



Paul St. Cyr
Commissioner of Public Works

MEMORANDUM

TO: Thomas A. Golden, Jr., City Manager

FROM: Katherine Moses, Energy Manager

CC: Paul St. Cyr, Commissioner of Public Works

DATE: September 12, 2023

SUBJECT: **INFORMATIONAL COMMUNICATION** – Update on Solar Development
Across Municipal Portfolio

Background:

Due to the rising cost of energy over the past several years and emissions reduction goals set by the Commonwealth of Massachusetts, the Sustainability team has been investigating various solutions to help curb energy costs while meeting climate goals. One of the solutions recommended was to develop additional solar across our municipal portfolio. In September 2022, the City released a Request for Information to determine where additional solar potential might exist. Based on responses received, there were 21 sites identified for future potential solar installations. In order to move these projects forward, the City Council Sub-Committee for Technology and Utilities on February 21, 2023, recommended engaging with Power Options (MGL Ch 164, Sec 137) and their solar vendor, Solect Energy, to allow for expedited procurement and project development. The purpose of this informational communication is to update City Council on developments since that time.

Updates/Progress:

Letter of Intent

Initial solar estimates were based on a high-level portfolio overview. Since the time of those estimates, Solect Energy scheduled site visits to verify and document roof conditions; completed additional analyses on factors that could limit solar output; conducted an analysis of utility bills and trends; optimized solar sizing to maximize benefit for the City of Lowell; and prepared pro-forma calculations to provide for more refined estimates of system sizing, incentive potential, savings potential, and other pertinent information to allow further development. These calculations were initially performed for Schools and Parking Facilities that have solar potential because those represent two of the City's largest energy users where solar savings could have the most significant impact. A separate process will be conducted to consider additional municipal facilities.

The analysis conducted by Solect allowed them to prepare a Letter of Intent (LOI) that the City Manager signed on July 18, 2023. This LOI represents a good faith agreement that allows Solect to move to deeper engineering analysis and to reserve space for the solar projects in the MA SMART incentive program, as well as utility interconnection agreements. The LOI does not obligate Lowell to move forward on projects that are financially or technically disadvantageous. A summary of projects included in the LOI is found below.

Of the 14 facilities remaining in the LOI, there are projects in different stages of development. Six of the facilities either have suitable roof structures or will have such roof structures within the next year. The projects are likely to be installed by the end of calendar year 2025.

Another set of projects require solar ready roof structures in order to support renewable energy systems. In the FY 24 budget, the Commonwealth created a \$50 million Green School Works program. This is a competitive grant program for K-12 public schools and districts to install or maintain clean energy infrastructure and includes rooftop repair or replacement to prepare for solar projects. Although guidelines are still being developed for the grant program, by completing pre-construction analysis, reserving SMART incentive space, and seeking interconnection agreements, Lowell will be at a competitive advantage to participate in such programs. If successful in the grant program, projects should be able to be completed in calendar year 2026.

Parking Facility projects, since they are expected to be solar canopies, require deeper analysis and planning before moving them forward. Such planning is on-going.

Facility	Solar System Size (KW)	Estimated Year 1 Clean Energy Production (kWh)
Projects Expected to Have Solar Ready Roofs Within the Next Year		
New LHS Gym/Freshman Academy	410	483,000
McAuliffe Elementary School	238	275,000
Pyne Arts School	274	329,580
Robinson Middle School	329	382,000
Wang Middle School	349	400,000
Washington Elementary School	95	115,510
Projects Where Solar Ready Roofs Are Needed		
Daley Middle School	321	377,890
Lincoln Elementary School	262	301,000
Murkland Elementary School	220	260,900
STEM Academy	358	414,800
Stoklosa Middle School	317	367,880
Projects Which Require Deeper Engineering/Planning		
Ayotte Garage	710	791,350
Early Garage	376	420,160
Lower Locks Garage	376	420,160
TOTALS	4,635	5,239,320

If all systems are developed as planned, over the next several years, the City's total installed solar capacity will increase nearly 6-fold over current capacity. If all solar systems are developed as currently planned, this will also help the City of Lowell avoid 52,200 tons of greenhouse gas emissions over the lifetime of the systems. Overall, the term savings for the projects are expected to be between **\$5.6 million** and **\$7.9 million**. The variation in savings depends on what SMART block projects are enrolled in and whether a 30% or 40% Investment Tax Credit (ITC) is available for the projects. Guidance is still being developed around the ITC as a result of updates in the Inflation Reduction Act. Savings may also vary, if: utility service upgrades are required; utility transformer upgrades are required; utility group studies are needed; or if environmental or hazmat remediation is needed. Savings will continue to be refined in the coming months.

The Sustainability team looks forward to continuing to move Lowell forward toward a cleaner future and would be happy to provide additional updates on solar development across our portfolio, as desired by City Council.