

Supplemental Table 1: Summary statistics for concentrations of hazardous air pollutants

Hazardous Air Pollutant ^a	Percentile				
	1 st	25 th	50 th	75 th	99 th
1,3 Butadiene	0.15	0.22	0.27	0.37	0.62
1,4 Para-Dichlorobenzene	0.08	0.13	0.16	0.21	0.40
15 Polycyclic Aromatic Hydrocarbon	0.008	0.014	0.019	0.025	0.053
Acetaldehyde	2.29	2.38	2.44	2.55	2.85
Acrolein	0.12	0.16	0.20	0.27	0.39
Arsenic	0.0005	0.0006	0.0007	0.0009	0.0013
Benzene	0.83	1.14	1.28	1.62	2.53
Cadmium	0.00012	0.00021	0.00028	0.00036	0.00084
Chromium VI	0.00007	0.00009	0.00011	0.00014	0.00022
Diesel Particulate Matter	0.37	0.74	0.97	1.37	2.44
Ethylbenzene	0.21	0.39	0.51	0.76	1.41
Formaldehyde	2.55	2.75	2.88	3.06	3.56
Lead	0.0013	0.0017	0.0020	0.0026	0.0127
Manganese	0.0015	0.0020	0.0025	0.0035	0.0697
Methylene Chloride	0.65	1.51	2.88	6.10	22.40
Naphthalene	0.05	0.13	0.18	0.23	0.35
Nickel	0.0009	0.0014	0.0017	0.0023	0.0161
Perchloroethylene	0.09	0.12	0.14	0.19	0.53
Trichloroethylene	0.029	0.033	0.041	0.056	0.18

^a Hazardous air pollutants are measured in µg/m³.

Supplemental Table 2: Unadjusted models for regional air toxics for term birth weight, preterm birth, and small for gestational age

