Follow-up to Spring 2023 Survey on Solar:
Responses to Comments and Questions

Who/what committees have the authority to advance? What town/voter approvals are required?
At Town Meeting 2023, voters will be asked to approve Article 25, which will allow the School Committee to enter into Power Purchase Agreements (PPAs) and leases to install solar on school properties. The School Committee will then make the ultimate decision about solar projects at the schools, once they have all the financial and design information. The projects will also go through the Planning Board process to ensure compliance with zoning and permitting requirements.

Climate Benefit (what is the impact on greenhouse gas emissions?)
There are many climate benefits associated with a solar canopy, such as reducing greenhouse gas emissions, generating electricity locally, improving air quality, and decreasing heat island effect, among many others. A photovoltaic solar array generates electricity from the sun, which reduces the need for fossil fuel-based electricity generation. This, in turn, leads to a reduction in greenhouse gas emissions, including carbon dioxide, which is a major contributor to climate change.

Energy generation (i.e. how much power will they produce? Will it cover the energy demand of the buildings?)
Power generation depends on the final design, but based on preliminary estimates, adding solar canopies at the High School, Middle School, and Memorial School would cover approximately 76% of those schools' current annual electricity use overall. Canopies at Memorial School may actually generate more power than consumed annually, which can be shared with other Medfield town buildings.

Financial (i.e. what is the cost/benefit to the town?)
The installer pays for 100% of the construction costs and maintenance. Medfield would enter into a Power Purchase Agreement (PPA) with the installer, which is the most common type of agreement for public entities because the municipality does not need to make the capital investment. The municipality purchases the power generated by the solar systems at the PPA rate (fixed for the life of the lease), and thereby stabilizes future electricity costs. With future electricity costs expected to rise, Medfield Public School's savings from the solar installation should continue to increase as the PPA rate remains the same.

How were these locations selected?

The Town of Medfield's Climate Action Plan includes a goal of transitioning to 100% renewable energy by 2030. These locations for solar arrays emerged from review of possible locations in town. Based on the schools' high demand for electricity combined with the available area for solar, the schools provide the best locations for onsite solar production. There is also the educational benefit of integrating solar and sustainability at the schools. The schools have custody over the largest areas that can be used for solar in Medfield, but most of the school roofs are nearing their end-of-life, so it does not make financial or logistical sense to install new arrays on the roofs at this time. Dale and Wheelock schools were not considered due to the ongoing school building project. Other town locations such as the landfill, are not currently available.

Overall, it is also preferred to utilize built-up or paved areas and avoid green space for solar installations. This protects green spaces as well as reduces heat build-up in hard surfaced areas.

Own vs. Lease analysis. How will the project be competitively bid?

The town is not currently in a position to purchase these canopy solar projects outright as the capital required would be significant. The projects being considered are all Power Purchase Agreements which include a lease project with Solect Energy, the preferred/selected vendor under PowerOptions for large-scale municipal solar systems. The Town of Medfield is part of a multi-town purchasing consortium, PowerOptions, that has put municipal solar projects out to bid and selected a vendor, Solect, on behalf of the consortium. The markup/profit that Solect can make on the projects has been pre-determined by this process. The town can rely on the PowerOptions purchasing process and does not have to go out to a competitive bid but can know that the price was determined through a competitive process.

Are the panels durable?

Generally speaking, a well-designed and properly installed commercial solar canopy should have a lifespan of at least 25 years or more. This is because most high-quality solar panels come with a 25-year warranty, and if the canopy is designed and installed correctly, it should be able to protect the panels from damage and degradation over that period of time. The proposed projects will be owned by Solect (with minimum kwh generation commitments to the town) so proper installation and durability are of particular interest to Solect. Solect Energy is responsible for the maintenance and ongoing production associated with each system

End-of-Life procedure (i.e. how will we dispose of the equipment at their end-of-life?)
Generally speaking, there are three options at the end of the PPA term: (i) renew the PPA, (ii) purchase the system at fair market value, or (iii) have the equipment removed by Solect at no cost to the town. The decision for which end of agreement alternative is best for the town will be made in the future. In general, once solar panels reach their end of life, the vast majority of materials can be recovered and recycled.

Does the account accrue "points" that could be applied e.g. to the end of life procedure?
With our PPA agreement with Solect, there are no “accrued points” like there would be with residential-owned solar panel systems. The benefits of the PPA is the locked-in agreed rate for the supply cost of electricity for the life of the contract.

