

## Supplemental material

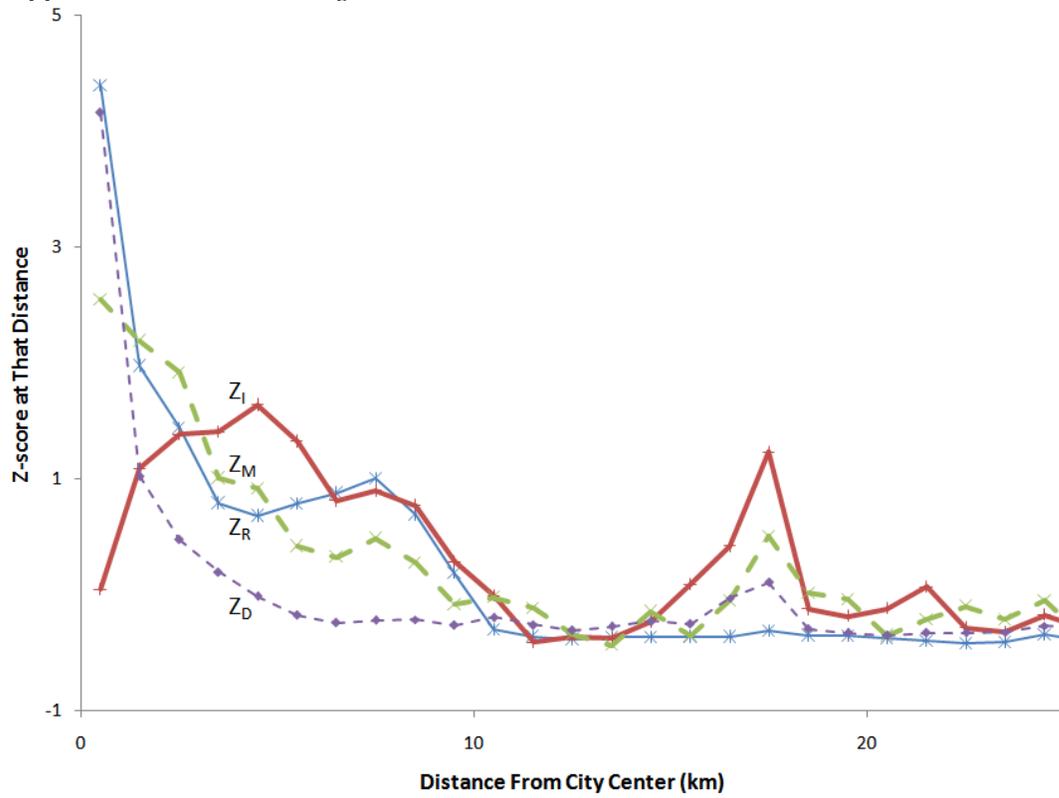
This online supplement contains two figures and three tables.

Supplemental Material, Figure 1 is analogous to Figure 2 in the main text, but with values for walkability Z-scores (see Eq. 1 in main text) rather than walkability and pollutant concentrations. Supplemental Material, Figure 2 presents the values used to determine the length scales given in Table 2 in the main text.