Hazardous Air Pollutant Measures	Term Birth Weight (β 95% CI)		Preterm Birth (β 95% CI)		SGA (β 95% CI)	
	Q5 vs. Q1	Log IQR	Q5 vs. Q1	Log IQR	Q5 vs. Q1	Log IQR
1,3 Butadiene	-33.87 (-48.23, -19.52)	-11.54 (-16.50, -6.58)	0.95 (0.84, 1.08)	0.98 (0.94, 1.02)	1.23 (1.12, 1.35)	1.06 (1.02, 1.09)
1,4 Para-Dichlorobenzene	-10.34 (-18.46, -2.23)	-7.44 (-12.38, -2.51)	0.98 (0.92, 1.06)	0.97 (0.93, 1.02)	1.10 (1.04, 1.16)	1.07 (1.04, 1.11)
15 Polycyclic Aromatic Hydrocarbon	-19.72 (-28.55, -10.89)	-16.72 (-20.90, -12.55)	1.09 (1.01, 1.18)	1.05 (1.02, 1.09)	1.12 (1.05, 1.19)	1.10 (1.07, 1.13)
Acetaldehyde	-24.19 (-34.97, -13.41)	-135.9 (-170.3, -101.5)	1.00 (0.91, 1.10)	1.16 (0.86, 1.57)	1.20 (1.11, 1.29)	2.35 (1.87, 2.96)
Acrolein	-23.76 (-30.28, -17.24)	-27.99 (-33.65, -22.33)	1.12 (1.06, 1.18)	1.15 (1.09, 1.21)	1.14 (1.0, 1.19)	1.13 (1.08, 1.17)
Arsenic	-24.16 (-35.44, -12.89)	-25.50 (-32.93, -18.07)	1.03 (0.94, 1.14)	1.00 (0.94, 1.07)	1.14 (1.06, 1.23)	1.17 (1.11, 1.23)
Benzene	-27.00 (-32.89, -21.12)	-26.01 (-32.78, -19.25)	1.05 (0.99, 1.10)	1.01 (0.95, 1.08)	1.19 (1.14, 1.24)	1.19 (1.14, 1.25)
Cadmium	-17.95 (-45.75, 9.854)	-11.54 (-16.50, -6.578)	1.01 (0.78, 1.30)	1.01 (0.97, 1.05)	1.10 (0.91, 1.34)	1.08 (1.04, 1.11)
Chromium VI	-41.82 (-53.30, -30.34)	-25.45 (-31.96, -18.95)	1.02 (0.92, 1.13)	1.02 (0.96, 1.08)	1.26 (1.17, 1.35)	1.18 (1.13, 1.23)
Diesel Particulate Matter	-13.49 (-22.31, -4.68)	-14.06 (-18.21, -9.90)	1.01 (0.93, 1.09)	1.01 (0.97, 1.05)	1.13 (1.06, 1.20)	1.09 (1.06, 1.12)
Ethylbenzene	-19.79 (-27.15, -12.43)	-11.96 (-15.88, -8.04)	1.00 (0.94, 1.07)	0.98 (0.95, 1.02)	1.14 (1.09, 1.20)	1.09 (1.06, 1.12)
Formaldehyde	-37.51 (-58.16, -16.85)	-102.5 (-126.1, -78.95)	1.08 (0.90, 1.29)	1.20 (0.98, 1.48)	1.14 (0.99, 1.31)	1.93 (1.64, 2.26)
Lead	-35.31 (-47.50, -23.11)	-20.99 (-25.22, -16.76)	1.04 (0.94, 1.16)	1.08 (1.04, 1.12)	1.11 (1.02, 1.21)	1.06 (1.03, 1.09)
Manganese	17.94 (-19.28, 55.16)	-0.97 (-3.60, 1.657)	0.87 (0.61, 1.23)	1.00 (0.98, 1.02)	0.88 (0.67, 1.15)	1.02 (1.00, 1.04)
Methylene Chloride	-31.34 (-37.12, -25.57)	-11.00 (-13.00, -9.00)	1.11 (1.06, 1.17)	1.05 (1.03, 1.07)	1.12 (1.08, 1.17)	1.04 (1.03, 1.05)
Naphthalene	0.15 (-37.58, 37.88)	-20.23 (-24.52, -15.94)	0.87 (0.61, 1.24)	1.05 (1.01, 1.09)	0.98 (0.75, 1.28)	1.12 (1.09, 1.15)
Nickel	12.84 (-23.80, 49.49)	3.49 (0.33, 6.66)	0.84 (0.59, 1.19)	1.02 (0.99, 1.04)	0.86 (0.66, 1.12)	0.99 (0.96, 1.01)
Perchloroethylene	-14.57 (-25.59, -3.548)	-9.55 (-14.25, -4.84)	0.98 (0.89, 1.08)	0.99 (0.95, 1.03)	1.12 (1.04, 1.20)	1.06 (1.03, 1.10)
Trichloroethylene	1.53 (-6.28, 9.34)	1.10 (-3.12, 5.32)	0.99 (0.92, 1.06)	0.98 (0.94, 1.02)	1.03 (0.98, 1.09)	1.02 (0.99, 1.04)

Continuous air toxics measures are standardized via the log of the interquartile range. Term birth weight models exclude infants with gestational ages under 37 weeks. Adjustment covariates include birth year, birth month, infant sex, maternal and paternal race, maternal and paternal ethnicity, maternal and paternal education, payment mechanism, maternal alcohol and tobacco use during pregnancy, gestational or chronic diabetes, gestational or chronic hypertension, WIC status, maternal weight gain, census tract median household income, census tract percent population below poverty line, census tract percent racial minority, and gestational age (birth weight only).

Supplemental Table 3: Mean concentrations of hazardous air pollutants by race and ethnicity

