CLEANENERGYRESULTS

Annual Report to the Massachusetts Department of Energy Resources

Covering January 1, 2017 – December 31, 2017

Sunrise at the Chatham Landfill Solar Installation

2017

Massachusetts Department of Environmental Protection

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EXECUTIVE SUMMARY

The Clean Energy Results Program (CERP), launched in November 2011, is a first-of-its-kind partnership between the Massachusetts Department of Environmental Protection (MassDEP) and the Massachusetts Department of Energy Resources (DOER). This innovative program builds on MassDEP's regulatory expertise and authority to support DOER in advancing the permitting and development of renewable energy and energy efficiency projects throughout Massachusetts. MassDEP also works closely with the Massachusetts Clean Energy Center (MassCEC) on CERP program activities.

This Annual Report covers MassDEP activities performed from January 1 – December 31, 2017. It is being provided pursuant to the Memorandum of Agreement (MOA) executed between MassDEP and DOER, which sets the conditions for the Clean Energy Results Program funding.

The major new CERP activity for 2017 was the initiation of the second round of funding for the Gap Grant Program, known as Gap II, supporting the installation of energy efficiency and renewable energy projects at water and wastewater facilities. This program, based on the success of the initial Gap Grant Program in 2014, was announced in the fall of 2017 with applications being accepted through the end of November. The program solicitation, initially funded with $3 million from Alternative Compliance Payments (ACP) by DOER, attracted 48 applications from public water and wastewater facilities requesting $6.3 million in funding for projects that will be implemented primarily during FY2019.

In addition to the Gap II grant program, MassDEP assisted with development of clean energy projects across Massachusetts. MassDEP continued to make significant progress permitting innovative projects, providing technical assistance, and collaborating on policy and regulatory initiatives that promote clean and renewable energy and energy efficiency projects. MassDEP reviewed air and waste permits for anaerobic digester projects that will manage source-separated organics, furthering MassDEP's goal of diverting an additional 350,000 tons of organics from disposal by 2020. In addition, MassDEP was part of a team of several Commonwealth agencies, including UMass Lowell and UMass Amherst, along with the United States Environmental Protection Agency (US EPA) that organized workshops with the Food and Beverage Industry, focusing not only on energy efficiency, but also reducing water and chemical use, and substituting safer cleaning materials, all with an eye toward reducing costs and promoting improved operations.

MassDEP updated policies addressing installation of solar projects in wetland resource areas as well as installation of solar projects within the Zone I (the 400 foot radius around a wellhead) of public drinking water wells.

The work of MassDEP staff directly advanced numerous clean energy and energy efficiency projects including installation of solar photovoltaic (PV) systems on contaminated sites and closed landfills, construction of anaerobic digestion facilities, promotion of techniques for greener cleanups of contaminated sites, and promotion of energy efficiency projects at numerous wastewater and drinking water treatment and industrial facilities.

Below are highlights from each key program area. More information on each of these can be found under the Detailed Program Progress section of this report.

Organics Diversion and Anaerobic Digestion

Over the course of 2017, MassDEP continued to promote development of anaerobic digesters (AD) as one effective way to manage organics, and generate energy. During 2017 the following four AD facilities were permitted: Crescent Farm, Haverhill; Luther-Belden Farm, Hatfield; Rockwood Farm, Granville; and Jordan Heifer Farm, Spencer.

Grants for Organics Processing Equipment

In 2017, MassDEP reviewed and awarded grants for increasing organics processing capacity through the agency's Sustainable Materials Recycling Program (SMRP). The proposals are providing additional processed organic waste feedstock for use by anaerobic digesters and composting facilities. These new applications supplement grants awarded in 2016 for organics processing operations.

Renewable Energy at Contaminated Sites and Landfills

MassDEP continued to work with developers of contaminated sites and landfills interested in installing solar projects. A pre-determination letter is required by DOER to ensure that a contaminated site qualifies as a Brownfield which in turn promotes optimal siting of solar projects at sites other than greenfield sites. DOER reviews requests in consultation with MassDEP. Ten contaminated sites were the subject of requests for "pre-determination letters" from DOER. If all these projects are constructed, they will have more than 40 MW of solar generation capacity. In addition, MassDEP worked with proponents of many more potential projects to site clean energy generation on contaminated sites.

In 2017 MassDEP permitted another four landfills for solar projects and 14 landfills that had previously received their post-closure use permits completed construction and started operating.

MassDEP's Bureau of Waste Site Cleanup continued to encourage "Greener Cleanups" at contaminated sites, speaking at several conferences and workshops on the subject. In addition, a new program of recognizing leaders in greener cleanups was started in conjunction with the Licensed Site Professionals Association (LSPA). The 2017 award was presented to Westover Air Reserve Base and its Licensed Site Professional, Mr. James Soukup.

Food and Beverage Industry Initiative

Based on the successful model used with the water and wastewater utilities, a new initiative to hold workshops for the food and beverage industry began in 2016. This initiative was developed with a number of partners including UMass Lowell, UMass Amherst, USEPA, DOER, DAR, DPH, OTA and TURI. In 2017, interactive workshops were held at Stop & Shop's facility in Freetown, MA; at Gorton's of Gloucester's facility in Gloucester, MA; and at UMass Lowell in Lowell, MA. These "Greening Your Bottom Line" workshops were targeted at slightly different audiences and designed to assist businesses to reduce energy use and costs by providing information and assistance on energy efficiency, renewable energy, waste diversion and reduction, and use of safer chemicals and cleaning/sanitizing materials.

Water and Wastewater Utilities

In 2017, the major focus of activities in the water sector was the launching of the Gap II grant program to increase energy efficiency and expand clean generation projects at municipal drinking water and wastewater facilities across the Commonwealth. Upon receiving $3 million of funding assistance from

DOER for a new round of gap funding grants during the summer of 2017, MassDEP surveyed water and wastewater facilities to gauge application interest as well as the number and types of projects ready to move forward that could be supported through these grants. This was followed by a grant solicitation. Grant applications were accepted through the end of November, 2017.

Detailed Program Updates

Food and Beverage Industry

MassDEP has been looking to build on the success of the Clean Energy at Water and Wastewater Facilities program by using its framework with another industry sector. The food and beverage sector is somewhat different than water and wastewater facilities with a wide range of different kinds of manufacturing processes, large differences in volume, size and production capacity, and of course the materials used. The broad sector includes very large, multi-national companies and very small companies. Therefore, the corporate resources available to focus on topics such as energy efficiency, minimizing waste or using safer cleaning materials vary substantially.

A team consisting of MassDEP; UMass Lowell, Center for Sustainable Production; UMass Amherst, Center for Energy Efficiency & Renewable Energy; UMass Clean Energy Extension; USEPA, Region I; the Department of Agricultural Resources; the Department of Energy Resources; the Department of Public Health; the Office of Technical Assistance; and the Toxics Use Reduction Institute organized three workshops with the Food and Beverage Industry focusing on reducing costs for the industry by improving energy efficiency and use of renewable energy, reducing chemical use, using safer cleaning materials, and promoting improved operations.

Workshops were held at Stop & Shop's facility in Freetown, MA; at Gorton's of Gloucester's facility in Gloucester, MA; and at UMass Lowell in Lowell, MA to help companies learn about the opportunities that are available to reduce energy use, water consumption and limit toxic chemical use, thereby saving money. At each workshop, two or three companies highlighted the types of sustainability practices they had considered and put into place with the idea that many of the practices could be transferable to other businesses. The workshops provided opportunities for companies to learn about no cost energy audits that can be provided by the energy suppliers and UMass. In addition, the participating companies discussed other sustainability topics such as using less toxic cleaning agents, opportunities to divert waste from disposal to composting or anaerobic digestion, etc. Some of the "take away" points from the workshops that attendees commented on included:

- There are many opportunities
- There are many experiences to draw from
- Other companies have similar challenges
- Schedule an audit
- Talk to your energy utility first!
- There are free resources available
- Seek assistance on energy, waste, usage issues from experts

As a direct result of the workshops, several companies scheduled energy audits with their energy provider or UMass and have started to put the resulting recommendations into effect. In addition, via contacts made at the workshops companies have contracted to divert organics from landfill disposal and sought further information about less toxic cleaning agents.

Additional workshops will be held in 2018 to reach food and beverage companies in other parts of the Commonwealth.

The workshops were made possible by a grant from EPA Region I to the University of Massachusetts, Lowell.

