

## RFQ for Healthy Buildings and Comprehensive Energy Management Services



Finance Committee  
August 17, 2021

# Presentation Agenda

- Introduction
- Project Overview
- Project Goals
- Project Scope
- Q&A



# Public Sector Challenges

**Rising operating costs**

**Escalating energy costs**



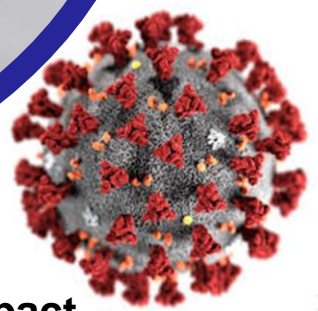
Reduced capital funding

Deferred maintenance

Renewable energy goals

Creative funding options needed

Aging infrastructure



**Overburdened tax base**

**Pandemic Impact**



# Project Overview

- What is an Energy Savings Performance Contract (ESPC)?
- Why is Easthampton pursuing an ESPC?
- When is the project projected to commence?
- Where will this project take place - buildings in scope?
- How is an ESPC procured?



# Energy Savings Performance Contract

## ESPC:

- Under MGL Department of Energy Resources (DOER) procurement
- ESCO Partnership
- Customer defined scope and selection
- Turn-Key project
- Time and cost-effective method for completing comprehensive projects
- Performance guarantee

## Benefits to Easthampton:

- Upgrade Indoor Air Quality (IAQ) given the pandemic impact
- Facilities infrastructure improvements
- Prevent/solve deferred maintenance
- Drive operational efficiency and cost savings
- Positive financial impacts
- Environmental benefits - sustainability and renewable energy
- Guarantee Easthampton's energy savings and solar production



# Easthampton's ESPC Procurement

## Massachusetts Process

- MA Department of Energy Resources (DOER) RFQ
- DOER, established by M.G.L. c. 25A, § 11i

## Easthampton's DOER Timeline

- Notification to the DOER: September 2020
- RFQ published: October 2020
- Pre-submission Conference and Facility Tour: October 2020
- ESCO response submission: November 2020
- Easthampton evaluations/ESCO interviews: December 2020
- ESCO selection: January 2021 – Honeywell



# Easthampton: Infrastructure Focus

## Buildings in Scope:

- Municipal Building
- Public Safety
- Water Department
- Wastewater Plant
- High School

## Timeline Summary:

- Construction estimate: Oct 2021 – Sep 2022
- Prioritize timing on Indoor Air Quality and seasonal impacted measures



# Project Goals

## Balanced Project which Promotes:

- Public Safety stemming from Pandemic Impact
- Healthy Buildings – Indoor Air Quality and mechanical equipment upgrades
- Energy Reduction/Cost Avoidance/Deferred Maintenance
- Sustainability – Positive Environmental Impact and Solar Energy





# What Are We Buying?

## Indoor Air Quality (IAQ) Improvements:

- Upgrades to Indoor Air Quality (IAQ) given the pandemic impact at the following buildings:
  - High School
  - City Hall
  - Public Safety
  - Water Department
- Installing Ultra-violet air cleaning technologies
- Healthy Buildings Sensors & Dashboard with IAQ metric tracking and reporting

**[Next slide shows Healthy Buildings Dashboard Visual example]**



# OCCUPANT REASSURANCE HEALTHY BUILDINGS DASHBOARD



**MAKE IT SAFER**  
Real-Time Insights  
Drive Healthier Operations

**SHOW IT'S SAFER**  
Transparent Buildings  
Make Happier Occupants



# What Are We Buying (continued)?

## HVAC Upgrades to Current Deferred Maintenance Issues:

- Chiller replacement at Public Safety with new high efficiency chiller - current equipment is at end of life, failing, ongoing repairs, inefficient
- Replacing existing Constant Volume Air Handling Unit with more efficient Variable Air Volume unit at City Hall - current equipment is at end of life, failing, not effective, ongoing repairs, inefficient

## New Solar at 3 Locations:

- City Hall – roof top solar
- Public Safety – new canopy structure with solar panels
- Wastewater Plant – ground mount solar



