 13 UMass sites.

Including the two new vendors signed in Q3 2013, DCAMM has signed contracts with a total of ten (10) utility vendors.

### Sites with Projects Underway

A total of 176 sites have projects underway. Utility vendors have completed audits at 80 sites and started construction at 12 sites.

Utility Vendors have made considerable progress as follows:

- Prism – 4 Notice To Proceed (NTP) checklists are in; 6 final audits in process.
- Nxegen – NTPs were issued for most of the bundles.
- RISE – Construction complete and invoices submitted for Fitchburg Court, Gardner Court is close to being finished, NTPs are being issued for the rest.
- AECOM – Audits are underway.
- Source One – NTPs in final development.
- NES – 8 pre-approvals were issued; 4 draft audits underway.
- Energy Conservation – 2 pre-approvals were issued; 4 audits are in final draft.
- Paquette – NTP checklist underway for 4 audits.

### Working Group Objectives:

- Plan and lead retrofit of all small facilities sites (Simple Fix Working Group)

### Utility Approved Vendor Status

10 Vendors

176 Sites Underway

80 Audits Completed

12 Sites in Construction

## Communications Working Group

### Bradley Palmer and Halibut Point State Parks Press Event

On September 27, Bradley Palmer State Park in Topsfield and South Hamilton, MA and Halibut Point State Park in Rockport, MA were the focus of a press conference. Senior staff from the Division of Capital Asset Management (DCAMM), Department of Energy Resources (DOER) and Department of Conservation and Reservation (DCR) toured the parks to assess and review the Accelerated Energy Program's (AEP) energy and water projects in both parks.

Commissioner Cornelison announced that Halibut Point and Bradley Palmer State Parks will both benefit from energy updates through the AEP Program's, a three-year initiative, supported by DCAMM and DOER. Energy efficient lighting, thermostats, pipe insulation, water fixture upgrades and weather stripping will aid in the decrease of energy consumption and costs in both parks.



*(Left) Jules Nohra and Bruce Terry (Center) of Source One discuss the audit and installation process of energy conservation measures at both parks.*

## Innovation Working Group

### TZNE Charrette

The AEP PMO hosted a facilitated 4-hour charrette to bring together an integrated team across disciplines to identify how to implement Towards Zero Net Energy (TZNE) Retrofits as an integrated team with clarity on specific changes needed by all members.

DCAMM invited representatives from service firms already supporting DCAMM on energy projects as well as government staff from facilities, construction at DCAMM, EEA, and others to contribute.

A total of 74 people participated in the TZNE Charrette. The team developed a list of success elements from prior ZNE projects, brainstormed challenges, and identified changes required to implement TZNE projects with DCAMM.

- Break-out session #1: Defined 3-5 success elements from prior ZNE projects and potential challenges of implementing these success elements on DCAMM projects.
- Break-out session #2: Identified potential strategies to address each challenge, and annotated as “Just Do It” or “Longer Term”.

### TZNE Success Elements

The following is the list of the seven TZNE Success Elements, identified in Break-out session #1:

1. Define TZNE Goals and Align with Existing Conditions
2. Incorporate Innovative Solutions
3. Establish Integrated Processes
4. Assign the Right Team (Right People and Team Size)
5. Get Buy In at ALL levels
6. Ensure right-timing of retrofits (with deferred maintenance)
7. Manage post-project operations

A final report will be finalized and posted in Q4 2013.

### Working Group Objectives:

- Develop a processes for vetting, evaluating, piloting and procuring innovative, clean energy technologies.
- Support “towards zero net energy” retrofits by leveraging innovative technologies to meet goal of achieving deeper energy savings.



