City of Newton Solar 2013-2023

William H. Ferguson, Co-Director of Sustainability

Solar Installations at Municipal Facilities

The City of Newton currently has solar arrays operating at 18 City owned locations. 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 2023 generated over 6 million kWh which was equivalent to 30% of the total municipal electrical use in that year. The projects also saved the City over \$1,000,000 in FY 2023. When all planned projects are completed, they will generate the equivalent of 40% of total municipal electricity use.

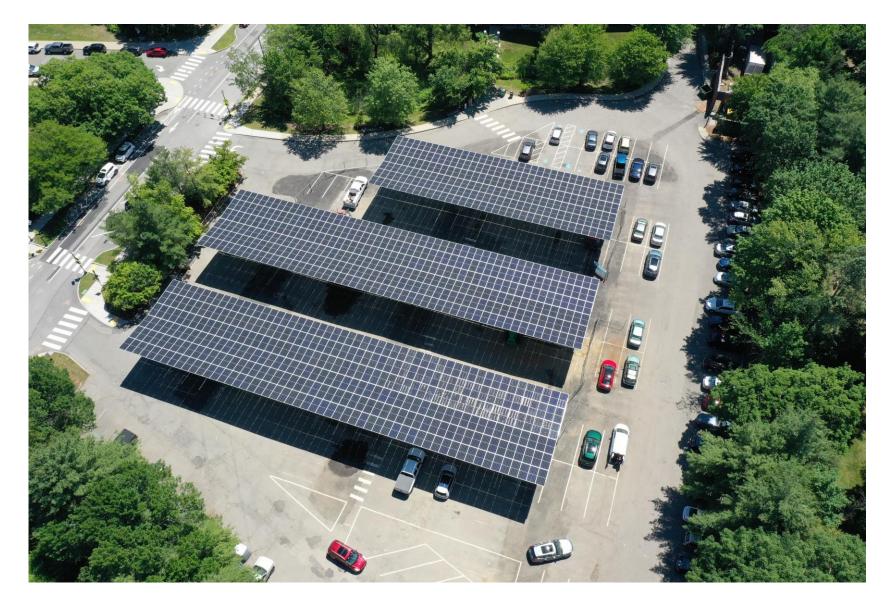
Greenhouse gas reductions due to Newton Solar Projects on-line in FY 2023

- 6 million kWh of solar electricity generation offsets over 3,000 tons of CO2 emissions per year.
- This is equivalent to the carbon sequestration of over 3,100 acres of forest.
- This is also equivalent to carbon emissions of 6.6 million miles driven by an average passenger vehicle.

Solar Project Savings	s Ph	rev	.1.9.2024					
FY 2018		Total NMC	al NMC Cost			et Savings	kWh	
Phase 1	\$	128,403	\$	68,892	\$	59,511	622,475	
Phase 2	\$	291,413	\$	168,455	\$	122,958	1,097,129	
Rumford	\$	621,819	\$	249,986	\$	371,833	2,396,870	
					\$	554,302	4,116,474	
FY 2019	Total NMC		Cost		Net Savings		kWh	
Phase 1	\$	160,297	\$	78,295	\$	82,002	734,813	
Phase 2	\$	353,129	\$	185,365	\$	167,764	1,169,869	
Rumford	\$	713,204	\$	255,209	\$	457,995	2,518,530	
					\$	707,761	4,423,212	
FY 2020		Total NMC	Cost		Net Savings		kWh	
Phase 1	\$	158,293	\$	89,316	\$	68,977	761,117	
Phase 2	\$	343,346	\$	217,035	\$	126,311	1,330,357	
Rumford	\$	727,677	\$	343,725	\$	383,952	2,843,120	
					\$	579,240	4,934,594	
FY 2021		Total NMC	Cost		Net Savings		kWh	
Phase 1	\$	141,917	\$	75,985	\$	65,932	729,053	
Phase 2	\$	337,595	\$	210,356	\$	127,239	1,285,919	
Rumford	\$	681,699	\$	336,374	\$	345,325	2,650,900	
Phase 3			\$	31,614	\$	51,800	395,150	
	\$	1,161,211	\$	654,329	\$	538,496	5,061,022	
FY 2022-actual		Total NMC	Cost		Net Savings		kWh	
Phase 1	\$	135,910	\$	86,775	\$	49,135	731,066	
Phase 2	\$	375,597	\$	213,945	\$	161,652	1,273,322	
Rumford	\$	787,758	\$	341,632	\$	446,126	2,667,579	
Phase 3					\$	115,493	1,062,742	
Total	\$	1,299,265	\$	642,352	\$	772,406	5,734,709	
FY 2023-actual		Total NMC		Cost		et Savings	kWh	
Phase 1	\$	216,648	\$	85,835	\$	130,813	670,195	
Phase 2	\$	449,003	\$	222,512	\$	226,491	1,318,436	
Rumford	\$	1,025,947	\$	365,797	\$	660,150	2,827,370	
Phase 3	\$	232,720	\$	192,572	\$	40,148	1,628,143	
Total	\$	1,924,318	\$	866,716	\$	1,057,602	6,444,144	
NMC is net metering credits. These appear on						al City kWh	21,181,000	
city electriciy accounts as bill credits or, for the						ar	30%	
Rumford landfill, the City gets a monthly check								
from Eversource.								