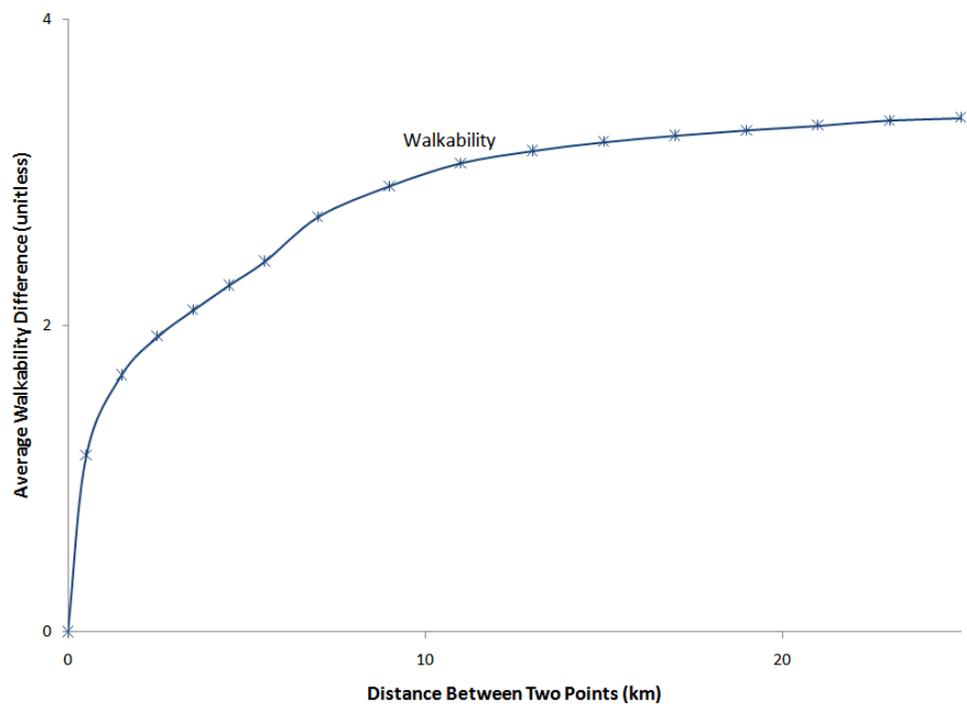
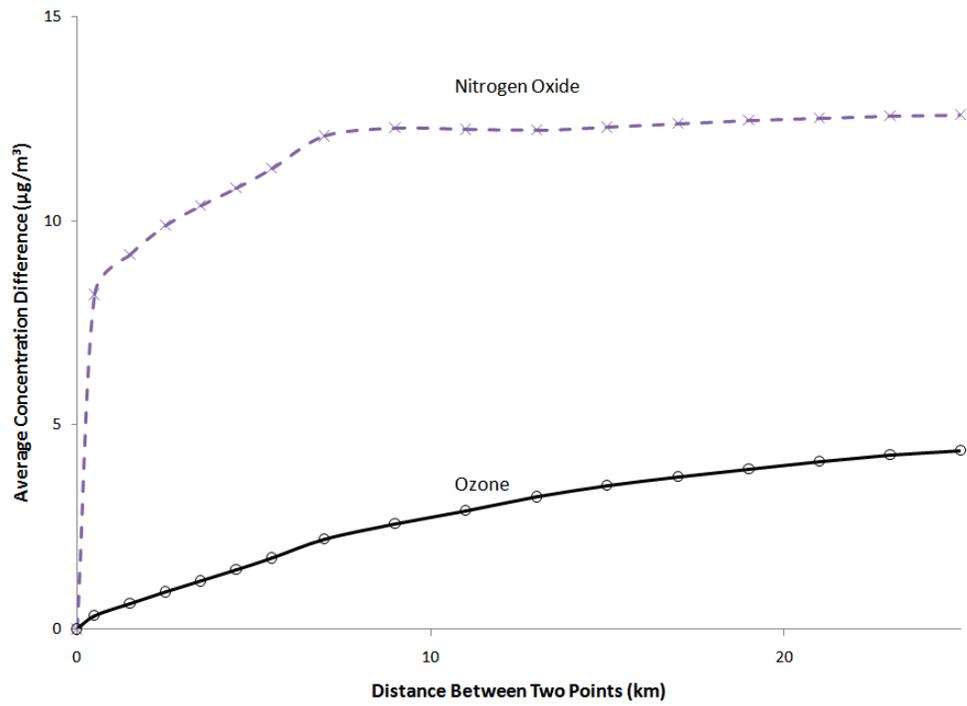
Supplemental Material, Table 1 presents pair-wise correlations among the three main variables (walkability, NO, ozone) and the four components in the walkability calculation (statistical Z scores; see Eq. 1). Supplemental Material, Table 2 presents two linear regression models relating walkability (dependent variable) to NO and ozone (independent variables). Both tables incorporate 47,702 observations (i.e., one per postal code). Correlations in Supplemental Material, Table 1 and models in Supplemental Material, Table 2 are all statistically significant at  $\alpha=0.0001$ . Both tables confirm that walkability is directly correlated with NO and inversely correlated with ozone. Supplemental Material, Table 2 indicates that the model  $R^2$  is similar for a linear model (Model 1) as for a model with squared terms (Model 2).