Hazardous Air Pollutant ^a	Population	White	Black	American Indian	Asian	Non-Hispanic	Hispanic
1,3 Butadiene	0.31 0.12	0.30 0.12	0.29 0.10	0.30 0.11	0.30 0.11	0.30 0.11	0.33 0.12
1,4 Para-Dichlorobenzene	0.18 0.07	0.18 0.07	0.18 0.06	0.17 0.06	0.20 0.08	0.18 0.07	0.19 0.07
15 Polycyclic Aromatic Hydrocarbon	0.02 0.01						
Acetaldehyde	2.47 0.13	2.48 0.13	2.47 0.12	2.48 0.13	2.49 0.13	2.47 0.13	2.52 0.15
Acrolein	0.22 0.07	0.22 0.07	0.26 0.08	0.23 0.07	0.21 0.06	0.22 0.07	0.22 0.07
Arsenic	0.00077 0.00020	0.00077 0.00020	0.00076 0.00017	0.00077 0.00019	0.00079 0.00020	0.00076 0.00019	0.00080 0.0002
Benzene	1.42 0.40	1.41 0.40	1.39 0.33	1.41 0.39	1.45 0.40	1.39 0.39	1.52 0.44
Cadmium	0.00032 0.00032	0.00032 0.00033	0.00032 0.00026	0.00032 0.00040	0.00032 0.00031	0.00032 0.00034	0.00033 0.00024
Chromium VI	0.00012 0.00004	0.00012 0.00003	0.00012 0.00003	0.00012 0.00004	0.00012 0.00004	0.00012 0.00004	0.00013 0.00004
Diesel Particulate Matter	1.10 0.48	1.09 0.48	1.09 0.40	1.08 0.46	1.12 0.47	1.07 0.46	1.21 0.53
Ethylbenzene	0.61 0.29	0.60 0.29	0.57 0.23	0.58 0.27	0.64 0.30	0.59 0.28	0.67 0.31
Formaldehyde	2.93 0.23	2.92 0.23	2.95 0.22	2.93 0.22	2.94 0.22	2.91 0.22	2.97 0.25
Lead	0.0026 0.0023	0.0026 0.0023	0.0031 0.0022	0.0027 0.0013	0.0025 0.0021	0.0026 0.0024	0.0027 0.0022
Manganese	0.0056 0.0279	0.0054 0.0028	0.0083 0.0266	0.0073 0.0325	0.0051 0.0281	0.0056 0.0295	0.0052 0.0194
Methylene Chloride	4.74 4.81	4.64 4.78	6.98 5.21	5.23 5.23	4.31 4.48	4.70 4.73	4.91 5.10
Naphthalene	0.19 0.17	0.19 0.17	0.20 0.13	0.19 0.19	0.19 0.17	0.19 0.18	0.20 0.11
Nickel	0.0028 0.012	0.0028 0.012	0.0024 0.009	0.0032 0.013	0.0025 0.012	0.0029 0.013	0.0025 0.007
Perchloroethylene	0.18 0.09	0.17 0.09	0.16 0.08	0.16 0.08	0.17 0.08	0.17 0.08	0.18 0.10
Trichloroethylene	0.05 0.03	0.05 0.03	0.05 0.03	0.05 0.03	0.05 0.03	0.05 0.03	0.06 0.04

^a Hazardous air pollutants are measured in $\mu\text{g}/\text{m}^3$.