Anaerobic Digestion/Organics Diversion

Recycling Business Development Grants – MassDEP continued to manage Recycling Business Development Grants for food de-packaging facilities to help source organics for anaerobic digestion facilities. MassDEP managed existing grants to E.L. Harvey (system installed and operating) and Commonwealth Resource Management Company (CRMC) (system not installed pending overall facility development and permitting). 2017 program applications were evaluated and in February 2018, resulted in awards to the Waste Management CoRE Facility in Charlestown (up to $100,000) for a tank and piping to expand their operation and to AgGrid Energy (up to $250,000) for a de-packaging unit as part of their AD facility at Rockwood Farm.

Recycling Loan Fund –MassDEP's Bureau of Air and Waste Recycling Loan Fund continued to oversee and service approximately $1.2 million in outstanding loans to three AD facilities that will use food waste organics as one of their input streams – Commonwealth Resource Management Company (CRMC), Pine Island Farm, and Rockwood Farm. The Rockwood Farm loan was issued in 2017 to assist with the construction of the AD facility.

Economic Impact Analysis Study – At the April, 2017 BioCycle Conference MassDEP made a presentation with ICF (MassDEP's contractor) on the Commercial Organics Ban Economic Impact Analysis Study. This study, which was completed in December 2016, showed that employment in the organics processing sector had grown by 150% from 2010 to 2016, and projected an additional 50% growth by the end of 2017. In addition, the organics processing sector had planned facility and equipment investments of more than $43 million in the works. Industry interviews indicated that much of this planned investment was related to anaerobic digestion. The report is available at: https://www.mass.gov/files/documents/2016/12/nx/orgecon-study.pdf.

ReFED Food Waste Funders Meeting –In October, 2017 MassDEP participated in a meeting of food waste funders organized by ReFED, a national coalition working to advance food waste reduction. The meeting focused on building connections between potential sources of funding and food waste reduction and diversion opportunities in Massachusetts.

Organics Progress Report – MassDEP presented an organics progress report at the agency's Solid Waste Advisory Committee's Organics Subcommittee meeting in December 2017. The report indicated that in 2016, more than 260,000 tons of food material was diverted from disposal, with nearly 60,000 tons going to anaerobic digestion. Massachusetts has more than 300,000 tons of existing anaerobic digestion capacity for food material, and this capacity is expected to grow to nearly 600,000 tons counting capacity currently under development. This presentation is available at: https://www.mass.gov/files/documents/2018/02/08/1217-orgupdt_0.pdf.

Siting and Permitting of New Anaerobic Digestion Facilities

The siting, permitting and construction of new and expanding anaerobic digestion facilities continued during 2017. Pre-permit meetings were held with the following proposed digester projects:

- Holyoke WWTP – Holyoke, pre-permit meeting with MassDEP's Western Regional Office (WERO)

- Hunt's Farm – Orange, pre-permitting meeting with WERO
- Shy Brothers Farm – Westport, pre-permitting meeting with MassDEP's Southeast Regional Office (SERO)

Facilities permitted in 2017 include:

- Crescent Farm in Haverhill received a Recycling, Composting or Conversion (RCC) permit in 2017 and started construction before the end of the year
- Luther Belden Farm in Hatfield received a general permit
- Rockwood Farm in Granville received a general permit.

Facilities under construction in 2017 include:

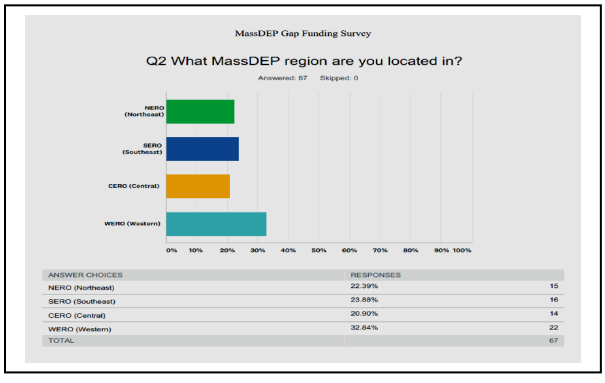
- The Greater Lawrence Sanitary District (GLSD) continued construction on its AD expansion project and started handling organics on a pilot scale, slowly ramping up the amount of organics accepted over the course of the year.

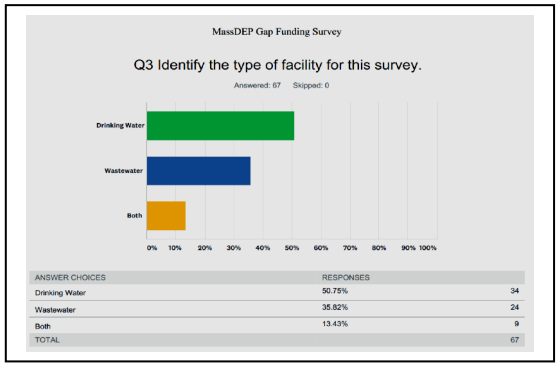
Facilities that started operating in 2017 include:

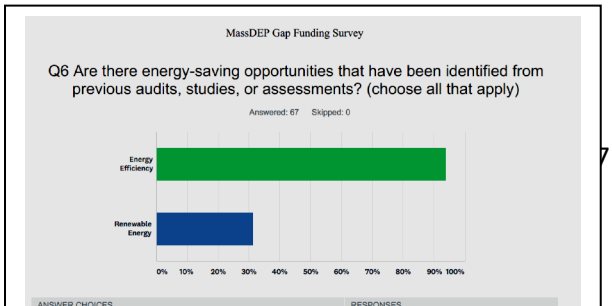
- Barstow Farm in Granby began operating a second engine.
- Barway Farm in Deerfield started up full operation during 2017.

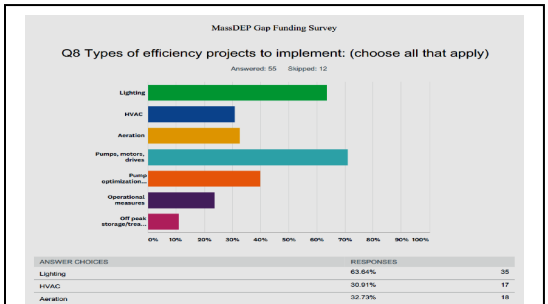
Clean Energy at Drinking Water and Wastewater Utilities

As part of our ongoing effort to reduce operating costs and greenhouse gas emissions using the Gap funding model, MassDEP conducted a statewide survey in the summer of 2017 to gauge the level of municipal interest in pursuing energy-saving opportunities at drinking water and wastewater facilities, and a general sense of "project readiness". Overall, there were 67 responses to the survey. The survey revealed that there was clearly a good mix of "previously assessed" energy efficiency and clean energy generation opportunities across all four of our regional territories that could advance as applications for gap grant funding (see survey summaries below).