*Deputy Director Jenna Ide listened to each representative report-out on their suggested changes, and provided immediate direction on all changes that could be implemented.*

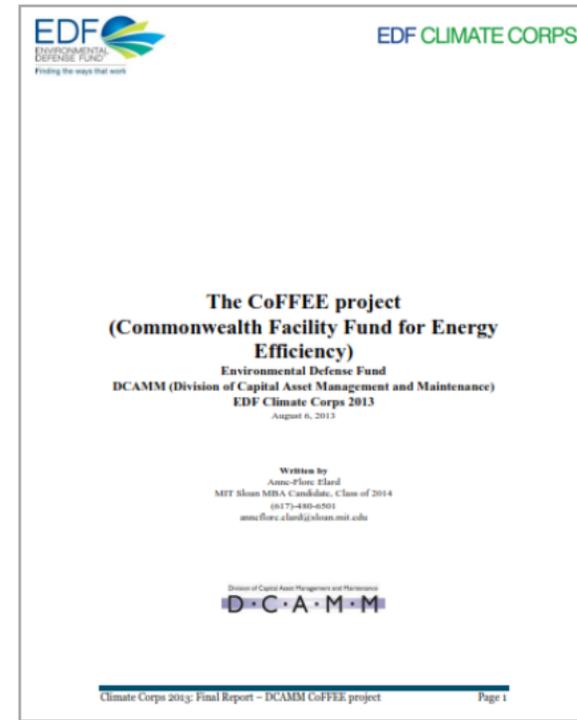
## Commonwealth Facility Fund for Energy Efficiency (CoFFEE)

As mentioned in the Q2 2013 report, DCAMM commissioned a research effort to explore the viability of establishing a Green Revolving Fund for retrofits of small to mid-size sites.

A State Revolving Loan Fund (SRF) is a source of money from which loans are made for multiple energy efficiency projects across different state agencies. The fund gets its name from the revolving aspect of loan repayment, where the central fund is replenished as individual energy efficiency projects pay back their loans through energy savings, creating the opportunity to issue other loans for new projects.

In Q3 2013, DCAMM developed the idea for CoFFEE, which is Massachusetts' first SRF for medium-sized projects. In August, DCAMM and DOER applied for a US DOE grant of \$300,000 for CoFFEE with a companion commitment of \$500,000 from DCAMM.

CoFFEE is meant to pay for medium-sized projects up front, and be replenished with a portion of the projects' savings within 3-5 years. If the grant is awarded by US DOE, it will potentially be able to fund approximately 90 AEP projects in the first year.



*DCAMM and the Environmental Defense Fund (EDF) collaborated to develop CoFFEE.*

## “Inreach” Working Group

### Rolling Out New Goals

Recently, the Inreach Support Group revisited their working group goals inspired by the common themes shared at the September 13, 2013 Towards Zero Net Energy charrette, which included facility managers, government staff, utility representatives, as well as input from members of the Leadership Steering Committee. The outcome is a re-energized Working Group with goals to effectively support and inspire state facilities to work aggressively toward significantly reducing energy usage and costs in accordance with the Accelerated Energy Program (AEP).

The new goals include initiatives that support facilities before, during and after AEP project completion. In discussions are a stream-lining of communication and response from the Inreach Support Group to ensure an efficient working process for both DCAMM and facility managers.

The Working Group created the AEP outreach kit, which is a set of promotional materials provided to assist facility managers in promoting and communicating before and during their AEP project.

The Working Group is also in discussion to provide post AEP project support which may include; training for water conservation, energy audit services, energy management planning services and renewable energy services to name a few.

### Working Group Objectives:

- Develop specifications, guidelines, and training through a new Resource Center
- Manage content on AEP internal website
- Deliver outreach and support

### Accelerated Energy Program Newsletter August / September 2013



#### PROGRAM UPDATES:

- **AEP Progress (September 30, 2013):**  
Underway: 275 sites  
Substantially Complete: 19 sites  
(Evaluated-N/A: 57 sites)  
Remaining: 349 sites
- **\$25.7 million contract** awarded to NORESO for energy and water efficiency upgrades at McCormack and Lindemann buildings.
- **Berkshire House of Correction** \$3.5 million Energy Design-Build contract awarded to Millenium Builders.

