

Solar Phase 3 Carbon Emissions Impacts

Expected Energy Generation Year 1	Tree Removal		Avoided CO ₂ Emissions	Equal to	
MWh/year	Number of Potential Trees Removed	Annual Carbon Sequestration Lost (tons CO ₂)	Tons CO ₂ /year	Sequestration by U.S. Forest in One Year	Emissions from Miles Driven by an Average Passenger Vehicle
4,333	13	1.63	2,192	2,340	4,861,978

Cadmus conducted an analysis of the Carbon Dioxide Emissions impacts of the Solar Phase 3 Sites. The team utilized the EPA's Avoided Emissions and Generation Tool (AVERT) to calculate regional avoided emissions based on kW capacity (AC). The team utilized the USDA's CUFR Tree Carbon Calculator for carbon sequestration potential of removed trees (using developer assumptions). The team utilized the EPA's Greenhouse Gas Equivalencies Calculator to generate equivalencies.

Rooftop Sites

Site Information		Tree Removal			Annual Avoided CO ₂ Emissions	Equal to	
Site	Expected First Year Generation (MWh/year)	Trees slated for removal	CO ₂ Stored per year (lbs/tree/year)	Total CO ₂ Stored Per Year (tons)	Annual Avoided CO ₂ Emissions (tons)	Sequestration by U.S. Forests in One Year (acres)	Emissions from Miles Driven by an Average Passenger Vehicle
Ed Center	96	0	-	-	46	49	102,281
Fire Station 3	77	0	-	-	46	49	102,281
Zervas ES	216	0	-	-	100	107	222,349
F.A. Day MS	303	0	-	-	150	160	333,524
Angier ES	102	0	-	-	30	32	66,705
Cabot	76	0	-	-	30	32	66,542
Carr	76	0	-	-	30	32	66,542
Williams ES	153	0	-	-	50	53.4	111,175

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Parking Lot Canopy Sites

Site Information		Tree Removal			Annual Avoided CO ₂ Emissions	Equal to	
Site	Expected First Year Generation (MWh/year)	Trees slated for removal	CO ₂ Stored per year (lbs/tree/year)	Total CO ₂ Stored Per Year (tons)	Annual Avoided CO ₂ Emissions (tons)	Sequestration by U.S. Forests in One Year (acres)	Emissions from Miles driven by an average passenger vehicle
Ed Center	334	0	-	-	180	192	400,229
Oak Hill MS	192	0	-	-	100	107	222,349
Memorial Spaulding ES	197	0	-	-	90	96	200,114
Pleasant Street	122	2	404.1	0.20	60	64	133,410
Mason Rice ES	196	2	736.8	0.37	90	96	200,114
Newton North HS Lowell Avenue	589	0	-	-	290	310	644,813
Newton North HS Walnut St.	320	0	-	-	140	150	311,289
Brown MS	448	1	64.2	0.03	250	267	555,873
Auburndale Cove	421	1	785.4	0.39	220	235	489,168
Newton Free Library	415	7	1,275.8	0.64	200	214	443,611

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