



Christine McCall
Assistant City Manager/DPD Director

MEMORANDUM

TO: Eileen M. Donoghue, City Manager *EMD*

FROM: Christine McCall, Assistant City Manager/DPD Director

DATE: February 1, 2022

SUBJECT: MOTION OF 1/18/22 BY COUNCILOR ROBINSON REQUESTING CITY MANAGER LOOK INTO FEASIBILITY OF INSTALLATION OF SOLAR PANELS ON THE ROBINSON SCHOOL PROPERTY

The Department of Planning and Development (DPD) believes that solar potential exists at the Robinson School property and other municipal properties based on past analyses from solar developers and UMass Lowell energy engineering students. Recent developments within the Solar Massachusetts Renewable Target (SMART) solar incentive program, as well as recent legislation, should allow for favorable conditions for developing more solar on municipal properties.

Existing Solar Installations on Municipal Property:

The City of Lowell has made multiple investments in solar energy systems across our portfolio. Solar panels are currently present on the following facilities: Butler Middle School, Reilly Elementary School, Pawtucketville Elementary School, Shaughnessy Elementary School, Lowell Memorial Auditorium, Wastewater Utility Treatment Plant, and Water Utility Treatment Plant. Additionally, net metering installations are found on the closed landfill on Westford St and solar fields in Orange and Athol. These 9.39 MW of solar panels installations have cumulatively generated 89,913,295 kWh of clean energy and helped save the City over \$3.1 million in utility bill charges since the first installation in November 2010.

Further solar development has been stalled due to constraints in the SMART incentive program. However, on December 30, 2021, the Massachusetts Department of Public Utilities issued an order doubling the incentive program to allow for more solar development in the Commonwealth. This expansion could be advantageous in developing additional solar resources within Lowell.

Financial Instruments for Benefiting from Solar:

There are multiple financial instruments that can be utilized to create value from solar. The instrument used at School facilities with existing solar is known as a Power Purchase Agreement (PPA). Under this type of agreement, a third party solar developer installs, owns, and operates an energy system on the customer's property. The customer then purchases the system's electric output for a pre-determined period at a rate established in the PPA. Advantages for this type of system include: no upfront cost, energy offset at the facility, maintenance is responsibility of owner of the system, and the third party can receive income tax and State incentives.

Solar panels can also be owned by the City. This is the case for panels at Wastewater and Water. Although the owner (in this case, the City) is responsible for maintenance, they also receive State incentive payments for the environmental attributes of the system, along with energy offset at the facility. The recent federal infrastructure bill passed last November might include an opportunity that would make ownership more viable because it will invest \$500 million to provide grants to communities to develop and implement clean energy and energy efficiency programs in schools. The Energy team will continue to monitor opportunities as they are made available.

Third parties can also offer lease/rent payments for solar assets developed on municipal property. Under these agreements, a solar developer will pay the City on an annual basis for the right to use municipal infrastructure for solar development. There can be wide variations on lease/rent payments. This instrument might be more appropriate for areas where the City is not looking to develop solar that would offset facility energy usage.

Robinson and Other Potentially Eligible Properties for Solar:

Over the past several years, the City has actively solicited input from various solar developers for an assessment of our facilities that might have solar potential. Simultaneously, Lowell has worked with UMass Lowell's energy engineering program in Service Learning where the students provide an assessment of solar potential of various City properties. Based on these analyses, we believe that solar potential exists at the following facilities:

- DPW Administration and Garage
- JFK Civic Center
- Ayotte Garage
- Downes Garage
- Early Garage
- Lower Locks Garage
- Roy Garage
- Gershom St Lot
- Dummer St Lot
- Lot A
- Cawley Stadium Parking Lot
- Bailey Elementary School
- Bartlett Community Partnership
- Cardinal O'Connell Alternative School
- Daley Middle School
- Greenhalge Elementary School
- Leblanc School
- Lincoln Elementary School
- Lowell High School (new wing)
- McAuliffe Elementary School
- McAvinnue Elementary School
- Morey Elementary School
- Murkland Elementary School
- Pyne Arts School
- Robinson Middle School
- STEM Academy
- Stoklosa Middle School
- Sullivan Middle School
- Wang Middle School
- Washington Elementary

Some properties might be more appropriate for roof-based solar panels. For others, solar canopies and/or development of adjacent properties might offer the best value. Additional value might also be added with the addition of energy storage. Actual economic viability of development of solar at these locations might be limited by the age/suitability of the roof, obstructions on the roof, shading from nearby structures, economic impacts of supply chain materials, engineering constraints, and value of solar incentives.

Next Steps:

The best way to assess further solar feasibility within the municipal portfolio of buildings is to release a Request for Proposals (RFP) to competitively evaluate options. This would allow developers to confirm the best location(s) for solar. The RFP could be structured to evaluate multiple financial instruments and value-added propositions. Depending on the outcome of the RFP process, interconnection and installation could begin in areas where financially advantageous. The RFP could

also provide insight for future installations that might be more financially viable if grant funding were made available, such as the funding anticipated to be available from the infrastructure bill. DPD looks forward to implementing these next steps, if desired by City Council.

KM/cmm

Cc: Katherine Moses, Energy Manager
Phil Ferreira, Housing and Energy Programs Manager
Christine Clancy, Department of Public Works Commissioner
Terry Ryan, Parking Director