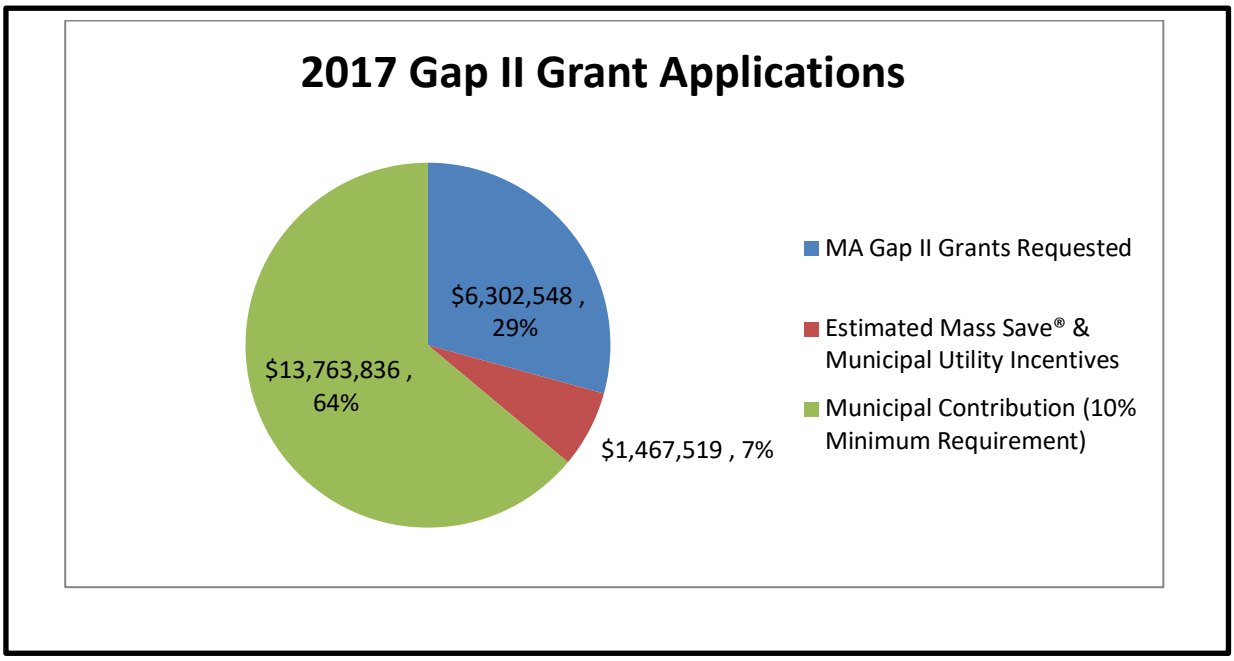




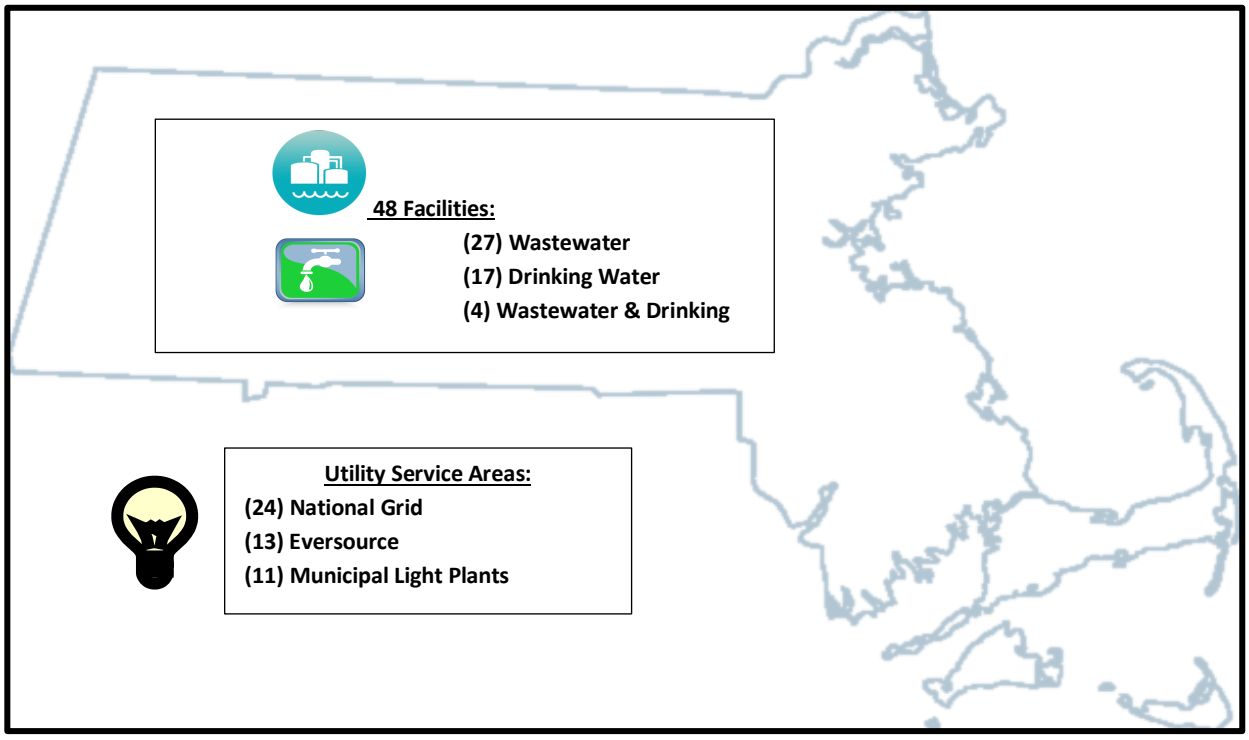


MassDEP continued to leverage its multi-agency CERP partnership knowledge and program resources to improve the efficiency and cost-effectiveness of the water infrastructure across the Commonwealth. On October 5, 2017 the Baker-Polito Administration announced that MassDEP, with funding assistance from DOER and MassCEC, was launching the Gap II grant program for public water and wastewater facilities to assist the facilities with implementing previously assessed energy efficiency and renewable energy projects. The program built on the successful Gap I grant program. The Gap II grant application period closed on November 30, 2017. These grant applications represented a good geographic mix of drinking water and wastewater facility sizes, treatment processes, energy-saving project types, cost-saving measures, and utility service areas. In total, the statewide summary of the 48 grant applications received represented:

- $21.5 million in total project costs for energy efficiency and clean energy implementation
- $6.3 million in Gap II grant assistance
- (17) drinking water, (27) wastewater, and (4) both wastewater and drinking water
- (24) in National Grid, (13) in Eversource, (11) Municipal Light Plant service territories
- 75% for implementation of energy efficiency measures and 25% for clean energy generation
- (19) applications requesting < $100,000 in Gap II grant funds
- (29) applications requesting > $100,000 in Gap II grant funds
- $ 1.6 million in estimated annual cost savings for facilities
- 10.5 megawatt hours of estimated annual savings or on-site clean energy generation



2017 Gap II Grant Requests – Geographic Representation



MassDEP expects to announce the Gap II grant awards in the spring of 2018, and a detailed update of the projects will be provided in our 2018 CERP Report.

Massachusetts Pumping System Optimization Approach Moves into the Implementation Phase

Over the course of two years, MassDEP has worked in collaboration with National Grid, Eversource and pumping system specialists to move the statewide pumping system optimization approach from education and assessment into the implementation phase. Pumping systems represent a major electrical load for this sector and therefore represent an opportunity for plants across Massachusetts to increase efficiency and reduce costs. Pumping represents approximately 90% of electric usage for water facilities and 20-30% at wastewater facilities. Identifying and implementing energy efficiency improvements at water and wastewater plants has been a major focus of our energy management efforts.

In November 2015, MassDEP worked in partnership with the Hydraulic Institute (New Jersey based), National Grid, Eversource, and the Massachusetts Water and Wastewater trade Associations to kick off the first statewide Pump System Optimization (PSO) webinar and an on-site PSO management training session for municipal drinking water and wastewater facilities in Westborough. Fifty attendees from thirty wastewater and drinking water facilities participated in the training and simultaneous webinar.

In 2016, as a direct result of MassDEP's leadership and this training, National Grid and Eversource developed a pump system optimization strategy and launched a Pilot Study for drinking water and wastewater customers in their service territories. National Grid and Eversource committed to providing

technical and financial support to conduct energy evaluations of water or wastewater pumping stations (in-plant or at distribution/collection system pump stations). The purpose of this Pilot was to:

- Determine current energy usage of pumps;
- Field test pumps to provide data on current operating efficiency;
- Identify opportunities for energy savings;
- Identify if the pumps are eligible for rebuild or replacement; and
- Identify if the pumps would potentially benefit from application of epoxy coating to reduce friction and improve pump efficiency.

As a result of Massachusetts' pumping system optimization efforts, sixteen evaluations were conducted that identified approximately $400,000 of annual cost savings and 3,200,000 kW hours that could potentially be reduced. The following facilities have moved forward and implemented their comprehensive pumping system energy-saving recommendations.

Facility	Electric Utility	Project Cost	Annual kWh Savings	Eversource Incentives	Annual Cost Savings	Simple Payback (years)
MWRA – Deer Island	Eversource	$ 99,210	446,157	$29,255	$36,674	1.9
West Springfield Wastewater	Eversource	$25,026	49,769	$15,205	$6,460	1.5
Wareham Fire District	Eversource	$92,475	93,359	$64,732	$13,982	2.0
Totals		**$216,711**	**589,285**	**$109,192**	**$57,116**	**1.9**

Walpole Water Department

As part of a comprehensive hydraulic and electrical performance assessment through Eversource, the town of Walpole optimized four of their drinking water booster pumping stations; High Street, Washington Street, Old Post Road, and Texaco Booster. Five Centrifugal pumping systems were maximized for operating efficiency – including rebuilding 3 pumps; installing premium efficient motors; and retrofitting (2) pumping systems with new variable speed drives, pumps and motors. In total, the town of Walpole is saving over $16,000 / year and reducing its annual electrical usage by over 116,000 kilowatt hours.

Additionally, in 2017, four communities requested Gap II grant funds to implement Pump System Optimization projects that are projected to save facilities over $96,000 annually. These projects will be reviewed for grant assistance in 2018.