### STATE OFFICIALS RECOGNIZE ENERGY WORK

*Various events highlight the Commonwealth's ongoing conservation efforts*

Wall Experiment Station achieved first state-owned LEED-Platinum certification



Representatives at the event included DOER Leading By Example Program Director Erik Friedman (third from left) and DCAMM Director of Energy Hope Davis (third from right)

Visit to DCR facilities highlights AEP energy retrofits at recreational sites

Officials from DCAMM, DOER, and the Department of Conservation and Recreation (DCR) toured Bradley Palmer State Park in Topsfield and Halbut Point State Park in Rockport on September 27th. The visit highlighted the collaboration of state agencies to achieve energy savings at a variety of facilities in support of the AEP. DCR Commissioner Jack Murray noted, "As the steward of more than 450,000 acres of land across the Commonwealth, our facilities have a variety of energy needs."

*AEP's monthly newsletter. The Inreach Group is working to improve communication and support to state buildings, universities and parks.*

## Labor & Workforce Development Working Group

### Interviews with General Contractors and ESCOs

The AEP Working Group surveyed executives from a subset of DCAMM's energy project general contractors and ESCOs to identify possible difficulties faced by contractors in recruiting and retaining needed workers, meeting goals for involvement of Minority and Women Owned Business Enterprises (M/WBE), and achieving goals for the direct employment of women and minorities.

The contractors expressed a high rate of confidence with the availability of qualified workers in all selected professions and trades regularly employed on AEP projects. This confirmed assumptions about workforce availability from previous research and from contractor discussions conducted at AEP vendor fairs.

Several contractors noted the possibility of workforce shortages over the long term as older workers move to retirement and fewer younger workers enter energy-related professions and trades.

There were mixed concerns with meeting goals for M/WBE and the employment of women and minorities. Some contractors were confident with their current approaches based on past successes. Others were less confident, noting significant structural barriers, a possible shortage of available, qualified, interested and available M/WBEs and diverse workers, and other pitfalls to achieving goals.

Numerous suggestions and recommendations for collaborative work among contractors, education and training organizations, labor unions, and Massachusetts state government were offered.

### Working Group Objectives:

- Develop programs to assist contracts with the achievement of labor and workforce development goals.
- Assist with the development of skills for a younger population of workers aged 18-24.
- Partner with labor unions to develop pre-apprenticeship training programs based on existing models.

### Interviews with contractors were designed to learn:

1. If a shortage of qualified workers in selected professions and trades would affect AEP quality or timeliness;
2. If contractors expected difficulties in meeting M/WBE utilization goals;
3. If contractors expected difficulties in meeting employment goals for minority participation;
4. If contractors expected difficulties in meeting employment goals for participation by women;
5. Suggestions for overcoming difficulties and meeting goals.

## Data & Performance Management Working Group

### Major revisions to the Energy Project Database

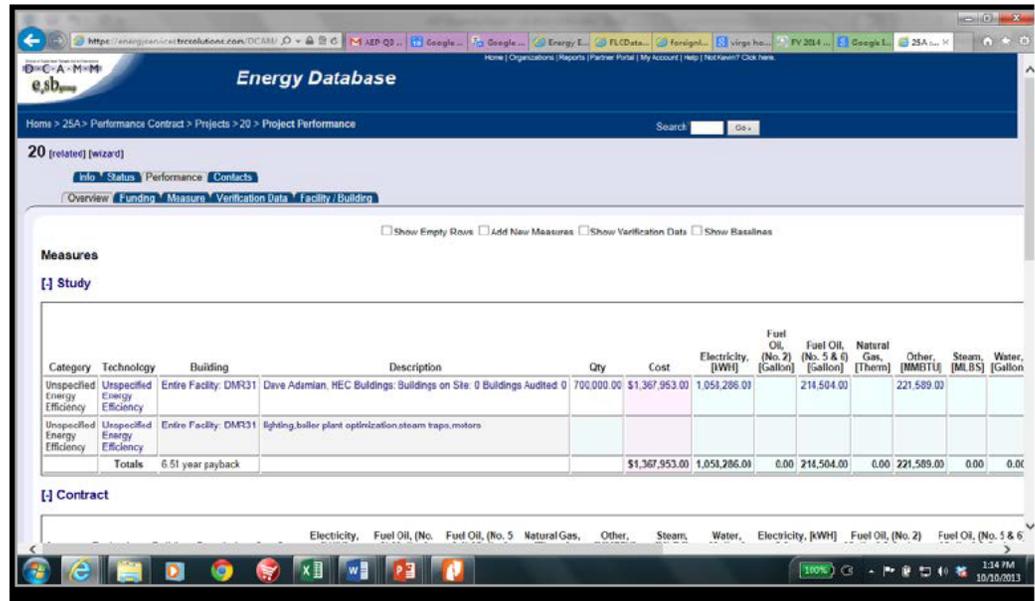
The Energy Project Database is a web software application used by DCAMM to document and store information on projects throughout their lifecycle. Detailed energy audits performed by vendors are uploaded into the Energy Project Database for standardized data collection and reporting.