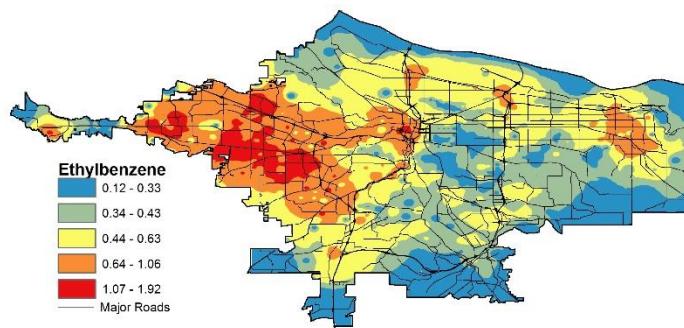
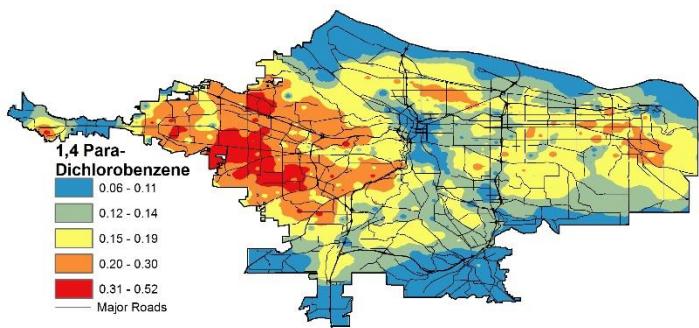
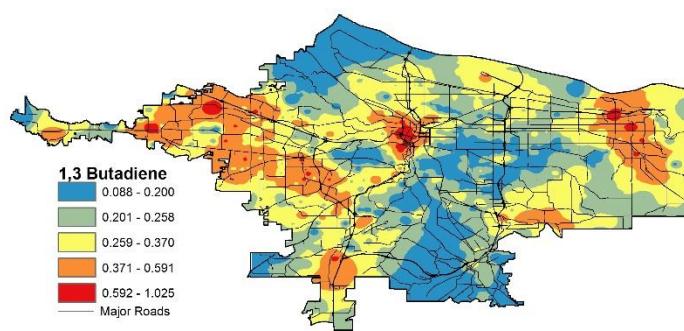
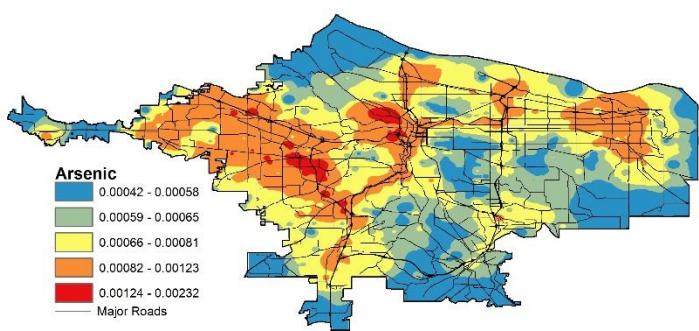
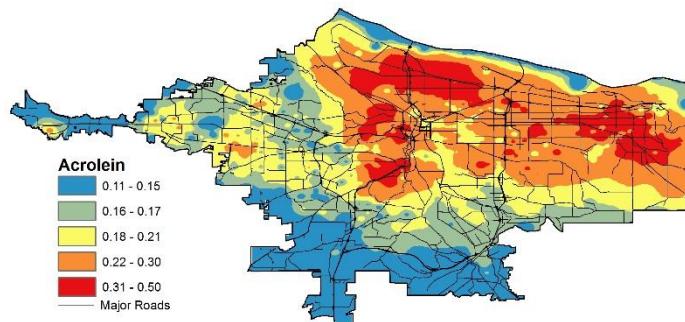
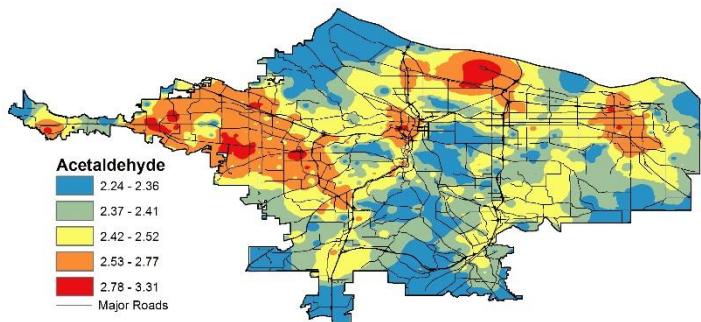
^b Measures presented are means by pollutant with standard deviation presented below in italics.

Supplemental Table 4: Full results of stratified models of composite hazardous air pollution exposure concentrations and term birth weight, preterm birth, and small for gestational age by key sociodemographic characteristics

