

City of Newton Solar 2013-2021

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Solar Installations at Municipal Facilities

The City of Newton currently has solar arrays operating at 18 City owned parking lots and building rooftops. The projects reduce carbon emissions and produce revenue for the City. The projects are being installed in three phases. Phases 1 and 2 were completed in 2013/2014 and 2017. They included ten rooftop projects, two parking canopy projects and the solar farm at the Rumford landfill. Phase 3 electricity generation began in 2020 when three rooftop projects came on-line. In August and September of 2021 (FY 2022) three more parking canopy projects came on-line at the Newton Free Library and North High School. Seven additional projects are planned under Phase 3 and are under development. The projects that were on-line in FY 2021 generated over 5 million kWh which was equivalent to 25% of the total municipal electrical use in that year. The projects also saved the City over \$500,000 in FY 2021. When all planned projects are completed they will generate the equivalent of 40% of total municipal electricity use.

Greenhouse gas reductions due to Newton Solar Projects on-line in FY 2021

- 5 million kWh of solar electricity generation offsets over 2500 tons of CO2 emissions per year.
- This is equivalent to the carbon sequestration of over 2600 acres of forest.
- This is also equivalent to carbon emissions of 5.5 million miles driven by an average passenger vehicle.

Completed Phase 3 Solar Projects						
Location	KW (AC)	# of panels	on line date	Actual solar generation FY 2021 kWh	Est. solar generation kWh	Solar as % of total building use
Phase 1						
Brown MS-roof	240	988	Dec-13	277280		39
Countryside ES-roof	50	273	Dec-13	69933		24
Memorial Spaulding ES-roof	100	468	Dec-13	122680		53
North HS- roof	260	1051	Apr-14	266920		8
Phase 2						
South HS- parking canopy and roof	240	944	Jan-17	326200		15
Angier ES-roof	36	144	Jan-17	52006		11
Oak Hill MS-roof	104	424	Jan-17	149781		24
Bowen ES-roof	58	247	Jan-17	79312		39
Lower Falls CC-roof	15	39	Jan-17	12695		56
FS #10-roof	11.5	35	Jan-17	12010		11
Elliot St. DPW- parking canopy	483	1872	Jan-17	653915		730
Rumford Landfill-ground mount	1671	6678	Jul-17	2650900		4656
Phase 3-Completed						
Ed Center-roof	67	216	Jul-20	96857		11
FS #3 & HQ-roof	67	162	Jul-20	72507		15
Zervas ES-roof	133	468	Jul-20	225786		32
North HS-parking canopy Lowell Ave	360	1260	Aug-21	0	582786	17
North HS-parking canopy Walnut St.	220	756	Sep-21	0	354392	11
Main Library-parking canopy	240	864	Sep-21	0	378230	29
Total for all completed projects	4,356	16,889		5,068,782	1,315,408	
Highlighted locations use the solar energy at the building. The remaining locations provide solar energy to the electric grid. City government used 20,059,732 kWh in FY 2021. Actual total solar generation was 5,068,782 kWh (25%).						

Planned Phase 3 Solar Projects						
Location	Est.KW (AC)	# of panels	on line date	actual solar generation kWh	Est. solar generation kWh	% Of building use
Phase 3 -Planned						
Angier ES-roof	73				142409	
Cabot ES-roof	109				66161	
Ed Center-parking canopy	216				335119	
Memorial Spaulding ES-parking canopy	146				204698	
Pleasant St. lot-parking canopy	100				120656	
Brown MS-parking canopy	216				321338	
Wheeler Road lot-parking canopy	220				313500	
Total for all planned projects	1,080				1,503,881	
Information will be added as it becomes available during project development.						

Solar Project Savings Phases 1, 2 and 3		
FY 2018	Savings	kWh
Phase 1	\$ 59,511	622,475
Phase 2	\$ 122,958	1,097,129
Rumford	\$ 371,833	2,396,870
	\$ 554,302	4,116,474
FY 2019	Savings	kWh
Phase 1	\$ 82,002	734,813
Phase 2	\$ 167,764	1,169,869
Rumford	\$ 457,995	2,518,530
	\$ 707,761	4,423,212
FY 2020	Savings	kWh
Phase 1	\$ 68,977	761,117
Phase 2	\$ 126,311	1,330,357
Rumford	\$ 383,952	2,843,120
	\$ 579,240	4,934,594
FY 2021	Savings	kWh
Phase 1	\$ 65,932	736,813
Phase 2	\$ 127,239	1,285,919
Rumford	\$ 345,325	2,650,900
Phase 3	\$ 51,800	395,150
	\$ 538,496	5,068,782

Phase 3-Newton Free Library- Sept. 2021



Phase 3 North HS, Lowell Ave- Aug. 2021



Phase 3-North HS, Walnut St.-Sept. 2021



Phase 3-Zervas ES-July 2020



Phase 3- Fire Station 3 and HQ-July 2020



Phase 2-Rumford Landfill-July 2017



Phase 2- South HS- Jan. 2017



Phase 1- North HS- Dec. 2013



Phase 1-Brown MS- Dec. 2013