Facility	Electric Utility	Project Cost	Annual kWh Savings	Annual Cost Savings	Simple Payback (years)
Dartmouth Water	Eversource	$ 149,674	375,889	$68,833	2.2
Webster Wastewater	National Grid	$ 52,379	78,652	$15,730	3.3
Ayer Wastewater	National Grid	$59,400	29,668	$4,877	12.2
Lynnfield Water District	Municipal	$88,270	38,470	$7,348	12
Totals		**$349,723**	**522,679**	**$96,788**	**3.6**

Advancing MassCEC's Wastewater Treatment Innovation Technology Pilot Grants

Since the program's inception in August, 2016, MassDEP has actively participated in MassCEC's wastewater treatment innovation technology pilot grant program. The primary goal of the Program is to assist publicly-owned Massachusetts Wastewater Treatment districts and authorities by funding the piloting of innovative water technologies with strong potential to increase the energy efficiency of the wastewater treatment process. The program also supports the Water Innovation Hub in Massachusetts by providing grants to businesses and bringing technologies to market that will move the water innovation economy into areas where new technologies can solve current challenges.

In 2017, MassDEP continued to provide technical assistance, outreach and assist in reviewing grant applications with the Innovation Group at MassCEC. MassDEP served on the grant review team and evaluated seven innovative technologies grant proposals – ranging from microbial fuel cells, ultrafiltration membrane for wastewater reuse, enhanced biological aeration techniques etc. MassDEP will continue our inter-agency collaboration with MassCEC to advance wastewater innovation and efficiency work across the state.

Outreach and Education Efforts to Drinking Water and Wastewater Facilities

MassDEP continued to provide additional technical assistance and education to municipal drinking water and wastewater managers on opportunities to reduce energy and greenhouse gas emissions at facilities. The MassDEP CERP program provided information or presentations at:

- National Grid's Annual Municipal Energy Summit at Holy Cross in Worcester (April, 2017)
- MA Water Pollution Control Association's Quarterly Meeting (June, 2017)
- Eversource Webinar – Energy Saving Opportunities in the Water Sector (June, 2017)

Related Information

- **Innovation in the Water Sector: Pathway to Zero-Net Energy**
  https://www.mass.gov/files/documents/2017/03/zt/jaw201607snow_npr.pdf?_ga=2.86902301.426441118.1547062363-500259185.1531748103

- **Massachusetts Return-On-Investment: A 'Gap Funding' Model for Success** https://www.mass.gov/files/documents/2017/03/zv/jaw201610dibara_npr.pdf?_ga=2.159925944.426441118.1547062363-500259185.1531748103

Renewable Energy on Closed Landfills

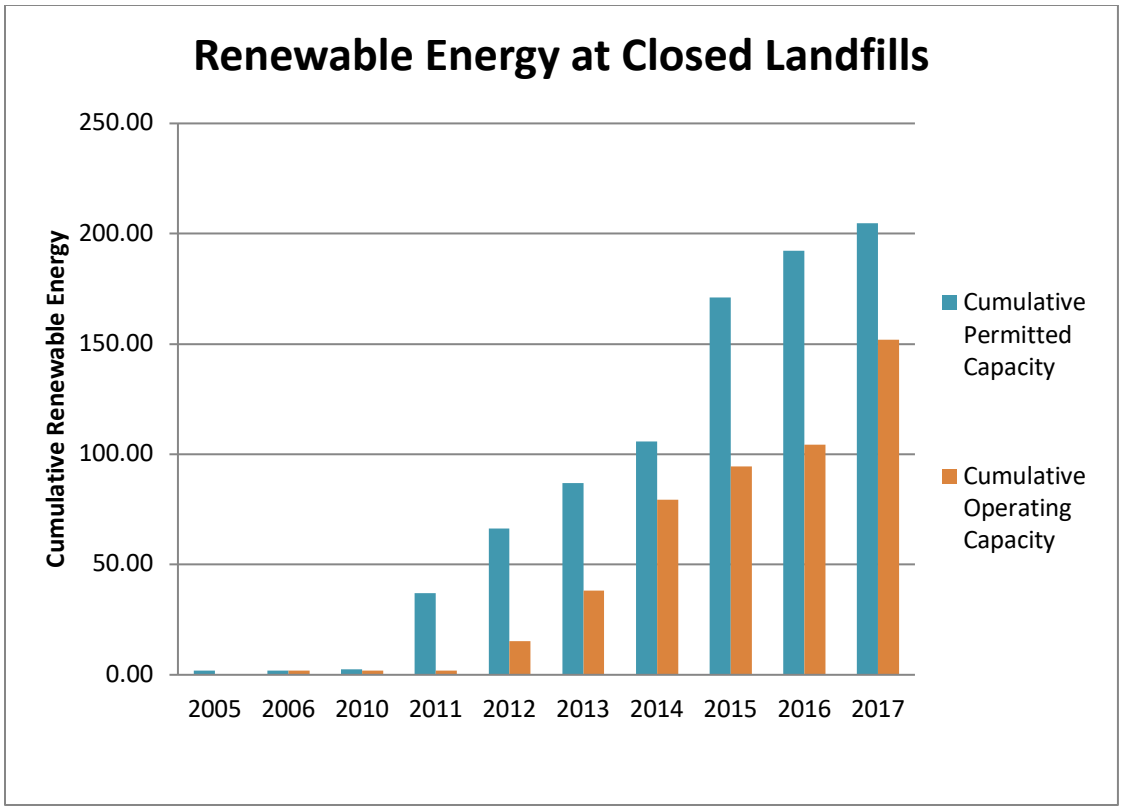
During 2017, MassDEP continued to review and approve solar PV projects at closed landfills while several previously approved projects completed construction and came online. Through the end of 2017, 90 landfills had received post-closure use permits for a total of 204.9 MW of solar and wind and 68 projects generating 151.9 MW had come on line and are now operating. Operating landfill renewable energy projects represent 6.5% of operating solar in Massachusetts. The following lists summarize the activities that occurred with solar-on-landfill projects during 2017:

Four New, Modified or Revised Post-Closure Use Permits for Solar-on-Landfill Installations Rated at a Total of 12.5 megawatts (MW):

- Pembroke LF
- Chuckran Corp. LF
- BFI Randolph LF
- East Bridgewater LF

Fourteen Previously Permitted Solar-on-Landfill Projects Began Operations in 2017, Generating a Total of 36.5 MW:

- Pittsfield Municipal LF
- Falmouth LF
- Schweitzer-Mauduit LF
- Berkley LF
- South Street LF
- Greenwood Street LF
- Shirley Landill
- Woburn LF
- Bird LF
- Rumford Avenue LF
- Cedar Street LF
- Northampton LF
- Williamstown Phase I LF
- Willow Creek Road LF