## Project Scope \$6.16M

### Energy Conservation Measures (ECMs) per Building:

ECM Description	Total Cost Per Building					
	Public Safety Complex	Municipal Building	Water Department	Wastewater Plant	Easthampton High School	Total
Chiller Replacement	\$ 203,471	\$ -	\$ -	\$ -	\$ -	\$ 203,471
Building Management System & Healthy Building Upgrades	\$ 386,568	\$ 257,331	\$ 61,819	\$ -	\$ 522,941	\$1,228,659
Demand Control Ventilation	\$ -	\$ 11,505	\$ -	\$ -	\$ -	\$ 11,505
Air Handling Unit Replacement & VAV Conversion	\$ -	\$ 812,585	\$ -	\$ -	\$ -	\$ 812,585
Kitchen Hood Controls	\$ -	\$ -	\$ -	\$ -	\$ 32,461	\$ 32,461
De-Stratification Fans with UV Lighting	\$ -	\$ -	\$ -	\$ -	\$ 21,953	\$ 21,953
LED Lighting & Control Upgrades	\$ 94,483	\$ 35,331	\$ 22,292	\$ -	\$ 32,187	\$ 184,292
Building Envelope Improvements	\$ 3,662	\$ 11,774	\$ 3,858	\$ -	\$ 23,920	\$ 43,214
Variable Frequency Drives	\$ -	\$ 15,770	\$ -	\$ -	\$ -	\$ 15,770
Walk-In Cooler & Freezer Controls	\$ -	\$ -	\$ -	\$ -	\$ 12,383	\$ 12,383
Solar Photovoltaic Systems & Electric Vehicle Charging Stations	\$1,337,024	\$ 433,580	\$ -	\$1,598,715	\$ -	\$3,369,318
Computer Power Management	\$ -	\$ 539	\$ -	\$ -	\$ 8,446	\$ 8,985
Investment Grade Energy Audit	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 222,298
<b>Total Project Cost</b>	<b>\$2,025,207</b>	<b>\$1,578,415</b>	<b>\$ 87,968</b>	<b>\$1,598,715</b>	<b>\$ 654,291</b>	<b>\$6,166,894</b>
Owner Controlled Contingency (5% of Project Cost Estimate)						\$ 308,345
<b>Total Bonding</b>						<b>\$6,475,239</b>



# Project Details

## Financial Breakdown:

ECM Description	Total Cost	Rebates YR 1. (One Time Benefit)	Net Cost	Total Annual Energy Cost Savings	Annual Solar Incentive*	Operational Savings
Chiller Replacement	\$ 203,471	\$ 621	\$ 202,850	\$ 584		\$ 5,000
Building Management System & Healthy Building Upgrades	\$ 1,228,659	\$ -	\$ 1,228,659	\$ 3,495		\$ 1,000
Demand Control Ventilation	\$ 11,505	\$ -	\$ 11,505	\$ 590		\$ -
Air Handling Unit Replacement & VAV Conversion	\$ 812,585	\$ 3,412	\$ 809,174	\$ 973		\$ 5,000
Kitchen Hood Controls	\$ 32,461	\$ 2,618	\$ 29,843	\$ 1,098		\$ -
De-Stratification Fans with UV Lighting	\$ 21,953	\$ 1,344	\$ 20,609	\$ 534		\$ -
LED Lighting & Control Upgrades	\$ 184,292	\$ 22,123	\$ 162,169	\$ 11,378		\$ 500
Building Envelope Improvements	\$ 43,214	\$ 4,890	\$ 38,325	\$ 2,375		\$ -
Variable Frequency Drives	\$ 15,770	\$ -	\$ 15,770	\$ 1,754		\$ -
Walk-In Cooler & Freezer Controls	\$ 12,383	\$ 2,197	\$ 10,186	\$ 822		\$ -
Solar Photovoltaic Systems & Electric Vehicle Charging Stations	\$ 3,369,318	\$ -	\$ 3,369,318	\$ 87,931	\$ 70,803	
Computer Power Management	\$ 8,985	\$ 4,979	\$ 4,006	\$ 7,444		\$ -
Investment Grade Energy Audit	\$ 222,298	\$ -	\$ 222,298	\$ -		\$ -
<b>Sub-Total</b>	<b>\$ 6,166,894</b>	<b>\$ 42,183</b>	<b>\$ 6,124,711</b>	<b>\$ 118,978</b>	<b>\$ 70,803</b>	<b>\$ 11,500</b>

\* Note: Solar Incentive declines annually based on solar production degradation. 20 YR annual average of incentive estimated at \$67,538



# Solar Summary: 20 YR Performance (Estimate)

Incentives and Energy Savings occur every year for 20 years

			kWh Production		
Building	Mount Type	DC Rating of System [kW]	Year 1	Year 20*	20 YR Avg*
Public Safety Complex	Canopy	190.1	192,231	174,768	183,368
Municipal Building	Roof Mount	98.9	115,499	105,006	110,174
Waste Water Plant	Ground Mount	371.5	413,618	376,043	394,548
<b>Total</b>		<b>660.5</b>	<b>721,347</b>	<b>655,817</b>	<b>688,089</b>

