

APPENDIX C: PILOT CITY RESULTS TABLES

Tables C1-C3 summarize the carbon savings potential estimated by the prototype calculators for each pilot city. The results from the calculators are intended as a proof of concept for functionality, and are directionally accurate but not yet reliable estimates for informing decision-making. Additional research, as described in [Appendix B](#), would increase the utility of these prototypes for decision-making.

Table C1. Summary of preliminary carbon impacts and savings potentials for the City of New York for policy scenarios evaluated with the BECI Reduction Policy Calculator (A0-A3), Low-Carbon Concrete Policy Calculator (B0-B3), Adaptive Reuse Calculator (C0-C3) and Housing Size Policy Calculator (D0-D4).

Scenario	Carbon emissions by 2050 (MmtCO2e)	Carbon savings by 2050 (MmtCO2e)	Annual carbon savings (Thousand mtCO2e)	Percent reduction from Baseline
Requiring reductions in building embodied carbon intensity (City of New York)				
Baseline Scenario A0 (No reduction for 1-4 Family, Commercial, Multifamily, Institutional)	20.8	0	0	0
Scenario A1 (10%, Commercial)	20.2	0.6	19	3%
Scenario A2 (40%, Multifamily)	16.6	4.2	141	20%
Scenario A3 (30%, 1-4 Family, Commercial, Multifamily, Institutional)	14.6	6.3	208	30%
Scenario A4 (40%, 1-4 Family, Commercial, Multifamily, Institutional)	12.5	8.3	278	40%
Scenario A5 (50%, 1-4 Family, Commercial, Multifamily, Institutional)	10.4	10.4	347	50%
Limiting the carbon of concrete (City of New York)				
Baseline Scenario B0 (No reduction for 1-4 Family, Commercial, Multifamily, Institutional)	6.9	0	0	0
Scenario B1 (30%, Commercial)	6.3	0.6	20	9%
Scenario B2 (30%, Multifamily)	5.8	1.1	37	16%
Scenario B3 (50%, 1-4 Family Commercial, Multifamily, Institutional)	3.4	3.4	114	50%
Increasing adaptive reuse (City of New York)				
Baseline Scenario C0 (No reduction for 1-4 Family, Commercial, Multifamily, Institutional)	20.8	0	0	0
Scenario C1 (5%, Commercial, Multifamily, 1-4 Family, Institutional - preserves approximately 0.04% of existing building stock area)	20.0	0.9	29	4%
Scenario C2 (10%, Commercial, Multifamily, 1-4 Family, Institutional - preserves approximately 0.08% of existing building stock area)	19.1	1.7	57	8%

Scenario C3 (30%, Commercial, Multifamily, 1-4 Family, Institutional - preserves approximately 0.23% of existing building stock area)	15.7	5.1	171	25%
Reducing typical housing unit size (City of New York)				
Baseline Scenario D0 (No reduction for 1-4 Family, Multifamily)	13.3	0	0	0
Scenario D1 (-20% unit size 1-4 Family)	12.8	0.6	19	4%
Scenario D2 (-10% unit size Multifamily)	12.2	1.0	35	8%
Scenario D3 (30% of Multifamily units to be micro)	11.7	1.7	56	13%
Scenario D4 (-20% unit size Multifamily, 1-4 Family)	10.7	2.7	89	20%

Table C2. Summary of preliminary carbon impacts and savings potentials for the City of Portland for policy scenarios evaluated with the BECI Reduction Policy Calculator (A0-A3), Low Carbon Concrete Policy Calculator (B0-B3), Adaptive Reuse Calculator (C0-C3) and Housing Size Policy Calculator (D0-D4).

