



Solar Carport Project

November 2022

We are asking Council to approve securing the funding via ordinance to hire Talva Energy to do engineering, design, applications and construction management of a solar carport at the MRC.



Solar Carports Project

What has changed?

- July 2022: The plan was for a Power Purchase Agreement.
 - A developer would build 3 Carport sites at zero cost to Borough.
 - Developer would sell the power to the Borough at a set rate for 15 years under a PPA.
 - It was advantageous to do all 3 sites.
- The Inflation Reduction Act provides new financial incentives.
 - The Investment Tax Credit for 30%-40% of the cost is now available to Municipalities.
 - Now the \$ amount will be paid to the Borough as a grant if it builds the carport itself.
- Therefore, we are suggesting that the Borough build one carport.
 - Given the SREC regulations, the Borough (not the utility) would be building and paying for the carport.
 - Now the advantage is in doing them one at a time with the MRC first.
 - The MRC Carport would be paid off in 9-12 years and then we would get 'free' electricity thereafter.
 - Do one carport and learn what we like and don't like.

Grid Modeling Results

- Grid Simulation Study was done on the affected feeders to insure no adverse impacts.
- Results show no negative impact from any of the three planned Solar installations.



MRC

- Energy for 50 ~ 85 homes depending on size
- No Tree Trimming
- Shaded Parking for MRC



Financials

- **Purchase Price:** \$1.8 - 2.0 Million
- **Federal Incentive:** 30% - 40% depending on country-of-origin of materials
- **Payback Interval:** 9-12 years or much shorter with certain assumptions

- Payback calculation includes revenue from SRECs and avoided cost of not having to buy the electricity.
- We need to refine the design and we don't know the supply chain issues.
 - As such, the purchase price and payback period are both estimates.
 - We will have firm numbers after going to bid.

Design Details



Powder Coated Structure



Truss Design



Basic I-Beam Design

We are assuming that the Council and Planning Board would prefer powder coated over a basic I-beam design

Design Details Continued



Possible pebble finish to the concrete piers. This may be a relatively inexpensive way to improve the aesthetics.



Bumper guards on the piers are worth considering as well. Both could be included as bid alternates.

Design Details Continued

- We will discuss design with Planner and Borough Engineer and expect to go before Planning Board for a courtesy review.
- Should structure be powder coated?
- We suggest no roof decking under the solar panels.
- Some underground drainage.
 - Panels that slope into the parking area will be guttered with discharge to rain garden or grass area for reduced icing and improved aquifer recharge.
- Snow guards will be included.
- Structure will include LED lighting.
- No loss of parking places anticipated.
- Online application will show generation and other project information.



Morris County Library

Timing and Next Steps

- We are asking Council to approve securing the funding via ordinance to hire TALVA Energy to do engineering, design, applications and construction management.
- We hope to get a courtesy review in front of the Planning Board asap (December?) so we can refine designs and then complete the technical specifications.
- Early 2023 we will need to determine how we are going to fund this. The project generates positive cashflow right from the start, so short term borrowing may be the best option.
- Early in 2023, we will need to change certain parts of Borough Code.
 - kW cap needs to be lifted for governmental entities (Borough, BOE, MHA).
 - Need to modify code to allow government accounts to net meter and apply their credits from one government account to another (remote net metering).
- If we can complete the above tasks in January, and issue bid in late January, and if we don't get tripped up by supply chain issues, then it is possible that we would complete this project in Fall 2023.

Questions?