As mentioned in the Q2 2013 report, DCAMM's software vendor, TRC, has been developing revisions to the Energy Project Database to better support the needs of the AEP. In Q3 2013, TRC a version that:

- Improved user interface for data entry.
- Improved user interface for ease of navigation.
- Solved uploading errors for the audit upload template.
- Created new project types for more accurate representation of projects.
- Created training video to help ESCOs use the M&V section.

### Working Group Objectives:

- Plan and prioritize projects
- Manage data for all WGs
- Establish QA/QC & project controls
- Conduct performance management, tracking and reporting



The screenshot shows the 'Energy Database' web application. The main content area displays a table of energy measures under the 'Study' section. The table has columns for Category, Technology, Building, Description, Qty, Cost, Electricity [kWh], Fuel Oil (No. 2) [Gallon], Fuel Oil (No. 5 & 6) [Gallon], Natural Gas [Therm], Other [MMBTU], Steam [MLBS], and Water [Gallon].

Category	Technology	Building	Description	Qty	Cost	Electricity [kWh]	Fuel Oil (No. 2) [Gallon]	Fuel Oil (No. 5 & 6) [Gallon]	Natural Gas [Therm]	Other [MMBTU]	Steam [MLBS]	Water [Gallon]
Unspecified Energy Efficiency	Unspecified Energy Efficiency	Entire Facility: DM31	Dave Adman, HEC Buildings: Buildings on Site: 0 Buildings Audited: 0	700,000.00	\$1,367,953.00	1,051,286.01	214,504.00			221,589.00		
Unspecified Energy Efficiency	Unspecified Energy Efficiency	Entire Facility: DM31	lighting, boiler plant optimization steam traps, motors									
<b>Totals</b>					\$1,367,953.00	1,051,286.01	0.00	214,504.00	0.00	221,589.00	0.00	0.00