Supplemental Material, Table 3 presents pair-wise correlations among the three main variables (walkability, NO, ozone) and two measures of morning peak-flow traffic (automobile density, truck density; units: vehicles per hectare) with multiple radii of each Postal Code centroid. In this table (column 1), “AD” refers to automobile density, “TD” refers to truck density, and the number indicates the distance (i.e., radius; units: meters) surrounding each Postal Code centroid that was used to sum the traffic counts. For example, AD\_100 indicates the automobile density within 100 m and TD\_750 indicates the truck density within 750 m.

Supplemental Material, Figures



Supplemental Material, Figure 1. Mean value for Z-score parameters, as a function of distance from city-center (Vancouver Courthouse).



Supplemental Material, Figure 2. Differences in each parameter (upper panel: NO and O<sub>3</sub>; lower panel: walkability) as a function of separation distance between two points.

Supplemental Material, Tables

Supplemental Material, Table 1: Pairwise correlations

	Walkability	NO	Ozone	Z <sub>D</sub>	Z <sub>I</sub>	Z <sub>R</sub>	Z <sub>M</sub>
Walkability	1.0000						
NO	0.4875	1.0000					
Ozone	-0.6994	-0.3782	1.0000				
Z <sub>D</sub>	0.6165	0.5341	-0.4600	1.0000			
Z <sub>I</sub>	0.7980	0.2385	-0.5427	0.2108	1.0000		
Z <sub>R</sub>	0.7659	0.4205	-0.6244	0.5111	0.3922	1.0000	
Z <sub>M</sub>	0.7028	0.4194	-0.4121	0.4970	0.2839	0.5151	1.0000

Supplemental Material, Table 2: Linear regression models for walkability as a function of NO and ozone concentrations

	Coefficient	Std Error	t	P> t
<b>Model #1<sup>a</sup></b>				
[constant]	10.0381	0.0761	132	0.000
NO	0.0595	0.0007	80	0.000
Ozone	-0.4201	0.0023	-184	0.000
<b>Model #2<sup>b</sup></b>				
[constant]	23.0242	0.2855	81	0.000
NO	0.1215	0.0023	54	0.000
NO_squared	$-7.42 \times 10^{-4}$	$0.21 \times 10^{-4}$	-36	0.000
Ozone	-1.4622	0.0198	-74	0.000
Ozone_squared	0.0187	0.0004	53	0.000

<sup>a</sup> Model R<sup>2</sup>=0.547. Adjusted R<sup>2</sup> is equal to R<sup>2</sup>. Root MSE = 2.25.

<sup>b</sup> Model R<sup>2</sup>=0.580. Adjusted R<sup>2</sup> is equal to R<sup>2</sup>. Root MSE = 2.17.

Supplemental Material, Table 3: Correlations with morning peak-flow traffic

	Walkability	NO	Ozone	Z <sub>D</sub>	Z <sub>I</sub>	Z <sub>R</sub>	Z <sub>M</sub>
ad_100	0.36	0.68	-0.31	0.46	0.11	0.35	0.34
ad_200	0.45	0.67	-0.40	0.58	0.14	0.44	0.43
ad_300	0.51	0.64	-0.44	0.64	0.17	0.48	0.48
ad_500	0.57	0.61	-0.50	0.70	0.20	0.54	0.54
ad_750	0.61	0.59	-0.55	0.73	0.24	0.57	0.56
ad_1000	0.64	0.60	-0.59	0.74	0.27	0.59	0.57
td_100	0.18	0.50	-0.14	0.20	0.04	0.15	0.24
td_200	0.22	0.47	-0.18	0.24	0.06	0.18	0.30
td_300	0.25	0.42	-0.20	0.26	0.07	0.19	0.34
td_500	0.27	0.38	-0.22	0.27	0.08	0.21	0.38
td_750	0.31	0.37	-0.25	0.28	0.11	0.23	0.41
td_1000	0.34	0.37	-0.28	0.29	0.15	0.24	0.42