Solar - Update March 15, 2024							
Completed							
	Total First	ĸw					Construction
Roof Sites	Year Output	KW (AC)	(DC)	Location	Туре	Solar Company	Timeline
Ed Center roof, 100 Walnut St.	95,779	67	81	Roof	BTM	Ameresco	completed
Fire Station #3 and Headquarters, 31 Willow Street	77,395	67	63	Roof	BTM	Ameresco	completed
Zervas Elementary School, 30 Beethoven Ave	216,094	133	182	Roof	BTM	Ameresco	completed
Angier Elementary School Gym roof, 1697 Beacon St	98,208	73	88	Roof	BTM	Ameresco	FY2025
Cabot, 229 Cabot School	142,409	109	122	Roof	BTM	Ameresco	FY2025
Carr School, 225, Nevada Street	66,161	50	57	Roof	BTM	Solect	redesign
Williams Elementary School, 141 Grove Street	87,835	59	68	Roof	BTM	Solect	Summer 2024
Total Phase 3 Roof sites kWh		558					
Parking Lot Canopy Sites							
Education Center parking lot, 100 Walnut St. (Crafts St side)	335,119	216	284	Parking lot	FTM	Ameresco	FY2025
Oak Hill MS parking lot, 130 Wheeler Road, behind Oak Hill Middle School	197,117	136	169	Parking lot	BTM	Solect	on hold
Memorial Spaulding Elementary School parking lot, 250 Brookline Ave	204,698	146	182	Parking lot	FTM	Ameresco	FY2025
Pleasant Street lot, Newton Centre	120,656	100	108	Parking lot	FTM	Ameresco	on hold
Mason Rice Elementary School Parking lot, 149 Pleasant St	200,824			Parking lot	BTM	Solect	on hold
North High School, Lowell Ave	582,786	360	492	Parking lot	FTM	Ameresco	completed
North High School, Walnut Street	354,392	220	267	Parking lot	BTM	Ameresco	completed
Brown Middle School Lot (behind school) 125 Meadowbrook Rd	321,338	216	277	Parking lot	FTM	Ameresco	FY2025
Wheeler Road lot, corner of Meadowbrook Road and Wheeler Road	313,500	220	270	Parking lot	FTM	Ameresco	FY2025
Newton Free Library, 330 Homer Street	378,230	240	347	Parking lot	BTM	Ameresco	completed
Total Phase 3 Canopy sites kWh	3,008,660	1,854					
Phases			Municipal Use		BTM	Behind the Meter.	
Phase 3 Total kWh-completed, actual FY 2023 kWh				8%		Electricity is used	
•				10%			
					FTM		
							! 1
						-	
	Roof Sites Ed Center roof, 100 Walnut St. Fire Station #3 and Headquarters, 31 Willow Street Zervas Elementary School, 30 Beethoven Ave Angier Elementary School Gym roof, 1697 Beacon St Cabot, 229 Cabot School Carr School, 225, Nevada Street Williams Elementary School, 141 Grove Street Total Phase 3 Roof sites kWh Parking Lot Canopy Sites Education Center parking lot, 100 Walnut St. (Crafts St side) Oak Hill MS parking lot, 130 Wheeler Road, behind Oak Hill Middle School Memorial Spaulding Elementary School Parking lot, 149 Pleasant St North High School, Lowell Ave North High School, Lowell Ave North High School, Lowell Ave North High School Lot (behind school) 125 Meadowbrook Rd Wheeler Road lot, corner of Meadowbrook Road and Wheeler Road Newton Free Library, 330 Homer Street Total Phase 3 Canopy sites kWh	CompletedTotal First Year OutputRoof SitesYear OutputEd Center roof, 100 Walnut St.95,779Fire Station #3 and Headquarters, 31 Willow Street77,395Zervas Elementary School, 30 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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 3and 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