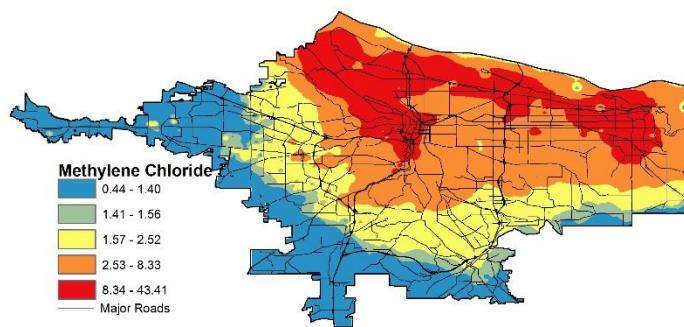
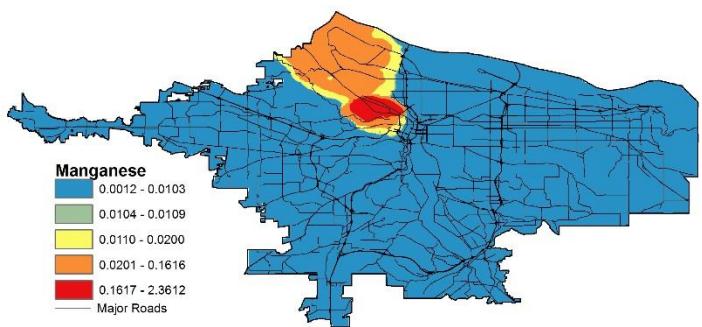
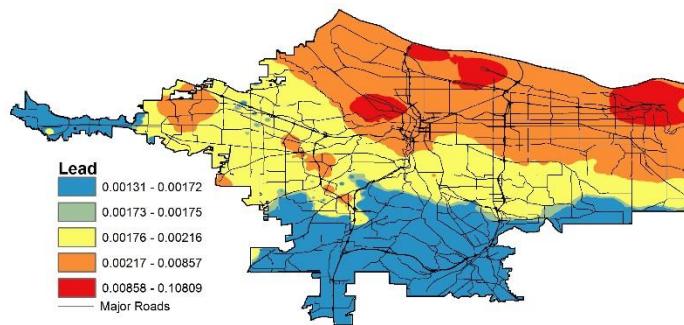
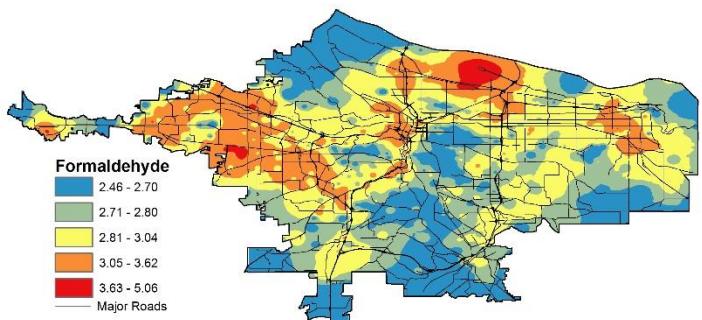
Sociodemographic Characteristic	n	Term Birth Weight (β 95% CI)		Preterm Birth (β 95% CI)		SGA (β 95% CI)	
		Q5 vs. Q1	Log IQR	Q5 vs. Q1	Log IQR	Q5 vs. Q1	Log IQR
Race							
White	216,431	-4.19 (-10.14, 1.77)	-4.96, (-10.99, 1.07)	1.02 (0.96, 1.08)	1.01 (0.95, 1.07)	0.99 (0.94, 1.03)	1.00 (0.95, 1.05)
Black	11,024	20.14 (-12.76, 53.03)	19.38 (-8.05, 46.81)	0.92 (0.69, 1.22)	1.10 (0.87, 1.38)	0.99 (0.81, 1.23)	0.93 (0.78, 1.10)
American Indian	2,264	35.21 (-29.45, 99.88)	55.83 (-4.92, 116.6)	1.31 (0.77, 2.24)	1.27 (0.79, 2.05)	0.62 (0.37, 1.06)	0.67 (0.40, 1.12)
Asian & Pacific Islander	24,906	-7.91 (-26.51, 10.69)	-9.72 (-28.52, 9.09)	0.98 (0.81, 1.19)	1.00 (0.82, 1.21)	1.02 (0.90, 1.16)	1.05 (0.92, 1.19)
Ethnicity							
Hispanic	53,096	2.19 (-10.00, 14.37)	6.47 (-5.70, 18.63)	1.03 (0.91, 1.16)	1.05 (0.93, 1.18)	0.94 (0.86, 1.03)	0.93 (0.85, 1.02)
Not Hispanic	224,641	-4.50 (-10.63, 1.62)	-6.64 (-12.84, -0.45)	1.03 (0.97, 1.10)	1.02 (0.96, 1.09)	0.99 (0.94, 1.04)	1.01 (0.97, 1.06)
Payment Mechanism							
Medicaid / OHP	93,885	1.42 (-8.05, 10.88)	3.79 (-5.50, 13.08)	1.04 (0.95, 1.14)	1.05 (0.96, 1.14)	0.98 (0.91, 1.05)	0.96 (0.90, 1.03)
Private	175,043	-4.97 (-11.88, 1.95)	-6.46 (-13.50, 0.58)	1.01 (0.94, 1.08)	1.00 (0.93, 1.08)	0.98 (0.93, 1.04)	1.02 (0.96, 1.08)
Self-Pay	7,078	7.63 (-27.81, 43.07)	-10.78 (-45.38, 23.82)	0.99 (0.72, 1.38)	1.01 (0.73, 1.39)	0.95 (0.73, 1.24)	0.97 (0.75, 1.26)
Education							
$\leq 8^{\text{th}}$ grade	16,107	8.55 (-14.58, 31.68)	11.45 (-10.60, 33.51)	1.01 (0.82, 1.26)	0.98 (0.80, 1.21)	1.00 (0.85, 1.19)	0.95 (0.81, 1.11)
9 th grade to high school	92,116	1.33 (-8.16, 10.81)	2.31 (-7.22, 11.83)	1.03 (0.94, 1.13)	1.04 (0.95, 1.13)	0.95 (0.89, 1.02)	0.95 (0.89, 1.02)
