

Town of Enfield Energy Saving Performance Contract with Honeywell, Inc.

Project Summary September 17, 2018



Enfield Department of
Public Works

Honeywell

Presentation summary

- Project overview
- Highlights and benefits
- Project financials
- Results to date
- Next steps



Project Timeline

- July 2014: Town selects Honeywell as ESPC vendor through competitive bid process
- Aug to Nov 2014: Honeywell Preliminary Energy Audit
- Jan to July 2015: Honeywell Investment Grade Audit
- Dec 2016: Town passes referendum on second try and construction contract signed with Honeywell
- April 2017 to March 2018: Construction
- April 2018: Final project acceptance and first year of performance guarantee begins



Savings Guarantee



- Honeywell savings guarantee:
 - Annual energy use associated with upgraded systems will be less than prior to project
 - Combined annual savings will on average exceed amortized contract cost
- Annual O&M savings from projects are based on historical expenditures
- Electric and water savings are verified one time post construction from new lighting & water conservation devices
- Gas savings are verified annually over contract term using utility gas meter data



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Project Scope Summary

ESM No.	ESM Description	Emergency Medical Services	Enfield Senior Center	Pearl Street Library	Central Library	Lamagna Activity Center	Enfield Town Hall	Department of Public Works	Enfield Police Department	Adult Day Care	Family Resource Center	Building and Grounds	JFK Middle School	Eli Whitney School	Hazardville Memorial School	Henry Barnard School	Edgar Parkman School	Prudence Crandall School	Enfield Street School	Thomas Alcorn School	Harriet Beecher Stowe School	Head Start	Street Lighting
1	Lighting and Lighting Controls (LED)	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	Street Lighting Upgrades																						X
3	Boiler Replacements & Pump Upgrades				X		X			X				X			X		X				
4	Replace Multi-Zone AHU & Cooling System				X																		
5	Building Management System Upgrades		X		X	X	X	X		X	X			X	X	X	X	X	X	X	X	X	X
6	Building Envelope Improvements	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X
7	Water Conservation	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X
9	Desktop Computer Power Management	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X	X	X	X	X	X
10	Computer Peripheral Power Management													X	X	X	X	X	X	X	X		
11	Plug Load Power Management													X	X	X	X	X	X	X	X		
12	Pipe Insulation			X		X	X							X		X	X	X	X	X	X		



Mechanical Upgrade Highlights



- Library: New HVAC systems providing gas-source heating and central air conditioning
- Town Hall: New high efficiency boiler plant and control points reduce cost and improve comfort
- Eli Whitney / Edgar Parkman / Enfield Street Schools & Adult Daycare: Replacement of end-of life boilers



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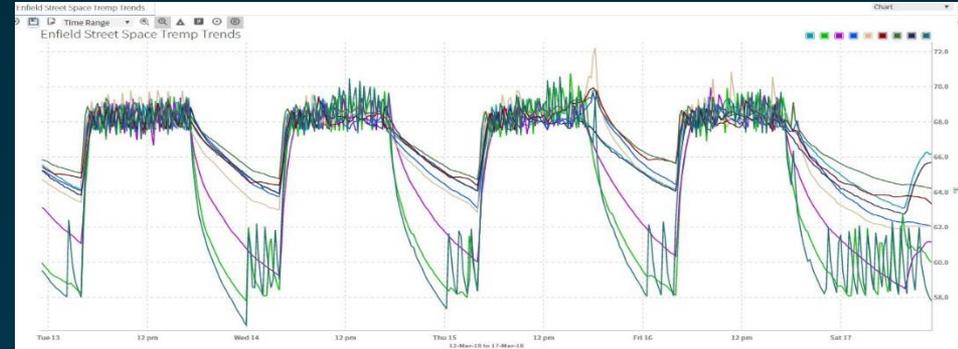
Honeywell

Lighting Highlights

- New LED streetlights town-wide: 50% lower energy use and 10-year+ service life without maintenance
- New LED lights at most properties: lower energy use than fluorescent, better light quality, and less maintenance
- Motion sensing controls installed in appropriate locations



Building Control Highlights



- New integrated “front end” ties all buildings together on a common platform for ease of management
- All systems fully re-commissioned for better control and function, including fixing any defective components
- New energy management strategies added, e.g. unoccupied shutdown/reset & ventilation management



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Summary of Project Benefits

- 22% combined reduction Town & School energy use
- Better control of HVAC systems and improved occupant comfort / indoor air quality
- Fewer emergency service calls where mechanical and control systems updated or replaced
- Fewer streetlight outages and reduced maintenance for interior lighting with new, long-life LEDs
- All Honeywell work reviewed by third party commissioning agent to ensure installation quality



Financial Summary

- Total Honeywell project cost: \$8,989,771
- Total incentives from Eversource: \$1,690,000
- Net cost of project to Town: \$7,299,771
- Contract duration: 15 years
- First year guaranteed savings: \$ 651,722
- Annual M&V service charges: \$ 47,000



Results to Date

- Electric savings showing surplus above projections based on post construction verification
- Gas savings not verified until next heating season

ESM	Electric Savings		
	Predicted (kWh/Yr)	Verified (kWh/Yr)	Deviation %
Lighting and Controls	1,157,671	1,329,903	116%
Street Lighting	1,197,548	1,317,303	110%
Boiler Replacements & Pump Upgrades	(4,314)	(13,068)	-2518%
Replace Multi-Zone AHU & Cooling System	23,664	24,702	104%
Building Management System Upgrades	5,002	5,259	105%
Building Envelope Improvements	9,041	10,574	126%
Water Conservation	1,397	1,397	100%
Desktop Computer Power Management	85,806	148,118	173%
Computer Peripheral Power Management	14,175	14,175	100%
Plug Load Power Management	6,107	10,193	167%
Total Program	2,496,095	2,848,556	115%



Results to Date

Energy Savings Method (ESM)	Guaranteed Utility Savings*	Verified Utility Savings**
Building Lighting & Lighting Controls	\$198,294	\$226,884
Streetlights	\$268,544	\$288,423
Boiler Replacements & Pump Upgrades	\$17,908	\$16,455
Multi-Zone AHU & Cooling System	\$17,724	\$17,897
Building Management System Upgrades	\$76,158	\$76,201
Building Envelope Improvements	\$25,068	\$25,322
Water Conservation	\$16,484	\$16,484
Desktop Computer Power Management	\$14,244	\$24,588
Computer Peripheral Power Management	\$2,353	\$2,353
Plug Load Power Management	\$1,014	\$1,692
Pipe Insulation	\$13,932	\$13,932
TOTAL	\$651,723	\$710,231
* All utilities: Electric, gas, oil, water		
** Gas and oil to be verified 18-19 heating season		



Looking Forward...

- Town must operate / maintain equipment consistent with agreed to standards to maintain savings
- Honeywell will review equipment trend data and utility use quarterly and report findings to Town
- Honeywell will prepare annual M&V reports to benchmark savings achieved against guarantee
- Town consultant will review Honeywell reports to independently confirm contract compliance