Aesthetics (i.e. how will they look from eye level? How will they interact with the architecture of the schools?)
This information will be available when we get the renderings and will be among the topics considered by the School Committee during the decision making process.

Why doesn't the Public Safety building have solar panels on its roofs? Assume the Town Hall roof may not be ideal?
The Public Safety Building does have solar panels. They are not visible from the street and were installed when the building was built. The Town Hall is not a good candidate for solar panels. Town Hall is a historic building with a slate roof. There are large trees directly to the south of the building which would shade the solar panels.

What will the cost be to relocate or replace installations upon the (hopefully) eventual new school being built?
At this time, there are no plans to install solar at Dale or Wheelock school. We anticipate solar will be considered as part of the features of the new school.

How is snow plowing accomplished?
The canopies will allow adequate clearance for snow removal equipment.

How will solar canopies impact student/staff parking?
Canopies protect vehicles and pedestrians from snow, rain, and sun. Final engineering has not been completed but it is expected that there will be minimal, if any, effect on the number of parking spaces.

Do Solar Panels have any other benefits?
In addition to generating renewable energy, these panels will protect the parked cars and pedestrians from snow, rain and direct sunlight.

How do the neighbors/teachers/parents who would see the solar canopies all the time feel about them?
The results of the recent survey that was open to Medfield residents as well as the school community, indicated that respondents are overwhelmingly supportive of these projects. The Renewables Pillar of the Energy Committee has made a concerted effort to invite feedback from all interested parties and address any questions and concerns.

Are there any setbacks?
Yes, solar arrays must abide by the setbacks as set forth in our zoning laws. The school buildings under consideration for parking lot canopies are all in the RS district. The following setbacks apply: Front 30', Side 12', Rear 40'. These projects will all go through the town's Planning Board process where compliance with the town's zoning laws, including these setbacks will be confirmed.

What is the implementation timeline? (i.e. what are the next steps? will this project interfere with school activities?)
While the specific details are being worked out, the conversation to date has been about a project approval in May/June 2023 and a construction start date of June 2024. Most construction is planned to take place during the summer/times when school is out to minimize disruption to the parking areas and other school activities.

China as a primary source for solar materials is not smart for infrastructure projects.
Solect is investigating options for sourcing at this time. There are incentives for using domestically produced materials. Solect will evaluate the possibility of sourcing the materials which are manufactured within the USA. The final procurement decisions will be informed by final engineering, supply availability and project economics.

What is the immediate cost to taxpayers and over time? Is there a budget for repairs, long term maintenance?
The installer pays for 100% of the construction costs and maintenance over the life of the contract, 25 years.

How many years is it usable for and what is the cost to replace/ take down?
The PPA contract will be for 25 years. Generally speaking, there are three options at the end of the PPA term: (i) renew the PPA, (ii) purchase the system at fair market

value, or (iii) have the equipment removed by Solect at no cost to the town. The decision for which end of agreement alternative is best for the town will be made in the future.

Can the panels on roofs damage them? If so, how are they repaired and how costly are said repairs to the town.
Responsibility for the entire installation will belong to the contractor and any damage is their responsibility.

Does Solect have an affirmative obligation under the contract to carry insurance to guard against damage to persons or property? If not, is Solect willing to agree in the contract to acquire such insurance coverage?
Yes. Solect carries property and casualty insurance and indemnifies the Town.

Will the roofs be replaced prior to placing them on school roofs?
Most of the school roofs are nearing their end-of-life, so it does not make financial or logistical sense to install new arrays on the roofs at this time. There is one section of roof at the Blake Middle School, that was recently replaced. Panels are being considered for this location.

Will placement of these items at schools take into consideration that a site and scope of a new elementary school have not yet been completed?
Dale and Wheelock schools are not being considered as possible locations at this time due to the ongoing school building project.

Does the contract have an out provision and if so what are the criteria?
Yes. There are several areas in the agreement which provide Medfield with out provisions. During the development of the system, Medfield has the option out, if Solect cannot achieve the allowable PPA rate in the agreement, or if the development timeline extends beyond the development and construction periods as defined in the agreement. Medfield also has purchase options at predetermined years in the agreement. Typically, the purchase options are included at years 7, 10 or 15.

What would happen if the schools decide they want to use the land the arrays are on for another purpose?
If Medfield decides to use the land for another purchase, the town has several options including: relocating the canopies at the town's expense or exercising early purchase options. There are also early termination provisions included as well.