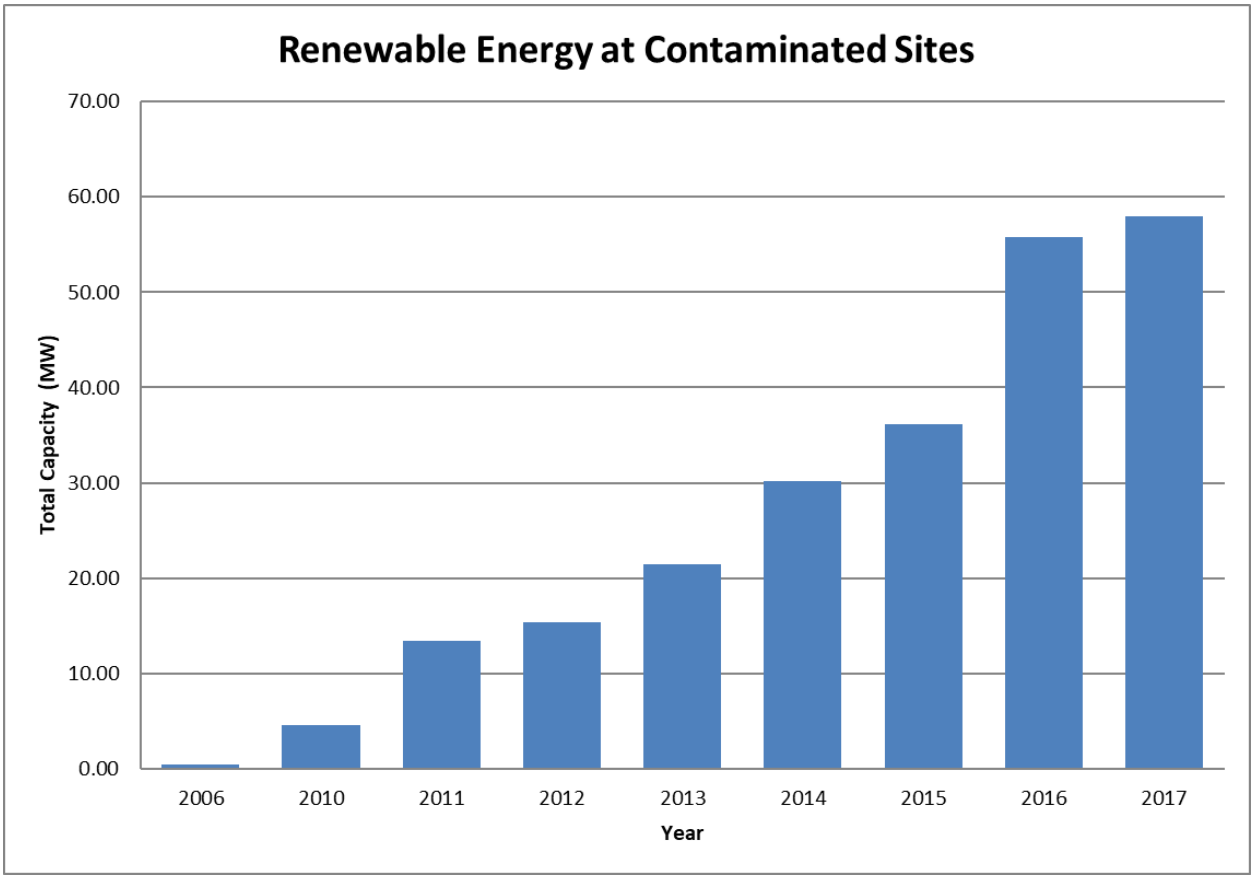
Renewable Energy on Contaminated Sites

MassDEP continued its compliance assistance work with property owners and developers interested in developing new solar projects on contaminated sites/brownfields. In 2017, six of ten projects filed applications requesting Pre-Determination status as Brownfield sites per DOER's Renewable Portfolio Standard regulations. MassDEP completed reviews and issued recommendations on the applications to DOER supporting issuance of the Pre-Determination letters. Supportive Pre-Determination letters qualify applicants for additional incentives that help the project overcome development hindrances generally associated with contaminated property. The following ten sites will represent an additional 40 MW of power if all the proposed solar installations are constructed, adding to the 58.0 MW already operating on contaminated sites. Those that have received pre-determination letters include:

- Former Cowles Gravel Site, Westfield, RTN 1-19856, 2.6 MW
- FMR Berkshire Truck Plaza, West Stockbridge, RTN 1-11099, 2 MW
- Former Lucent Technologies, North Andover, RTN 3-0174, 6 MW
- Former Lucent Technologies II, North Andover, RTN 3-0174, 6 MW
- W.R. Grace, Concord, RTN 2-0000010, ~ 4.5 MW
- Lexington Landfill, Lexington, RTN 3-21522, ~ 2.2 MW (no PCUP, closed via 21E w/AUL)

In addition, the following sites meet the RPS definition of Brownfield, but do not have a pre-determination letter:

- General Latex/DOW Property, IHP Superfund, Billerica, RTN 3-0000237, 4.0 MW *(No PD)*
- IHP Asbestos landfill, IHP Superfund, Billerica, RTN 3-0000240, 6.0 MWs *(No PD)*
- MBTA, Dedham, RTN 3-0002856, 3.0 MWs *(No PD)*
- Bird Machine & Company, Walpole, RTN 4-3002469, 4.1 MWs *(No PD)*



Greener Cleanups Awards

MassDEP honored four members of the Licensed Site Professionals Association (LSPA) with Greener Cleanups Awards at the LSPA's September Membership Meeting in Newton, MA.

The Greener Cleanups Awards were presented to the following Licensed Site Professionals (LSPs) and their clients for demonstrating professional stewardship in promoting Greener Cleanup principles and practices to reduce the overall net environmental footprint of hazardous waste site cleanup response actions implemented under the Massachusetts Contingency Plan:

- Donald Podsen, LSP, Managing Hydrogeologist at Brown & Caldwell in Andover, Massachusetts and his project team received the Greener Cleanup Leadership Recognition Award for their work with the City of Medford at the 448 High Street Site in Medford, Massachusetts.

- J. Andrew Irwin, PE, LSP, *President of* IRWIN Engineers in Natick, Massachusetts received a Greener Cleanup Leadership Award, Honorable Mention for his work with Brownfields Real Estate Development LLC at the 129 Concord Road Site in Billerica, Massachusetts.
- David Austin, LSP, Senior Project Manager at AECOM in Chelmsford, Massachusetts received a Greener Cleanup Leadership Award, Honorable Mention for his work with Pentair at the Former Tyco Valves & Controls Site in Wrentham, Massachusetts.
- Matthew Hackman, LSP, President at Matthew Hackman, PE, CHMM, Inc. in Warwick, Rhode Island received an award for Greener Cleanups Stewardship.

Greener Cleanups are promoted by MassDEP in an effort to eliminate or reduce total energy use, air pollutant emissions, greenhouse gases, water use, materials consumption, and ecosystem and water resources impacts related to the assessment and cleanup of property where oil or hazardous materials have been released into the environment.

Summary of Goals for 2018

MassDEP will continue to work with DOER and MassCEC to pursue energy efficiency and renewable energy projects at facilities across the Commonwealth in 2018 as well as look for opportunities, such as with the food and beverage industry, to continue to expand our work to new categories of facilities.

• Implementation of Gap II Grant Program – Contract with each facility and verify implementation of energy efficiency or renewable energy measures and reimburse facility up to grant amount
• Continue to issue post-closure use permits for utility scale solar projects on old capped and closed landfills
• Continue to work with developers to install utility scale solar projects at contaminated land/brownfield sites and bring such sites back into productive use
• Continue to promote green and sustainable remediation practices including the deployment of energy efficiency measures and renewable energy technologies in site cleanup applications
• Continue to promote the application and installation of renewable thermal technologies/Ground-Source Heat Pumps for building heating and cooling and remedial process water qualifying under the Alternative Portfolio Standard (APS)
• Explore opportunities for deployment of climate change adaptation and resiliency measures inclusive of energy storage and standby power applications for remedial systems supported by the Energy Diversity Act and Governor Baker's Executive Order 569.
• Hold workshops, modeled on the highly successful Clean Energy Partnership for Water and Wastewater Facilities, with the food and beverage industry to promote energy efficiency, waste reduction, toxics reduction and greener cleaning
• Continue to work with development of anaerobic digester projects to provide infrastructure for managing diverted waste organics and generate clean energy
• Use every opportunity to work with partners, DOER and MassCEC, to encourage businesses and facilities that MassDEP regulates to consider conducting assessments and implementing energy efficiency measures and/or renewable power

Regional Office and Bureau Summaries

Western Region 2017 CERP Summary

- **2/7, Turners Falls Hydro, LLC, Montague (WERO):** MassDEP participated in a FERC-related Joint Meeting and Site Visit regarding the Turners Falls Hydroelectric Project, FERC Project No. 2622.
- **2/27, Vanguard AD, Orange (WERO):** MassDEP staff held a pre-permitting meeting with Vanguard AD to discuss a proposed Anaerobic Digestion facility in Orange.
- **3/7, Kearsarge Energy, Montague (WERO):** MassDEP met with the Town of Montague, Kearsarge Energy, and Tighe & Bond to discuss the development of a solar array at the Town of Montague landfill.
- **3/8, AGrid Energy, Granville and Hatfield (WERO):** MassDEP met with AGrid Energy to discuss the development of Anaerobic Digestion facilities at farms located in Granville and Hatfield. The facility in Granville is contemplating the installation of a depackager which will require permitting under the Solid Waste program.
- **5/1, Deerfield AD1 LLC, Deerfield (WERO):** MassDEP issued a revised Solid Waste - Recycling, Composting or Conversion (RCC) permit for the anaerobic digester at the Barway Farm in Deerfield. This revised permit addresses a number of small issues relating to standards, reporting, and management of materials. *(Photo: Anaerobic Digester with membrane cover in operation at Barway Farm 4/17)*

- **6/6, Minuteman Wind, Savoy (WERO):** MassDEP participated in a conference call with this proposed wind farm in response to a request for modification of certain provisions of the Water Quality Certification issued for this project.
- **6/21, Hadley AD 1, LLC, Hadley (WERO):** MassDEP issued an Air Quality Plan Approval to Hadley AD 1 for the installation of an additional 500 KW biogas fired engine at Barstow's Longview Farm, 14 Barstow Lane in Hadley, MA. This Approval includes the existing 300 KW engine which had been previously approved at this facility since new emission limits and new control equipment are being required. Both engines will employ modern sound mitigation equipment and utilize catalytic oxidizers to minimize emissions of products of incomplete combustion.
- **7/6, Town of Montague and Kearsarge Energy, Montague (WERO):** MassDEP issued a post closure use permit to the Town of Montague and Kearsarge Energy approving the construction of a 5.92 MW solar array on the Montague Landfill located off of Sandy Lane.

