

Table S1. The CMAQ default concentration profiles for the relevant species at the four boundaries. The levels of the 1st, 8th, and 15th layers correspond to ~17, ~580, and ~1500 m, respectively. The concentration unit is ppb. The description of the lumped VOC groups can be found in Carter (2000).

	West boundary			North boundary			East boundary			South boundary		
	1 st layer	8 th layer	15 th layer	1 st layer	8 th layer	15 th layer	1 st layer	8 th layer	15 th layer	1 st layer	8 th layer	15 th layer
O ₃	3.5×10 ¹	4.1×10 ¹	4.6×10 ¹	3.5×10 ¹	3.6×10 ¹	4.3×10 ¹	3.0×10 ¹	3.6×10 ¹	4.3×10 ¹	3.0×10 ¹	3.6×10 ¹	4.3×10 ¹
NO	8.3×10 ⁻²	8.3×10 ⁻²	7.1×10 ⁻²	8.3×10 ⁻²	7.1×10 ⁻²	3.0×10 ⁻²	0	0	0	1.0×10 ⁻²	7.1×10 ⁻³	0
NO ₂	1.7×10 ⁻¹	1.7×10 ⁻¹	1.4×10 ⁻¹	1.7×10 ⁻¹	1.4×10 ⁻¹	6.0×10 ⁻²	1.0×10 ⁻²	7.1×10 ⁻³	0	1.0×10 ⁻²	7.1×10 ⁻³	0
PAN	1.5×10 ⁻¹	1.5×10 ⁻¹	1.3×10 ⁻¹	1.0×10 ⁻¹	8.6×10 ⁻²	5.0×10 ⁻²	1.5×10 ⁻²	1.5×10 ⁻²	1.5×10 ⁻²	1.5×10 ⁻²	1.5×10 ⁻²	1.5×10 ⁻²
HCHO	4.0×10 ⁻¹	4.0×10 ⁻¹	4.0×10 ⁻¹	2.5×10 ⁻¹	2.5×10 ⁻¹	2.4×10 ⁻¹	2.5×10 ⁻¹	2.5×10 ⁻¹	2.4×10 ⁻¹	2.5×10 ⁻¹	2.5×10 ⁻¹	2.4×10 ⁻¹
ALK1	1.0×10 ⁻¹	1.0×10 ⁻¹	9.3×10 ⁻²	1.0×10 ⁻¹	9.4×10 ⁻²	6.6×10 ⁻²	1.0×10 ⁻¹	1.0×10 ⁻¹	9.1×10 ⁻²	1.0×10 ⁻¹	1.0×10 ⁻¹	9.1×10 ⁻²
ALK2	4.0×10 ⁻²	4.0×10 ⁻²	3.7×10 ⁻²	2.0×10 ⁻²	1.9×10 ⁻²	1.3×10 ⁻²	6.0×10 ⁻³	6.0×10 ⁻³	5.4×10 ⁻³	6.0×10 ⁻³	6.0×10 ⁻³	4.8×10 ⁻³
ARO1	1.0×10 ⁻²	5.0×10 ⁻³	4.4×10 ⁻³	1.0×10 ⁻³	1.0×10 ⁻³	1.0×10 ⁻³	0	0	0	0	0	0
ARO2	3.0×10 ⁻³	1.5×10 ⁻³	4.0×10 ⁻⁴	2.0×10 ⁻⁴	1.7×10 ⁻⁴	7.1×10 ⁻⁵	0	0	0	0	0	0
CO	8.0×10 ¹	8.0×10 ¹	8.0×10 ¹	8.0×10 ¹	8.0×10 ¹	7.7×10 ¹	8.0×10 ¹	8.0×10 ¹	7.9×10 ¹	7.0×10 ¹	7.0×10 ¹	7.0×10 ¹

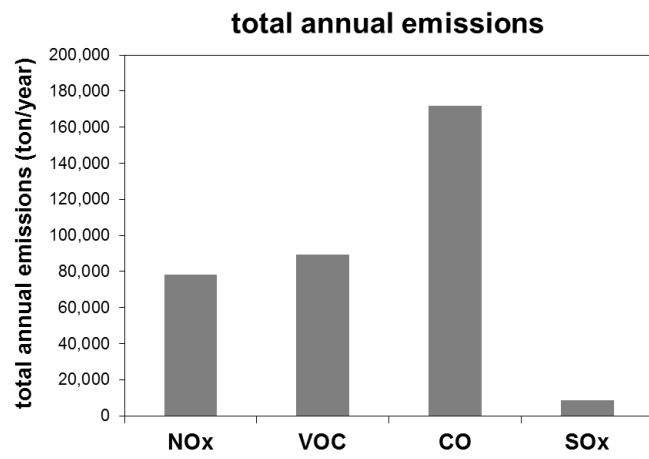


Figure S1. Total annual emissions of NO_x, VOC, CO, and SO_x (= SO₂ + SO₃) in Seoul.