\*assume a reduction of 0.5% each year

			SMART Incentive		
Building	Incentive (\$/kWh)		Year 1	Year 20	20 YR Avg
Public Safety Complex	\$ 0.1391		\$ 26,737	\$ 24,308	\$ 25,505
Municipal Building	\$ 0.0983		\$ 11,352	\$ 10,321	\$ 10,829
Waste Water Plant	\$ 0.0791		\$ 32,713	\$ 29,741	\$ 31,205
<b>Total</b>			<b>\$ 70,803</b>	<b>\$ 64,371</b>	<b>\$ 67,538</b>

Energy Production Dollar Value*				
ECM		Year 1	Year 20	20 YR Avg
Solar Utility \$ Savings		\$ 87,931	\$ 154,187	\$ 118,137

\*includes degredation of 0.5% and escalation of 3.0% each year



# Project Summary and Assumptions

Summary	
Estimated Energy Projects Cost	\$6,166,894
Owner Controlled Contingency (5% of Project Cost Estimate)	\$308,345
<b>Total Bonding</b>	<b>\$6,475,239</b>
Upfront Capital Contribution	\$0
Rebates (Utility - YR 1 only)	\$42,183
Inflation Rate	3.00%
Estimated Interest Rate on Bond	2.00%
Total Financed Years	20
Payments per Year	1



# Project Cost vs Return (Estimate)

## Cash flows occur every year for 20 years

<b>Project Costs:</b>	<b>Year 1</b>	<b>Year 5</b>	<b>Year 10</b>	<b>Year 15</b>	<b>Year 20</b>	<b>Total</b>
Payments (Debt Service)	\$377,147	\$377,147	\$377,147	\$377,147	\$377,147	\$7,542,940
M&V	14,404	16,211	18,793	21,787	25,257	387,029
<b>TOTAL</b>	<b>391,551</b>	<b>393,358</b>	<b>395,940</b>	<b>398,934</b>	<b>402,404</b>	<b>7,929,969</b>
<b>Project Revenue Sources:</b>						
Energy Cost Avoidance (excl solar)	\$31,048	\$34,944	\$40,510	\$46,962	\$54,442	\$834,259
Operational Cost Avoidance	\$11,500	\$12,943	\$15,005	\$17,395	\$20,165	\$309,009
Solar Energy Cost Avoidance	\$87,931	\$98,967	\$114,730	\$133,003	\$154,187	\$2,362,737
Solar Incentive	\$70,803	\$69,397	\$67,680	\$66,004	\$64,371	\$1,350,768
<b>TOTAL</b>	<b>\$201,281</b>	<b>\$216,252</b>	<b>\$237,924</b>	<b>\$263,365</b>	<b>\$293,166</b>	<b>\$4,856,773</b>
<b>ANNUAL CASH FLOW</b>	<b>(\$190,269)</b>	<b>(\$177,106)</b>	<b>(\$158,016)</b>	<b>(\$135,569)</b>	<b>(\$109,238)</b>	<b>(\$3,073,197)</b>
<b>Cumulative Total</b>	<b>(\$190,269)</b>	<b>(\$918,987)</b>	<b>(\$1,748,494)</b>	<b>(\$2,472,675)</b>	<b>(\$3,073,197)</b>	<b>(\$3,073,197)</b>
<b>City Cost</b>	<b>Year 1</b>	<b>Year 5</b>	<b>Year 10</b>	<b>Year 15</b>	<b>Year 20</b>	<b>Total</b>
Capital Cost Avoidance	\$141,311	\$141,311	\$141,311	\$141,311	\$141,311	\$2,826,215
Solar Capital Budget	\$50,588	\$50,588	\$50,588	\$50,588	\$50,588	\$1,011,751
<b>Total</b>	<b>\$191,898</b>	<b>\$191,898</b>	<b>\$191,898</b>	<b>\$191,898</b>	<b>\$191,898</b>	<b>\$3,837,966</b>
<b>ANNUAL CASH FLOW</b>	<b>\$1,629</b>	<b>\$14,792</b>	<b>\$33,882</b>	<b>\$56,329</b>	<b>\$82,660</b>	<b>\$764,769</b>
<b>Cumulative Total</b>	<b>\$1,629</b>	<b>\$40,505</b>	<b>\$170,489</b>	<b>\$405,799</b>	<b>\$764,769</b>	<b>\$764,769</b>





# City Cost Detail (Estimate)

## All cash flows occur every year for 20 years

City Cost	Year 1	Year 5	Year 10	Year 15	Year 20	Total
Capital Cost Avoidance	\$141,311	\$141,311	\$141,311	\$141,311	\$141,311	\$2,826,215
Solar Capital Budget	\$50,588	\$50,588	\$50,588	\$50,588	\$50,588	\$1,011,751
<b>Total</b>	<b>\$191,898</b>	<b>\$191,898</b>	<b>\$191,898</b>	<b>\$191,898</b>	<b>\$191,898</b>	<b>\$3,837,966</b>