(Photo: Montague Solar Array under construction 12/17)

- **8/3, Multiple Solar on Landfill Projects (WERO):** MassDEP issued permit modifications to five solar on landfill projects in the region allowing a reduction in the frequency of site inspections. These projects include the Citizens Energy projects in Springfield, Westfield, Agawam, and Chicopee, as well as the Ahana Renewables project in Easthampton.
- **9/5, Town of Lenox Landfill, Lenox (WERO):** MassDEP issued permits to the Town of Lenox approving modifications to the landfill solar array as well as approval of the proposed environmental monitoring network installation.
- **9/11 DONG Energy, Chicopee (WERO):** MassDEP conducted a pre-permitting call with DONG energy to discuss a proposed project to be located in Chicopee. This project would thermally process Municipal Solid Waste to create a syn-gas for combustion.

- **9/15, Rockwood AG-Grid, LLC, Granville (WERO):** MassDEP issued a Non-Major Comprehensive Plan Approval to Rockwood AG-Grid, LLC for the installation and operation of an anaerobic digester and associated engine and flare at 355 Granby Road in Granville. The anaerobic digester will process onsite manure production and imported source separated organics (SSO). The generated gas from the digester will be combusted in a 480 KW generator to export power to the grid. Any excess gas will be combusted in a 6.6 MMBtu/hr shrouded utility flare. The engine and flare will comply with MassDEP farm BACT guidance.
- **10/2, Town of South Hadley and Holyoke Sanitary Landfill, Inc., S. Hadley & Granby (WERO):** MassDEP issued permits approving the construction of an overland pipeline that will carry landfill gas from the South Hadley Landfill to the gas to energy facility currently located at the Granby landfill.
- **10/4, Belden AG-Grid, LLC, Hatfield (WERO):** MassDEP issued a Non-Major Comprehensive Plan Approval for the installation and operation of an anaerobic digester and associated engine and flare at 9 Depot Street in Hatfield. The anaerobic digester will process onsite manure production and imported source separated organics (SSO). The generated gas from the digester will be combusted in a 300 KW generator to export power to the grid. Any excess gas will be combusted in a 6.6 MMBtu/hr shrouded utility flare. The engine and flare will comply with MassDEP farm BACT guidance.

Northeast Region 2017 CERP Summary

- **12/29/16, Rumford Avenue Landfill, Newton (NERO):** BAW's Solid Waste Section issued a Post-Closure Use Permit to the City of Newton and Rumford Avenue Solar, LLC (RAS), approving a proposed 2.137-megawatt (MW) solar photovoltaic power generating facility on a 9-acre portion of the closed Rumford Avenue Landfill located in Newton. The approval also allows the relocation of the City's existing DPW activities at the site to a 2-acre portion of the landfill. The landfill was capped in 1998. Subject to conditions set forth in the approval, the proposed solar facility will be constructed on the landfill and connected to the Eversource electric utility grid. Through an agreement with the City, RAS will install and operate the solar facility. Construction is expected to begin in early 2017.
- **2/23, Hamilton Landfill, Chebacco Road, Hamilton (NERO):** The BAW Solid Waste Section held a pre-application meeting with representatives of Ameresco and Amec Foster Wheeler to discuss the proposed installation of a solar photovoltaic power generating facility (approximately 1 MW) on portions of the closed Hamilton Landfill located on Chebacco Road in Hamilton. The Landfill was operated by the Town of Hamilton and capping was completed in 2016. The developer and the Town anticipate submitting a post-closure use permit application during the third quarter of 2017. NERO BAW anticipates additional discussion with the Town and the solar developer as the Town moves forward with its proposal.
- **4/11 Haverhill AD 1, LLC, Haverhill (NERO):** BAW's Permit Section issued a Non-Major Comprehensive Plan Approval to Haverhill AD 1, LLC for the construction and operation of an anaerobic digester (AD) system, a combined heat and power (CHP) generator set, and two associated back-up flares at Crescent Farm located on Boston Road in the Bradford section of Haverhill. The proposed project will collect dairy waste and manure from Crescent Farm and other nearby farms, which will be combined with off-farm feedstocks (i.e., source separated organics or SSO), and will be anaerobically digested to produce biogas. Biogas will be combusted in the CHP generator set to produce electricity for use at Crescent Farm, with

surplus electricity sold to the local electrical utility. Solid digested materials will be used for animal bedding, while liquid digested organics will be used as nutrient-rich fertilizer for land application at Crescent Farm and other nearby farms. Haverhill AD 1 LLC is part of Vanguard Renewables.

- **5/2 Haverhill AD 1 LLC, Crescent Farm Anaerobic Digester, Haverhill (NERO):** The BAW Solid Waste Section issued a Draft Recycling, Composting or Conversion (RCC) Permit to Haverhill AD 1, LLC for operation of an anaerobic digestion facility at Crescent Farm in Haverhill. As proposed, Vanguard Renewables (the developer) plans to process manure from the on-site dairy operation at Crescent Farm in an anaerobic digester unit. The facility will also accept an average of 125 tons per day of source-separated food waste and fats, oils and grease from local food suppliers and waste haulers for co-digestion with the manure. The breakdown of these materials will generate biogas for the production of electricity to be utilized on-site and sold back to the utility grid. MassDEP accepted comments on the draft permit decision for 30 days from the date of public notice. The City of Haverhill Board of Health has issued a Noisome Trades Site Assignment for the facility and the operation is also subject to separate Air Quality permitting. Vanguard anticipates construction of the facility in 2017.
- **4/25 Chelmsford Landfill, Swain Road, Chelmsford (NERO):** The BAW Solid Waste Section held a pre-application meeting with representatives of Blue Wave Capital and Kennedy/Jenks to discuss the proposed installation of a solar photovoltaic power generating facility (approximately 1 MW) on portions of the closed Chelmsford Landfill located on Swain Road. The Landfill was operated by the Town of Chelmsford and the site was capped in 1991. The developer anticipates submitting a post-closure use permit application during the summer of 2017. NERO BAW anticipates additional discussion with Blue Wave as the project moves ahead.
- **6/21 Haverhill AD 1 LLC, Crescent Farm Anaerobic Digester, Haverhill (NERO):** The BAW Solid Waste Section issued a Final Permit for a Recycling, Composting or Conversion (RCC) Operation to Haverhill AD 1, LLC for an anaerobic digestion facility at Crescent Farm in Haverhill. As proposed, Vanguard Renewables (the developer) plans to process manure from the on-site dairy operation at Crescent Farm in an anaerobic digester unit. The facility will also accept an average of 125 tons per day of source-separated food waste and fats, oils and grease from local food suppliers and waste haulers for co-digestion with the manure. The breakdown of these materials will generate biogas for the production of electricity to be utilized on-site and sold back to the utility grid. In May 2017, a Draft Permit was issued for public comment. The only comments received during the comment period were from Vanguard. The City of Haverhill Board of Health issued a Noisome Trades Site Assignment for the facility and the operation is also subject to an Air Quality permit issued by the NERO Permit Section. Vanguard anticipates construction of the facility in 2017.

Southeast Region 2017 CERP ACTIVITIES

- **12/27/16 Cohasset Landfill Solar Project, Cohasset (SERO):** BAW Solid Waste Section issued an approval for the installation and operation of a 0.56 megawatt (MW) photovoltaic array (PV) on the site of the former Cohasset Landfill, located on Cedar Street, Cohasset, MA. The landfill solar project was proposed by the Town of Cohasset and CohSolar, LLC and will involve the installation of approximately 1,536 photovoltaic panels on 1.7 acres of the closed and capped Landfill. The former Landfill is located on approximately 8.7 acres of a 43.8 acre parcel and was capped in 1996.

