

NORTH SHORE FIRE/RESCUE

Office of the Fire Chief Robert Whitaker

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The North Shore Fire Department (NSFD) began considering a reconstruction project on the Shorewood Fire Station, Station 83 more closely in 2017. In 2018 a community forum was hosted in the Village of Shorewood at Station 83 to accept public input about the possibilities of reconstruction for this station. A strong desire was heard from community members on two points. One was the desire to preserve the historical value of the station and the other was to consider green technologies that could better enhance the station.

Multiple quotes were sought from solar power vendors and the Department ultimately began working with Arch Electric on the implementation of panels on the Shorewood Fire Station. Arch Electric provided several sources of information for the Department to consider to assist in making its final decision on solar panel implementation.

Arch Electric was able to determine that the Department would save approximately \$4,031 on an annual basis through energy that was generated by the solar panels that would offset the Department's purchase and installation costs. Arch Electric applied this information and provided a pay-back schedule that indicated the solar panels would pay for themselves within 12 years and the Department would see a return on investment by the 13th year of service. The life expectancy for solar panels is between 25 and 30 years. Arch Electric indicated that by year 30 the Department would make over \$95,000 on these panels before they would need to be replaced.

The Department uses a 25-year life expectancy for both the roof and solar panels in its Capital Improvement Plan. Even if the Department were to replace the solar panels in 25 years the Department is still estimated to make a return on investment of over \$65,000.

The Department first recognized a payback on its solar panels in September of 2020. During this month, the energy consumed in the building amounted to 6,560 kWh and the energy produced was 3,680 kWh. The Department was invoiced on 2,880 kWh. The Department's new solar panels produced over half of the energy that was consumed at the newly reconstructed station. The savings for just the September 2020 invoice was \$486.28. Taking an average of the first four months the solar panels were in use the Department recognized an average savings per month of \$322.42. Multiplied by twelve this comes to \$3,869 per year. This number is slightly lower than what Arch Electric originally projected but the Department has yet to experience a full year of these solar panels in use.

The Department has been very pleased with the savings that is being seen from the new solar panels and was even more pleased with the level of community support that was received for the project. The NSFD intends to continue evaluating the use of solar technologies on its future projects and encourages other municipalities to reach out to the NSFD staff with any questions or concerns they might have about solar power implementation.