

Willard Elementary School Solar Photovoltaic System Project

The Town of Concord, with assistance from Concord Public Schools, has won a \$150,000 Energy Efficiency and Conservation Block Grant from the Massachusetts Department of Energy Resources for the purpose of purchasing a solar photovoltaic (PV) system to be placed on the roof of the Willard Elementary School. Additional funding from the Concord Municipal Light Plant (CMLP) and the Alfred H. Sawyer Resources Conservation Trust Fund will be combined with the grant funding to purchase a 44kW solar photovoltaic system. The system will generate at least 7% of the electricity used by the School.

CMLP has issued a Request for Proposals for installation and maintenance of the panels, with installation expected to be completed over the summer of 2010. CMLP expects the solar PV system to consist of 100-200 solar panels, which will be placed on various areas on the School's roof. These may include the flat roof over the south facing classrooms, and the high roofs of the gymnasium, auditorium and media center. In evaluating proposals, CMLP will favor solar PV system designs in which the panels are placed flat, or almost flat, against the roofs on which they are installed. The appearance, angle and locations of the panels will be known once a contractor has been selected to carry out the installation.

Installing a solar photovoltaic system on the roof of the Willard School has a number of important benefits.

- **Electricity Cost Savings.** Concord Public Schools will save money on every kWh generated with solar energy.
- **Reduction in Peak Electricity Purchases.** Electricity consumption in Concord peaks during the summer months. The extra electricity that the Town purchases in order to meet needs during peak periods is expensive and is generated less efficiently than electricity used for base load needs. Thus, reductions in peak electricity purchases are particularly effective in stabilizing rates for Concord customers and curtailing pollution and energy waste. Because the amount of electricity produced by a solar photovoltaic system is also at its peak during the sunny summer months, the Willard's solar PV system should reduce the amount of expensive, inefficiently-produced electricity that CMLP must buy to meet the Town's needs.
- **Educational Opportunities.** In addition to expanding upon its demonstrated commitment to green building design, a solar PV system on the Willard School can provide additional important educational opportunities to students, other sectors of the Concord community, and beyond.
- **Management Experience.** This solar PV system will be the first on a municipal building in Concord. As such, it will provide an important opportunity for the Municipal Light Plant and CPS to gain experience overseeing the contractual arrangements, installation and ongoing operation of the system.
- **Investment in Energy Sources of the Future.** The electricity used in Concord is currently generated in large part by natural gas. As a forward-thinking community, Concord seeks to be proactive in making the transition to a world in which inexpensive fossil fuels will be much less available, and the amount of CO₂ emitted will need to be greatly reduced. By investing in solar energy generation, Concord encourages the ongoing evolution of the solar photovoltaic technology that will be a growing part of our electricity generation mix in years to come.