- **3/13/17 Plymouth Wind Noise Protocol (SERO):** SERO BAW and Boston BAW staff met with Con Edison Development representatives and their consultants to discuss the draft protocol to conduct a sound study on the turbines that is required through the Plymouth permitting process. MassDEP provided comments that Con Edison agreed to incorporate in a revised protocol. At their request, SERO will be sharing the revised protocol when it becomes available with a group of concerned Plymouth and Bourne residents.
- **3/23 Wind Turbines Plymouth (SERO):** At the request from aide Lance Lambros from Senator Demacedo's office, BAW Staff and DEP's Legislative Liaison will meet with Plymouth town officials to discuss the planned sound monitoring later in the Spring for the Plymouth wind turbines operated by Con Edison. MassDEP has shared with interested residents the revised protocol for their review and comment. MassDEP will also review the proposed protocol and may provide additional comments. An informal informational meeting has also been scheduled on 3-29-17 with Bourne officials to discuss the planned sound monitoring since Bourne residents have reported noise complaints from these turbines; aide Lambros and DEP's legislative liaison will also participate in this meeting.
- **3/30 Future Generation Wind Turbines - Meeting with Bourne Board of Health (SERO):** BAW's DRD and C&E chief met with the health agent and the chair and vice chair of the Bourne Board of Health to discuss the proposed noise monitoring protocol that is under review. BAW SERO with assistance from BAW Boston are reviewing the proposed protocol. As we conduct our review, we will take into consideration comments received from interested parties, including the Bourne BOH. Once the review is complete later this week, BAW SERO will get back to the proponent, ConEdison, with additional input to ensure that the sound monitoring required under the permitting process by Plymouth is adequate.
- **4/20 MassDEP Earth Fest Electric Vehicles Showcase Event (SERO):** SERO's Regional Office will host an Earth Week event titled Earth Fest Electric Vehicles Showcase in which Secretary Beaton and Commissioner Suuberg will deliver speaking remarks and bring the entire regional DEP team and distinguished legislative and municipal guests together in celebration of Earth Week. The event will also host various electric vehicle and bike vendors, in addition to providing the opportunity for anyone to test drive an eVehicle or an eBike. Participating municipalities with electric vehicles have been invited to showcase their fleet and encourage neighboring communities to consider investing in an electric vehicle.
- **4/19 Bristol Community College Earth Day 2017, Fall River (SERO):** SERO's Regional Director attended BCC Fall River campus Earth Day Event titled "What It Means To Be Green!", an event where BCC Fall River President Sbrega offered Welcome Remarks, and Commissioner Suuberg served as the day's Keynote Speaker. Additional activities included solar panel workshops, an electric vehicles showcase, business and organization expo, and additional speakers. The event had a high turnout rate with a large composition of attendees that included students, environmental organizations, and public/private sector entities. Key messages including exchanges about how the South Coast will be impacted by climate change, and what people are doing to address it.

- **4/20 EEA/MassDEP Electric Vehicle Earth Fest, Lakeville (SERO):** In honor of Earth Day the Southeast Regional Office hosted an electric vehicle & bicycle test drive event where Energy &

Environmental Affairs Secretary Matt Beaton and MassDEP Commissioner Martin Suuberg and legislators including Rep. Carole Fiola (D-6th Bristol), Rep. Keiko Orrall (R-12th Bristol) and Rep. Steven Howitt (R-4th Bristol) recognized 13 SERO municipalities for their leadership and great success in promoting ELECTRIC VEHICLES (EVs) and CHARGING STATIONS in their communities. Local municipalities who have not yet participated in the program and businesses were invited to learn about the programs available and test drive the four electric vehicles and half a dozen electric bicycles on display. MassRides, MorEV, and Voltrek were also in attendance to offer assistance to municipalities and business interested in going green.

- **6/26 Somerset Landfill Solar (SERO):** BAW Solid Waste section met with the Town of Somerset and a representative of the Estate of Myra Velozo Sonnenschein regarding the potential installation of a solar array on the closed and capped Town Landfill. The landfill is partially owned by each party. The post-closure use permit application process and timelines, application informational requirements, financial assurance requirements, and MassDEP experiences with solar application and construction projects were discussed. A follow-up meeting will be held between MassDEP and the Town's selected solar developer and consulting engineer.
- **9/28 Republic Services Landfills, Randolph and Plainville (SERO):** BAW Solid Waste Section Chief attended the grand opening ceremonies for the 4.8 Megawatt (MW) DC photovoltaic (PV) array constructed at the Republic Services Randolph landfill and the 6.0 MW DC PV array constructed at the Republic Services Plainville Landfill. Historically, PV arrays have been permitted and constructed on the flat top plateau area of closed landfills. The PV arrays constructed at these two landfills are the first to be constructed on 3:1 landfill side slopes.
- **10/19 Landfill Solar Green Street Solar Power, Raynham (SERO):** BAW Solid Waste Section met with Green Street Solar Power (GSSP) and their consulting engineer to discuss MassDEP permitting for installation of a 3 MW photovoltaic array on the closed and capped Town of Raynham landfill. SERO discussed the landfill status, permitting pathway, requirement to fully examine the current condition of the landfill, its active gas collection system, the results of environmental program, and the need to provide complete design details, construction methods, engineering calculations and assumption back-up documentation. GSSP stated they would be co-applicants with the Town of Raynham and requested expedited application review by MassDEP
- **11/14 Solar Photovoltaic Array, Somerset (SERO):** BAW Solid Waste Section held a pre-application conference with representatives of BQ Solar to discuss MassDEP permitting for installation of a 3 MW AC photovoltaic array on the closed and capped Somerset landfill. The Somerset Landfill is owned by the Town of Somerset and a private entity, the Velozo family. SERO discussed the landfill status, history, permitting pathway, the requirement to fully examine the current condition of the landfill, and the need to provide complete design details, construction methods, engineering calculations and assumption back-up documentation. BQ Solar requested expedited application review by MassDEP upon submittal.

Central Region 2017 CERP Summary

- **2/21, Jordan Dairy Farm Anaerobic Digester, Rutland (CERO):** The Solid Waste Management Program approved a modification to the Recycling, Composting or Conversion (RCC) Permit for the Jordan Dairy Farm Anaerobic Digester. The original RCC permit, issued on June 2, 2016, allows for the acceptance of onsite generated cow manure and off-site generated organics for the anaerobic digestion at the rate of 125 tons per day. The permit modification allows

greater flexibility in the approved acceptance rate of the incoming organics to allow for seasonal fluctuations. The modification allows for the acceptance of the materials at the facility at a rate of 125 tons per day over a rolling 30 day average with a maximum total acceptance not to exceed 375 tons per day but does not modify the annual acceptance rate of 45,625 tons. The digestion process produces methane that powers an on-site heat and power unit generating electricity for on-site use with any excess to be supplied to the electrical grid. The process also produces a liquid fertilizer for use at the farm.

- **2/23 Ken's Foods, Marlborough (CERO):** MassDEP BAW issued a Limited Plan Approval for the cogeneration engine at Ken's Foods, Inc. in Marlborough. The engine burns biogas generated in the company's onsite wastewater treatment process and was initially approved in 2015. The revised approval adjusts the limits for particulate matter (PM) consistent with other recently issued anaerobic digestion (AD) plan approvals.
- **7/19 Town of Littleton Smart Sewers Discussion (CERO):** CERO and Boston Municipal Services met with Littleton Town Officials and their consultant to discuss the Town's recent $450,000 appropriation for planning and design associated with an innovative approach to wastewater management referred to as "Smart Sewers." The project involves construction of several small, decentralized, onsite wastewater treatment facilities that not only treat wastewater onsite but also utilize Anaerobic Digestion to create electricity and fertilizer. The concept, which is strongly supported by the Charles River Watershed Association, would replace the need for a large traditional facility. The Town is in early design phase and much of the discussion centered on potential funding opportunities. All parties agreed to stay in touch as the project moves forward and permitting begins.
- **10/5 Solar at Shrewsbury Ash Landfill (CERO):** BAW issued a Major Post-Closure Use Permit Approval for the construction of a solar panel array to the Town of Shrewsbury and Kenyon Energy MA Solar 1, LLC. The array will be constructed on Shrewsbury's ash landfill, and will consist of an approximately 4.4 megawatt (DC) ground mounted solar photovoltaic array on the Phases III and IV areas of the capped landfill. A prior permit for a similar project was issued in February, 2016, but the developer was unable to proceed with the project. Permit review was expedited in order for the project to be operational by March 2018.

Bureau of Waste Site Cleanup (BWSC) CERP Summary

- **1/24, (BWSC) Boston, CERP Project Proponent Meeting:** BWSC and MassDEP's CERP Director held a meeting with National Grid's New Energy Solutions group to collaborate on energy storage opportunities at landfills, contaminated land and wastewater/drinking water plants as demonstration projects. National Grid historically developed 4MW's of solar PV on former manufactured gas plant facilities.
- **03/21 (BWSC) Boston-CERP, ASTSWMO-USEPA REPOWER Workshop:** BWSC staff attended and presented at the Association of State and Solid Waste Management Officials and United States Environmental Protection Agency's RE-Powering America's Land Initiative Workshop titled "State Renewable Energy Power Workshop". The goal of the Workshop was to educate state regulators on the redevelopment and reuse of contaminated land and landfill properties as viable renewable energy development opportunities. The event was co-hosted by ASTSWMO and USEPA in Washington D.C. Several state environmental agencies, municipalities and USEPA staff participated in the workshop.