Scenario	Cumulative carbon emissions by 2050 (in million mtCO2e)	Cumulative carbon savings by 2050 (in million mtCO2e)	Annual carbon savings (Thousand mtCO2e)	Overall percent reduction from Baseline
Requiring reductions in building embodied carbon intensity (City of Portland)				
Baseline Scenario A0 (No reduction for Single Family, Commercial, Multifamily)	16.0	0	0	0
Scenario A1 (10%, Commercial)	15.3	0.7	22	4%
Scenario A2 (40%, Multifamily)	12.6	3.3	110	21%
Scenario A3 (30%, Single Family, Commercial, Multifamily)	11.2	4.8	159	30%
Scenario A4 (40%, Single Family, Commercial, Multifamily)	9.6	6.4	213	40%
Scenario A5 (50%, Single Family, Commercial, Multifamily)	8.0	8.0	265	50%
Limiting the carbon of concrete (City of Portland)				
Baseline Scenario B0 (No reduction for Single Family, Commercial, Multifamily)	4.5	0	0	0
Scenario B1 (30%, Commercial)	3.9	0.6	20	13%
Scenario B2 (30%, Multifamily)	3.8	0.7	22	15%
Scenario B3 (50%, Single Family, Commercial, Multifamily)	2.2	2.2	75	50%

Increasing adaptive reuse (City of Portland)				
Baseline Scenario C0 (No reduction for Single Family, Commercial, Multifamily)	15.9	0	0	0
Scenario C1 (5%, Commercial, Multifamily - <i>preserves approximately 0.2% of existing building stock area</i>)	15.3	0.6	21	4%
Scenario C2 (10%, Commercial, Multifamily - <i>preserves approximately 0.4% of existing building stock area</i>)	14.7	1.2	41	8%
Scenario C3 (30%, Commercial, Multifamily, Single Family - <i>preserves approximately 1.4% of existing building stock area</i>)	12.0	3.9	129	24%
Reducing typical housing unit size (City of Portland)				
Baseline Scenario D0 (No reduction for Single Family, Multifamily)	9.5	0	0	0
Scenario D1 (-20% unit size Single Family)	8.9	0.6	21	6%
Scenario D2 (-10% unit size Multifamily)	8.3	1.3	42	13%
Scenario D3 (30% of Multifamily units to be micro)	7.8	1.7	58	18%
Scenario D4 (-20% unit size Multifamily, Single Family)	7.3	2.3	75	24%

Table C3. Summary of preliminary carbon impacts and savings potentials for the Austin SCW for policy scenarios evaluated with the BECI Reduction Policy Calculator (A0-A3), Low-Carbon Concrete Policy Calculator (B0-B3), and Housing Size Policy Calculator (D0-D4).

Scenario	Approximate carbon emissions by 2050 (in thousand mtCO2e)	Approximate carbon savings by 2050 (in thousand mtCO2e)	Annual carbon savings (Thousand mtCO2e)	Overall percent reduction from Baseline
Requiring reductions in building embodied carbon intensity (Austin SCW)				
Baseline Scenario A0 (No reduction for Office, Retail, Multifamily, Hotel)	353	0	0	0
Scenario A1 (10%, Office, Retail, Hotel)	337	16	0.5	5%
Scenario A2 (40%, Multifamily)	283	70	2	20%
Scenario A3 (30%, Office, Multifamily, Retail, Hotel)	247	106	4	30%

Scenario A4 (40%, Office, Multi-family, Retail, Hotel)	212	141	5	40%
Scenario A5 (50%, Office, Multi-family, Retail, Hotel)	176	176	6	50%
Limiting the carbon of concrete (Austin SCW)				
Baseline Scenario B0 (No reduction for Office, Retail, Multifamily, Hotel)	103	0	0	0
Scenario B1 (30%, Office, Retail, Hotel)	87	15	0.5	15%
Scenario B2 (40%, Office, Multi-family, Retail, Hotel)	62	41	0.5	40%
Scenario B3 (50%, Office, Multi-family, Retail, Hotel)	51	51	2	50%
Reducing typical housing unit size (Austin SCW)				
Baseline Scenario D0	176	0	0	0
Scenario D1 (-20% unit size Single Family)	N/A	N/A	N/A	N/A
Scenario D2 (-10% unit size Multifamily)	158	17	0.5	10%
Scenario D3 (30% of Multifamily units to be micro)	143	33	1	19%
Scenario D4 (-20% unit size Multifamily)	141	35	1	20%