### City Cost Detail: Capital Cost Avoidance

ECM Description	Total Cost	Rebates YR 1. (One Time Benefit)	Net Cost	Total Annual Energy Cost Savings	Annual Solar Incentive*	Operational Savings	Justification
Chiller Replacement	\$ 203,471	\$ 621	\$ 202,850	\$ 584		\$ 5,000	Pandemic Impact - Public Safety IAQ and Air Conditioning
Building Management System & Healthy Building Upgrades	\$ 1,228,659	\$ -	\$ 1,228,659	\$ 3,495		\$ 1,000	Pandemic Impact - Public Safety IAQ
Demand Control Ventilation	\$ 11,505	\$ -	\$ 11,505	\$ 590		\$ -	Pandemic Impact - Public Safety IAQ
Air Handling Unit Replacement & VAV Conversion	\$ 812,585	\$ 3,412	\$ 809,174	\$ 973		\$ 5,000	Pandemic Impact - Public Safety IAQ and HVAC replacement
Kitchen Hood Controls	\$ 32,461	\$ 2,618	\$ 29,843	\$ 1,098		\$ -	EHS Kitchen and Occupant Safety
De-Stratification Fans with UV Lighting	\$ 21,953	\$ 1,344	\$ 20,609	\$ 534		\$ -	EHS Pandemic Impact - Public Safety IAQ
<b>Sub-Total</b>	<b>\$ 2,310,634</b>	<b>\$ 7,995</b>	<b>\$ 2,302,639</b>	<b>\$ 7,275</b>		<b>\$ 11,000</b>	
Annual Cost to Budget	\$ 141,311						

### City Cost Detail: Solar Capital Budget

ECM Description	Total Cost	Rebates YR 1. (One Time Benefit)	Net Cost	Total Annual Energy Cost Savings	Annual Solar Incentive*	Operational Savings	Justification
Solar Photovoltaic Systems & Electric Vehicle Charging Stations	\$ 3,369,318	\$ -	\$ 3,369,318	\$ 87,931	\$ 70,803		Sustainability and Renewable Energy Initiative
Annual Financing	\$ 206,056						
Estimated Annual Solar Incentives and Savings	\$ 155,469						
Annual Cost to Budget	\$ 50,588						
<b>Total Annual Cost to Budget</b>	<b>\$ 191,898</b>						

\* Note: Solar Incentive declines annually based on solar production degradation. 20 YR annual average of incentive estimated at \$67,538



# Project Performance Guarantee

## Annual Measurement and Verification to ensure Easthampton receives:

- YR 1 Savings \$31,048
- YR 1 Operations and Maintenance Savings \$11,500
- YR1 Solar Savings on Production: \$87,931
- Total YR1 Guaranteed Savings: \$130,479
  
- If savings shortfall results (less than guaranteed) Honeywell reimburses City for difference
- If excess savings is achieved, Easthampton keeps all savings



# Source of Funds

## Project Funding Strategy:

- Bond
- Market Conditions

## Possible Cost Offsets:

- Utility Rebates (YR 1)
- Energy Cost Avoidance (excl solar)
- Operational Cost Avoidance
- Solar Energy Cost Avoidance
- Solar Incentive
- Stimulus funds:
  - ESSER (school specific)
  - ARPA



# Easthampton and Honeywell Project Partnership

## Ongoing Process

- Project update meetings:
  - Mayor LaChapelle
  - Jen Gallant
  - Greg Nuttelman
  - Michael Owens
- Comprehensive engineering analysis of buildings:
  - Preliminary Audit Analysis – Completed in Feb.
  - Draft Technical Audit Report – Completed in Apr.
  - Optimized Investment Grade Audit - Completed in July
- Identify improvements:
  - Capital renewal
  - Indoor Air Quality (IAQ)
  - Energy savings
  - Energy production
  - Operational savings
  - Sustainability impact – carbon reduction



# Honeywell Qualifications

## Company

- Fortune 100 Global entity – US Headquartered
- Market Capitalization \$155.6 Billion (7/13/21 Market Close)

## Massachusetts – local presence

- Strong regional team experience and support structure
- 325 employees
- 5 office locations
- Contribute to local economy, \$22M supplies purchased annually
- 50 completed ESPC projects
- \$150M in guarantees
- \$300M in purchases and contracts



# Proven MA ESPC Performance



*“I would strongly recommend Honeywell as a performance contracting company. We have found Honeywell to be a world class company, a true partner and trusted resource to the City of Worcester over the years.”*

Ed Augustus, City Manager, City of Worcester



**We Are Excited to Be Your Partner: Team Easthampton**



# Thank You



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