College (<4 years)	63,370	3.19 (-8.31, 14.69)	2.30 (-9.40, 14.00)	0.98 (0.88, 1.10)	1.00 (0.89, 1.12)	1.00 (0.91, 1.09)	1.01 (0.92, 1.10)
College (≥ 4 years)	104,471	-11.20 (-20.23, -2.18)	-14.20 (-23.27, -5.13)	1.07 (0.97, 1.18)	1.04 (0.94, 1.15)	1.00 (0.92, 1.08)	1.05 (0.97, 1.13)
% Neighborhood Poverty							
Q1	55,825	-16.14 (-32.09, -0.19)	-26.36 (-41.27, -11.45)	1.07 (0.91, 1.26)	1.06 (0.90, 1.23)	1.10 (0.97, 1.25)	1.19 (1.06, 1.34)
Q2	56,111	1.59 (-12.03, 15.21)	9.83 (-3.79, 23.44)	1.09 (0.95, 1.25)	1.08 (0.94, 1.23)	0.93 (0.84, 1.04)	0.94 (0.84, 1.05)
Q3	55,652	-0.25 (-11.54, 11.03)	-4.68 (-16.99, 7.63)	1.05 (0.94, 1.18)	1.00 (0.89, 1.13)	0.94 (0.86, 1.02)	0.93 (0.84, 1.02)
Q4	55,688	-3.48 (-15.95, 8.99)	-3.44 (-14.53, 7.65)	1.08 (0.95, 1.22)	1.09 (0.98, 1.22)	0.99 (0.90, 1.09)	1.01 (0.93, 1.10)
Q5	55,773	-1.76 (-15.49, 11.97)	4.01 (-7.54, 15.56)	0.91 (0.79, 1.04)	0.93 (0.83, 1.05)	0.96 (0.87, 1.07)	0.96 (0.88, 1.04)

Term birth weight models exclude infants with gestational ages under 37 weeks. Adjustment covariates include birth year, birth month, infant sex, maternal and paternal race, maternal and paternal ethnicity, maternal and paternal education, payment mechanism, maternal alcohol and tobacco use during pregnancy, gestational or chronic diabetes, gestational or chronic hypertension, WIC status, maternal weight gain, census tract median household income, census tract percent population below poverty line, census tract percent racial minority, and PATS pollutants, and gestational age (birth weight only).

Supplemental Figure 1: Portland Air Toxic CALPUFF model outputs for additional pollutants by geometric intervals



Supplemental Figure 1: Portland Air Toxic CALPUFF model outputs for additional pollutants by geometric intervals (cont'd)



Supplemental Figure 1: Portland Air Toxic CALPUFF model outputs for additional pollutants by geometric intervals (cont'd)