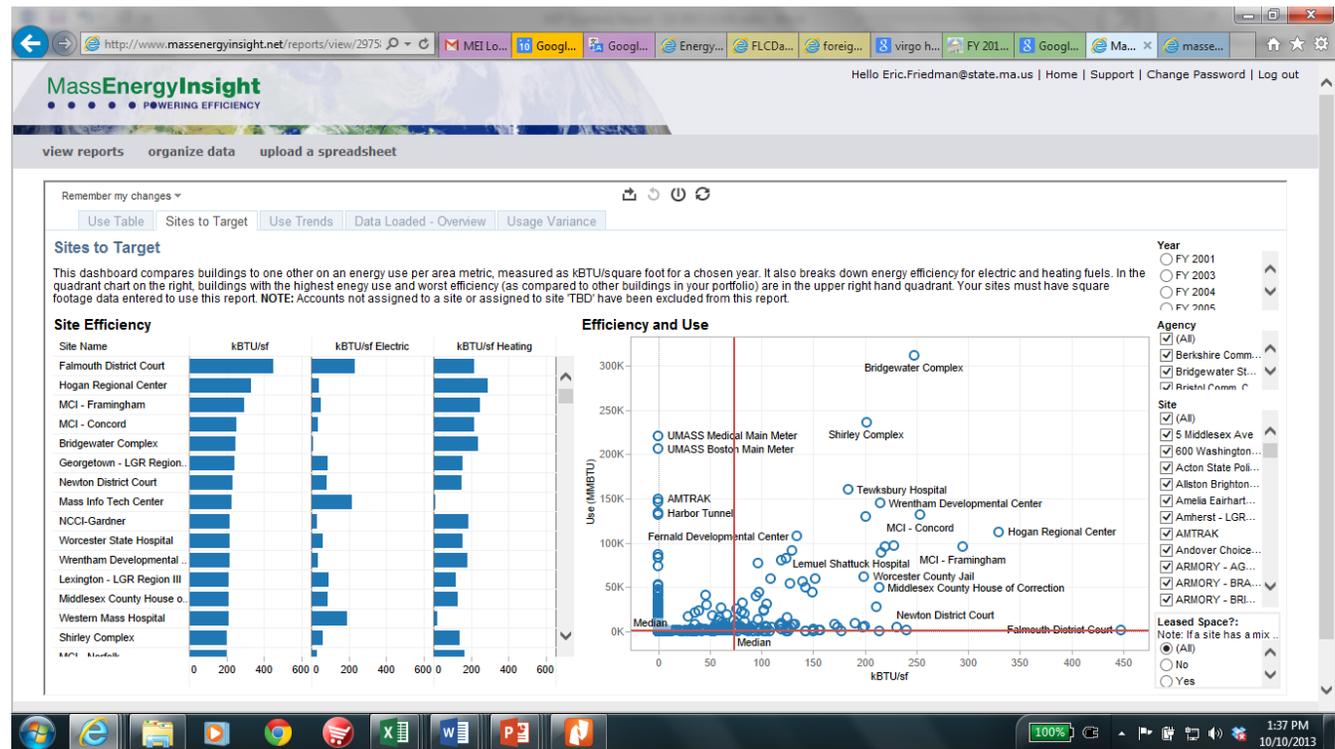
*The Energy Project Database provides project managers with functionality to track measurement and verification after project completion.*

## Facility Energy Usage

In Q3 2013, DCAMM made significant progress mapping the Facility codes listed in CAMIS with the Massachusetts Energy Insight (MEI), the web-based tool funded by DOER to provide online energy usage information by agency and site.

This effort will enable DCAMM and service providers working on energy projects to identify and collect energy usage information to define baseline energy usage during an energy audit.

DCAMM and DOER mapped approximately 50% of the MEI account numbers to CAMIS site codes, which represent 80% of the energy usage across the AEP facility portfolio. This represents an increase of approximately 15% compared to Q3 2013.



The MEI dashboard provides users with analytic tools to compare buildings on an energy use per area metric.

## Quarterly Report Q2 2013

### Appendix A

#### Types of Energy Projects

(As of September 30, 2013)

## Types of Energy Projects

DCAM and DOER have developed a comprehensive implementation strategy for sites in the AEP. The implementation strategy and conservation measures recommended are based on several site characteristics such as size, building usage, and energy usage intensity. This approach allows the Commonwealth to leverage existing retrofit programs with utilities and facility maintenance staff.

### Towards Zero Net Energy Retrofits

The Massachusetts Zero Net Energy Buildings Task Force issued recommendations in March 2009 to guide the Commonwealth on the delivery of Zero Net Energy Buildings. The guiding principle was that achieving the zero net energy performance goal may be infeasible for some buildings, but the broader objective should be to reduce energy loads to the minimum practical level, produce onsite as much as the required energy as reasonable from renewable resources, and purchase locally generated renewable energy to satisfy remaining needs.

DCAMM and DOER are establishing a new innovative approach to retrofitting buildings and sites in the AEP that plan and implement projects that, at minimum, achieve deeper energy retrofits (40% or more in annual energy savings) and incorporate cost effective onsite renewable energy systems. An initial process will be piloted on a small number of sites with the expectation to apply this approach to more sites after further establishing and refining the process.

