

Appendix 1

The GHG reduction model displayed on pages 16 and 17 of the Climate Action Plan (CAP) shows a pathway – Scenario A – for Wellesley to reach its greenhouse gas (GHG) emissions reduction goals assuming aggressive action is taken by Wellesley residents, businesses, institutions, as well local, state, and federal government. Actual CAP strategy adoption rates depend on uncertain factors such as technology, policy, economics, and social norms. We modeled Scenario B below to reflect a future in which Wellesley adopts the CAP strategies at a slower pace.

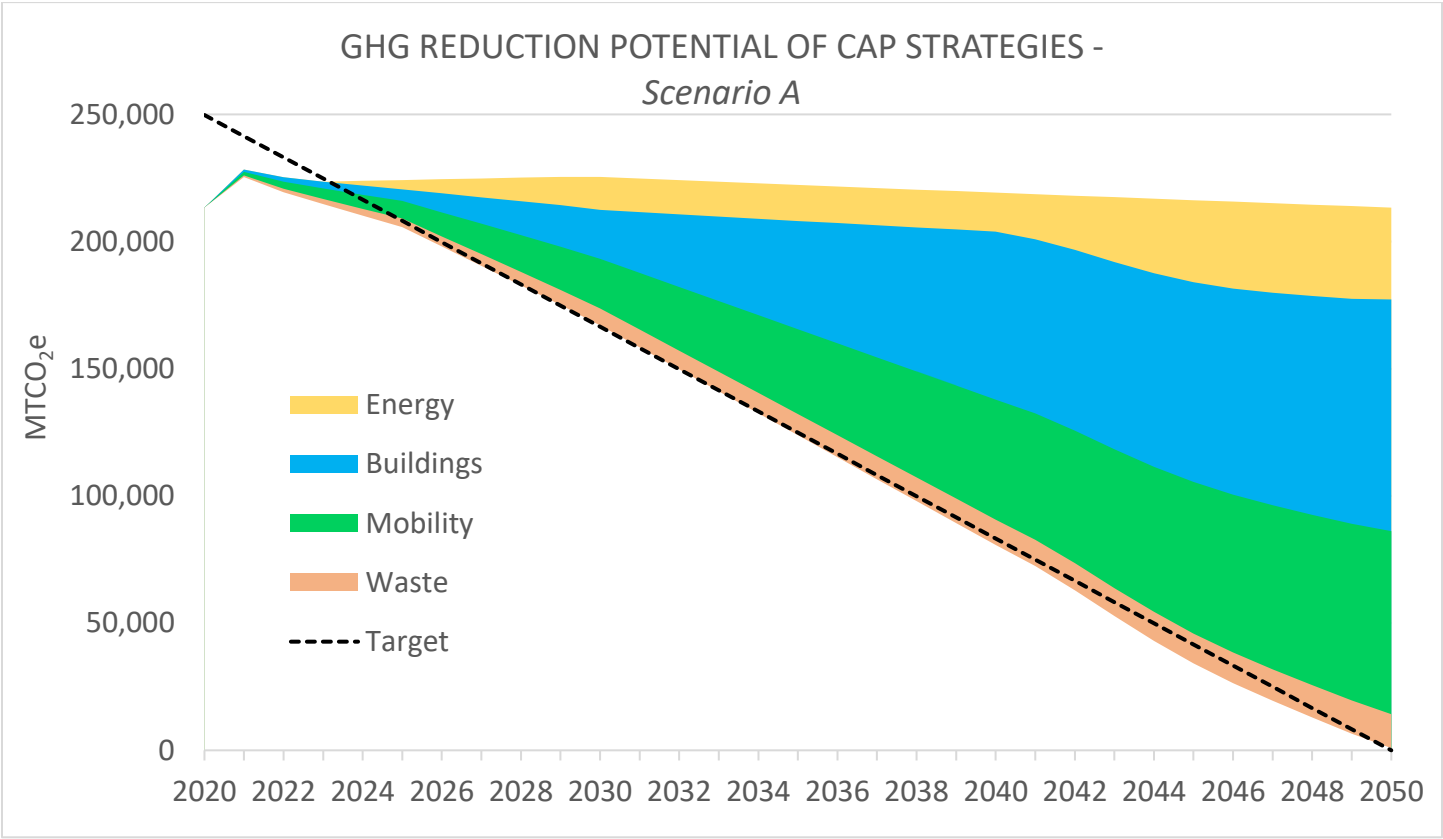
CAP strategy adoption rates by a given target year as well as GHG reduction results for Scenarios A and B appear below for comparison.

	Scenario A				Scenario B			
	2025	2030	2040	2050	2025	2030	2040	2050
Energy								
Level of carbon-free electricity	63%	80%	85%	100%	62%	65%	80%	100%
Total solar PV installations	1,075	1,950	2,925	3,900	300	600	1,500	2,500
Electric Vehicle (EV) Adoption								
EVs as percent of Wellesley vehicles	11%	30%	70%	100%	10%	20%	50%	70%
Number of Wellesley EVs	2,200	6,000	14,000	20,000	2,000	4,000	10,000	14,000
Buildings – New Construction								
Percent high-efficiency & all-electric residential buildings	50%	100%	100%	100%	25%	100%	100%	100%
Percent high-efficiency & all-electric commercial and municipal buildings	50%	100%	100%	100%	25%	100%	100%	100%
Buildings – Existing Residential								
Percent converted to all-electric	5%	20%	75%	100%	2%	10%	40%	80%
Number converted to all-electric	447	1,787	6,701	8,934	179	893	3,574	7,147
Percent with medium energy efficiency	2.5%	10%	20%	30%	2.5%	10%	20%	30%
Percent with high energy efficiency	2.5%	10%	15%	25%	2.5%	10%	15%	25%
Percent with highest energy efficiency	0%	5%	15%	20%	0%	2.5%	5%	10%
Total with energy efficiency improvements	447	2,234	4,467	6,701	447	2,010	3,574	5,807

Buildings – Existing Commercial & Municipal	2025	2030	2040	2050	2025	2030	2040	2050
Percent converted to all-electric	5%	25%	70%	100%	3%	15%	50%	80%
Number converted to all-electric	16	78	219	313	9	47	157	250
Percent with medium energy efficiency	2.5%	5%	15%	33.3%	4.5%	10%	30%	50%
Percent with high energy efficiency	2.5%	5%	15%	33.3%	0.5%	5%	12.5%	25%
Percent with highest energy efficiency	0%	5%	15%	33.3%	0%	1%	2.5%	5%
Total with energy efficiency improvements	16	47	141	313	16	50	141	250

Waste	2025	2030	2040	2050	2025	2030	2040	2050
GHG reductions from 2020 levels	25%	50%	75%	100%	12.5%	25%	37.5%	50%

The wedge diagram below depicts the GHG emissions reductions associated with four Scenario A pathways.



The wedge diagram below depicts the GHG emissions reductions associated with four Scenario B pathways.