- **5/03 (BWSC) Boston, CERP Project Proponent Meeting:** BWSC CERP staff will meet with Sustainable Energy Advantage LLC (SEA) an analytical and support firm providing strategy, policy, marketing, negotiation, product development, and pricing information for the wholesale and retail renewable electricity businesses. SEA is interested in assessing the technical potential for contaminated/brownfield sites across Massachusetts to host new solar development beneath DOER's new Solar Massachusetts Renewable Target (SMART) program, which is estimated to launch in March 2018.
- **05/16 (BWSC) Boston, Massachusetts Clean Energy Day:** BWSC staff attended the annual Massachusetts Clean Energy Day event at the State House. The event showcases "the growing vitality of the clean energy industry and the importance of consistent policy support as a means of catalyzing the state's - and our regions – economy." Speakers at the event included the Massachusetts Secretary of Energy and Environmental Affairs, the Co-Chairs of the Joint Committee on Telecommunications, Utilities, and Energy, the Massachusetts Clean Energy Center (CEC) Chief Executive Officer, and Officers of the Northeast Clean Energy Council.
- **06/12&13 (BWSC) Chicago, IL, TRC Companies Developing Solar on Landfills and Brownfields:** BWSC-CERP staff attended, and was an invited presenter, at this two-day conference hosted by TRC Companies focusing on the development of solar photovoltaics on Landfill and Brownfield properties for brownfield/landfill owners and renewable energy developers. Participants at the conference engaged in planned mini-meetings about potential opportunities and collaboration and targeted seminars and learning opportunities designed specifically for each group. Landowners learned how to turn brownfield liabilities into clean energy assets, while solar developers learned the ins and outs of developing on brownfields. BWSC-CERP participated both as a speaker in the solar developer track on state polices that affect "brightfield" development, as well as, a table sponsor providing Massachusetts specific development information to multiple solar developers from across the country. USEPA's RE-Powering America's Land Program, municipal and state agencies, land owners and solar developers all participated in the conference.
- **06/15 (BWSC) Chelmsford, NEWMOA Annual States/EPA Brownfields Programs Meeting:** BWSC-CERP staff attended, and was an invited presenter, at this one day meeting hosted by NEWMOA focusing on Northeast Regional states Brownfield programs and policies. BWSC-CERP presented its "Massachusetts Climate Change Site Vulnerability Mapping and Analysis" presentation to the group focusing on climate change mitigation and adaptation measures including greener cleanup mitigation approaches and energy efficient and/or renewable application adaptation measures.
- **09/18 (COMM, BWSC, BWR) Boston, CERP State-to-State Dialogue:** MassDEP's CERP Director and CERP representatives from the Bureau of Waste Site Cleanup and the Bureau of Water Resources met with representatives from the Illinois Environmental Protection Agency (ILEPA) and the Illinois Office of Energy, which is now part of the ILEPA, to discuss lessons learned in Massachusetts from its work with energy as a component of environmental protection. Illinois reached out to Massachusetts to begin a dialogue around its work generally and specifically in projects seeking energy efficiency gains in wastewater treatment and projects that bring energy assurance/resiliency together with energy storage. Illinois also reached out to the Commissioner of the Massachusetts Department of Energy Resources.
- **09/26 (BWSC) Newton, LSPA September Kick-Off Meeting with MassDEP Updates:** Bureau of Waste Site Cleanup (BWSC) staff attended this annual meeting of the Licensed Site Professional Association (LSPA) to provide updates on the Bureau's priorities and plans for the year ahead, as well as, announce its 2017 Greener Cleanup Leadership Recognition award

recipient(s) at the meeting. The Greener Cleanup Leadership recognition Award is given to the person/entity/project that demonstrates professional performance in identifying, selecting, prioritizing and implementing "Greener Cleanup" principles and practices that reduce the reduce the overall net environmental footprint of assessment and remedial response actions conducted in accordance with the MCP by eliminating or reducing the total energy use, air pollutant emissions, greenhouse gases, water use, materials consumption, and ecosystem and water resources impacts. The 2017 awards were presented to Westover Air Reserve Base and its Licensed Site Professional Mr. James Soukup for their use of solar PV, recycled/repurposed materials and local labor, etc. to address a release of hundreds of gallons of aviation fuel. LSPA: MassDEP Honors LSP Association Member With Greener Cleanups Award

- **10/16 (BWSC) Amherst, AEHS Soils, Sediments, Water and Energy Conference:** MassDEP's Bureau of Waste Site Cleanup (BWSC) will be participating in a 4-Hour workshop titled "Sustainable Remediation: Frameworks, Tools, and Case Studies". The workshop will begin with comments on the Greener Cleanups component of the Massachusetts Contingency Plan (MCP) and an introduction to the ASTM Standard Guide for Greener Cleanups. It will then provide a walk-through of sustainable remediation concepts, approaches and stakeholder values along with case studies and tool explorations.
- **10/18 (BWSC) Amherst, AEHS Soils, Sediments, Water and Energy Conference:** MassDEP's Bureau of Waste Site Cleanup (BWSC) is hosting a 3-Hour platform session titled "Advancing the Clean Energy Economy in Massachusetts". The session will include presentations from the University of Massachusetts Clean Energy Extension and the Massachusetts Clean Energy Center. A Clean Energy Results Program (CERP) sponsored booth will also be present at the conference.
- **10/18 (BWSC) Amherst, AEHS Soils, Sediments, Water and Energy Conference:** MassDEP's Bureau of Waste Site Cleanup (BWSC) and the Bureau of Policy & Planning along with the Sustainable Remediation Forum (SURF) and environmental consultants will be participating in a 3-Hour platform session titled "Climate Change and Resiliency Within Sustainable Remediation". The session will include an introduction to Massachusetts Executive Order 569 – Establishing an Integrated Climate Change Strategy for Massachusetts, Massachusetts's Climate Change Mitigation and Adaptation for Site Assessment and Remediation as well as an overview ASTM's Standard Guides on Climate Resiliency Planning and Strategy and Climate Resiliency in Water Resources.
- **11/21 (COMM, BWSC) Boston, CERP State-to-State Dialogue:** MassDEP's CERP Director and CERP representative from the Bureau of Waste Site Cleanup met with representatives from the Hawaii State Energy Office Department of Business, Economic Development, and Tourism to discuss lessons learned and experiences in Massachusetts from its work siting clean energy on contaminated lands and its associated website resources as it embarks on a similar effort in Hawaii. Hawaii reached out to MassDEP through its contacts at the Massachusetts Department of Energy Resources.
- **11/29 (BWSC) Westwood, LSPA Young Professionals Event:** Bureau of Waste Site Cleanup (BWSC) staff will attend this event hosted by the Licensed Site Professional Association (LSPA) Young Professionals with a focus on Greener Cleanups. BWSC will be presenting an educational overview of the Greener Cleanup guidance document as well as the ASTM Standard Guide for Greener Cleanups. A facilitated discussion on greener cleanup concepts and implementation will follow using hypothetical case studies and real-world examples.

Boston CERP Summary

- **1/24, (BWSC) Boston, CERP Project Proponent Meeting:** BWSC and MassDEP's CERP Director held a meeting with National Grid's New Energy Solutions group to collaborate on energy storage opportunities at landfills, contaminated land and wastewater/drinking water plants as demonstration projects. National Grid historically developed 4MW of solar PV on former manufactured gas plant facilities.
- **7/24 GAP II Grant Survey, CERP:** The CERP program released a survey to operators of drinking water and wastewater facilities that will be used to determine how many facilities have conducted energy audits that have identified energy efficiency and renewable energy projects that have not been fully implemented and would save facilities energy and reduce costs, as well as assist the facilities in operating more efficiently. The survey response deadline is August 23, 2017. The CERP program will use the results of the survey to assess the number of projects that may be ready to benefit from grant funding during the fall to support clean energy and improve the efficiency of our water infrastructure.
- **10/13 MassDEP** issued a press release announcing a second round of CERP Gap Funding grants intended to support clean energy and improve the efficiency of water infrastructure at facilities across the Commonwealth. Up to $3 million in grants will be made available to municipal drinking water and wastewater treatment facilities to help reduce their energy use, operating costs and carbon footprint. The Gap Funding grant program is designed to expedite implementation of previously assessed energy efficiency and clean energy generation projects at municipal facilities. Grant applications are due by November 24, 2017.