### Comprehensive Retrofit

E.O. 484 requires that DCAMM retrofits all sites over 100,000 square feet. Comprehensive retrofit projects will involve complex measures requiring longer construction durations and, in most cases, a design phase. These measures include the combination of major renovations such as HVAC systems, energy management systems, and building envelope improvements. Comprehensive projects will provide the greatest savings and improvements in energy efficiency across the state inventory.

DCAMM has shortened the overall procurement duration for energy design-build and comprehensive performance contracts by 67% through Lean process improvements. More discussion of the Lean process is found in the Procurement Working Group section.

### Utility-Approved Vendor Contracting

The utility-approved vendor contracting process allows DCAMM project managers to simplify and streamline the way energy and water conservation measures are implemented at designated groups of statewide facilities. These contracts use utility pre-approved vendors, authorized under M.G.L. c.25A §14.

This process will be used for the majority of the sites and buildings in the AEP, but only represents a small percentage of square footage in the AEP. These sites generally have less than 50,000 sq. ft. of facility space with relatively simple electrical equipment or HVAC systems. The majority of sites being retrofitted through this process are managed by the Department of Conservation and Recreation (DCR) and the Massachusetts Department of Transportation (MassDOT). Within the DCR sites, most are parks, state forests or reservations.

The majority of energy conservation measures will be lighting upgrades (bulbs, fixtures, lamps, LEDs), lighting controls, HVAC filters, resetting control setpoints, programmable thermostats, simple weatherization (weather stripping, caulking, window film, etc.) and water conservation. Retrofit projects will have low initial cost and will provide immediate energy savings.

### **Retro-Commissioning (RCx)**

E.O. 484 requires that all buildings over 50,000 square feet be retro-commissioned. Retro-commissioning is the application of the commissioning process to existing buildings that improves how building equipment and systems function together. Depending on the age of the building, retro-commissioning can often resolve problems that occurred during design or construction, or address problems that have developed throughout the building's life. Retro-commissioning improves a building's operations and maintenance (O&M) procedures to enhance overall building performance.

Many of the sites that have a building with over 50,000 square feet of space include additional, smaller buildings on the same site. Typically, retro-commissioning of smaller buildings does not generate enough savings to justify an investment in detailed engineering analyses. As such, retro-commissioning is planned only for the larger buildings on these sites; other approaches will be pursued for the smaller buildings.

DCAMM developed an approach to programmatically distinguish which buildings will be targeted for RCx level audits and upgrades and which smaller buildings will be targeted for simple fix work.

### **New Review**

DCAMM retrofitted 16 sites between 2000 and 2007 that will be re-evaluated for additional savings as part of the AEP. DCAMM will review these sites and identify additional energy savings potential since the last major improvement was completed. Savings will only be achieved if DCAMM identifies a viable project.

### **Other**

There are sites in the AEP Portfolio that are being retrofitted by a project management team other than DCAMM's Energy Team. These sites are being retrofitted directly by the agency, DOER or a major renovation project through DCAMM Office of Planning, Design and Construction (OPDC).

### **Evaluated – N/A**

There are sites in the AEP portfolio that do not consume energy resources or do not require energy retrofits because they have recently been retrofitted. These sites were determined to have extremely low or no potential to save energy. This may be due to the fact that these sites are scheduled to close before the useful life of new measures is reached or their structures do not consume energy (fire towers, etc.).

## Quarterly Report Q2 2013

### Appendix B

#### Performance Metrics

(As of September 30, 2013)

## Performance Metrics

Goal	Metrics	Target	30-Sep-13
Accelerate delivery of energy projects to 3 years and maximize energy and water conservation.	AEP Audit Complete (Incl. Substantially Complete & Implementation Started)	700 Sites	167 Sites
	<i>Large Sites (over 100,000 Sq. Ft.)</i>	76	24
	<i>Small Sites (under 100,000 Sq. Ft.)</i>	359	76
	<i>Occasional Use Sites</i>	208	10
	<i>Evaluated N/A Sites</i>	57	57
	Investment in Energy Efficiency Measures (in \$ millions)	\$470 million	\$56.5 million
	Spending to date		\$22 million**
	Annual Energy & Water Savings (in \$ millions)	\$43 million	\$5.6 million *
	Average Payback on Total Investment	≤ 10 Years	10.1 years
Communicate progress and encourage full participation.	Public Website with Quarterly Updates	Quarterly	Updated
	Issue bi-monthly newsletter (InReach)	Bi-Monthly	Issued
Create clean energy job opportunities across the Commonwealth.	Workforce / Jobs Created (Total)	~4,000	77
	Workforce / Jobs Created		
	- Minorities	15.3%	6.0%
	- Women	6.9%	0.2%
	M/WBE Participation (Project Commitment / Awards)***		
- Design Contracts	17.9%	11.7%	
- Construction Contracts	10.4%	19.6%	

\*Actual includes All Sites with a Status of "Implementation Started" or "Substantially Complete".

LBE Target

\*\* Spending to date includes All Sites that have been initiated.

\*\*\*M/WBE participation is based on DCAMM Compliance data available on 7 projects in construction and 7 design contracts.

## Quarterly Report Q3 2013

### Appendix C

#### All AEP Sites

(As of September 30, 2013)



## Quarterly Report Q3 2013

### Appendix D

#### AEP Initiated Sites

(As of September 30, 2013)



## Quarterly Report Q3 2013

### Appendix E

#### AEP Certified Sites

(As of September 30, 2013)



## Quarterly Report Q3 2013

### Appendix F

### Financial Management

(As of September 30, 2013)

## Financial Management

The following table provides a schedule of AEP spending by funding source. The current AEP working cost estimate is \$462 million with a \$8 million contingency for a total approved budget of \$470 million.

The working estimate is a combination of known costs for projects in progress or completed and estimated spending projections for future projects. The cost estimate and the remaining contingency will change as projections are replaced by known costs. Some projects designated as AEP Complete just started construction so spending continues through 2014.

Substantially Complete	Total Cost	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
CEIP Funds	\$ 4,285,688	\$ -	\$ -	\$ -	\$ -	\$ 3,214,266	\$ 1,071,422	\$ -	\$ -	\$ -
GO Bond Funds	\$ 2,667,144	\$ 3,561	\$ -	\$ 210,508	\$ 333,529	\$ 1,534,499	\$ 569,146	\$ 15,900	\$ -	\$ -
Utility Rebates/Other Funding	\$ 1,669,900	\$ -	\$ -	\$ -	\$ -	\$ 1,661,400	\$ 8,500	\$ -	\$ -	\$ -
<b>Subtotal Substantially Complete</b>	<b>\$ 8,622,732</b>	<b>\$ 3,561</b>	<b>\$ -</b>	<b>\$ 210,508</b>	<b>\$ 333,529</b>	<b>\$ 6,410,165</b>	<b>\$ 1,649,068</b>	<b>\$ 15,900</b>	<b>\$ -</b>	<b>\$ -</b>
Implementation Started	Total Cost	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
CEIP Funds	\$ 21,350,970	\$ -	\$ -	\$ -	\$ -	\$ 5,641,776	\$ 12,250,506	\$ 3,458,689	\$ -	\$ -
GO Bond Funds	\$ 18,620,072	\$ -	\$ -	\$ 375,595	\$ 315,103	\$ 2,868,753	\$ 11,736,103	\$ 3,324,519	\$ -	\$ -
Utility Rebates/Other Funding	\$ 80,400	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,400	\$ -	\$ -	\$ -
<b>Subtotal Implementation Started</b>	<b>\$ 40,051,442</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 375,595</b>	<b>\$ 315,103</b>	<b>\$ 8,510,528</b>	<b>\$ 24,067,008</b>	<b>\$ 6,783,208</b>	<b>\$ -</b>	<b>\$ -</b>
Audit Complete	Total Cost	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
CEIP Funds	\$ 121,034,059	\$ -	\$ 1,481,109	\$ -	\$ 1,171,080	\$ 7,353,857	\$ 16,506,000	\$ 3,126,876	\$ 81,248,360	\$ 10,146,776
GO Bond Funds	\$ 35,325,500	\$ -	\$ 429,892	\$ -	\$ 339,113	\$ 2,133,664	\$ 4,072,562	\$ 1,822,830	\$ 23,582,339	\$ 2,945,101
Utility Rebates/Other Funding	\$ 15,236,305	\$ -	\$ 185,139	\$ -	\$ 146,385	\$ 919,232	\$ 2,073,955	\$ 487,202	\$ 10,156,045	\$ 1,268,347
<b>Subtotal Audit Complete</b>	<b>\$ 171,595,864</b>	<b>\$ -</b>	<b>\$ 2,096,140</b>	<b>\$ -</b>	<b>\$ 1,656,577</b>	<b>\$ 10,406,753</b>	<b>\$ 22,652,516</b>	<b>\$ 5,436,909</b>	<b>\$ 114,986,744</b>	<b>\$ 14,360,225</b>
Initiated	Total Cost	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
CEIP Funds	\$ 82,518,242	\$ -	\$ -	\$ -	\$ -	\$ 57,939	\$ 1,465,113	\$ 8,390,540	\$ 9,346,346	\$ 57,082,749
GO Bond Funds	\$ 30,108,222	\$ -	\$ -	\$ -	\$ -	\$ 7,242	\$ 832,193	\$ 7,935,966	\$ 2,972,097	\$ 16,568,269
Utility Rebates/Other Funding	\$ 10,994,742	\$ -	\$ -	\$ -	\$ -	\$ 7,242	\$ 227,560	\$ 1,657,062	\$ 1,195,590	\$ 7,135,344
<b>Subtotal Initiated</b>	<b>\$ 123,621,206</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 72,424</b>	<b>\$ 2,524,866</b>	<b>\$ 17,983,567</b>	<b>\$ 13,514,033</b>	<b>\$ 80,786,362</b>
Remaining	Total Cost	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
CEIP Funds	\$ 80,376,159	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 819,896	\$ 7,772,524	\$ 39,317,760	\$ 22,425,517
GO Bond Funds	\$ 28,394,237	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 102,487	\$ 6,345,601	\$ 12,573,549	\$ 6,509,007
Utility Rebates/Other Funding	\$ 10,935,714	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 102,487	\$ 1,426,336	\$ 5,348,644	\$ 2,803,190
<b>Subtotal Remaining</b>	<b>\$ 119,706,111</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,024,869</b>	<b>\$ 15,544,462</b>	<b>\$ 57,239,954</b>	<b>\$ 31,737,714</b>
Total	Total Cost	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
CEIP Funds	\$ 309,565,118	\$ -	\$ 1,481,109	\$ -	\$ 1,171,080	\$ 16,267,838	\$ 32,112,936	\$ 22,748,629	\$ 129,912,467	\$ 89,655,043
GO Bond Funds	\$ 115,115,175	\$ 3,561	\$ 429,892	\$ 586,103	\$ 987,745	\$ 6,544,158	\$ 17,312,491	\$ 19,444,816	\$ 39,127,985	\$ 26,022,377
Utility Rebates/Other Funding	\$ 38,917,061	\$ -	\$ 185,139	\$ -	\$ 146,385	\$ 2,587,874	\$ 2,492,902	\$ 3,570,600	\$ 16,700,279	\$ 11,206,880
<b>TOTAL</b>	<b>\$ 463,597,355</b>	<b>\$ 3,561</b>	<b>\$ 2,096,140</b>	<b>\$ 586,103</b>	<b>\$ 2,305,210</b>	<b>\$ 25,399,870</b>	<b>\$ 51,918,328</b>	<b>\$ 45,764,046</b>	<b>\$ 185,740,730</b>	<b>\$ 126,884,300</b>
Program Contingency	\$ 6,193,438									
<b>Total Budgeted (approved by A&amp;F)</b>	<b>\$ 469,790,793</b>									