

Measuring Spatial and Temporal PM_{2.5} Variations in Sacramento, California, Communities Using a Network of Low-Cost Sensors

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Supplementary Material

Table S1. The change in measurement from the pre- and post-study periods over a range of measurement values, using the linear regressions from the pre- and post-study periods presented in Table 1.

AirBeam	Change in 5ug/m3	Change in 10 ug/m3	Change in 20 ug/m3	Change in 30 ug/m3	Change in 40 ug/m3	Change in 50 ug/m3	% Change in 5 ug/m3	% Change in 10 ug/m3	% Change in 20 ug/m3	% Change in 30 ug/m3	% Change in 40 ug/m3	% Change in 50 ug/m3
13 th Ave	-0.03	-0.29	-0.81	-1.33	-1.85	-2.37	-0.58	-2.89	-4.05	-4.44	-4.63	-4.75
24 th Ave	-0.21	-0.36	-0.66	-0.96	-1.26	-1.56	-4.29	-3.64	-3.32	-3.21	-3.16	-3.13
64 th St	0.61	0.39	-0.05	-0.49	-0.93	-1.37	12.27	3.93	-0.24	-1.63	-2.33	-2.74
ARB T St 2	0.22	0.72	1.72	2.72	3.73	4.73	4.31	7.17	8.60	9.08	9.32	9.46
ARB T St 3	0.75	0.39	-0.32	-1.04	-1.76	-2.47	15.00	3.92	-1.62	-3.47	-4.39	-4.95
Alderwood	1.16	0.71	-0.19	-1.10	-2.00	-2.90	23.26	7.11	-0.96	-3.66	-5.00	-5.81
Coroval	0.30	-0.09	-0.87	-1.65	-2.43	-3.21	6.08	-0.86	-4.33	-5.49	-6.07	-6.42
Del Paso 2	1.22	0.71	-0.31	-1.34	-2.36	-3.38	24.31	7.05	-1.57	-4.45	-5.89	-6.75
Del Paso 3	-0.13	-0.45	-1.07	-1.69	-2.32	-2.94	-2.66	-4.45	-5.35	-5.64	-5.79	-5.88
Darwin St	0.53	0.28	-0.22	-0.72	-1.22	-1.72	10.60	2.80	-1.09	-2.39	-3.04	-3.43
Henrietta Dr	-0.79	-1.13	-1.79	-2.45	-3.12	-3.78	-15.85	-11.25	-8.95	-8.18	-7.80	-7.57
Socorro Way	0.76	0.53	0.08	-0.38	-0.84	-1.30	15.28	5.35	0.38	-1.27	-2.10	-2.59
Tristan Cir	-1.87	-1.75	-1.51	-1.27	-1.04	-0.80	-37.32	-17.48	-7.56	-4.25	-2.60	-1.60
Wyman	0.01	0.12	0.35	0.57	0.80	1.02	0.26	1.25	1.75	1.91	1.99	2.04
79thSt	0.99	1.56	2.69	3.83	4.96	6.10	19.80	15.57	13.46	12.76	12.40	12.19
ARB T St	-0.86	-0.56	0.03	0.62	1.20	1.79	-17.15	-5.63	0.13	2.05	3.01	3.59
Del Paso	-0.03	0.26	0.86	1.45	2.04	2.64	-0.69	2.63	4.28	4.84	5.11	5.28
Hermosa St	-0.01	0.14	0.44	0.75	1.05	1.35	-0.16	1.43	2.22	2.49	2.62	2.70
T St Tier 3	-2.11	-1.59	-0.54	0.52	1.57	2.62	-42.25	-15.87	-2.68	1.72	3.92	5.24

Table S2. Matrix showing the p-value results of the Pairwise Wilcoxon Rank test for PM measurements in EJ vs. non-EJ sites; EJ sites are in the first column, and non-EJ sites are in the top row. A p-value equal to 1 indicates that no statistical difference in the mean between the two sites can be determined. A p-value less than 0.05 indicates that a difference in the mean is significant at the 95% confidence level.

	Alderwood	ARB T St	Del Paso Manor	T St Tier 3	Wymann	13th Ave	64th St	79th St
Coroval	1	1	0.14	1	0.66	1	1	0.001
Darwin St	1	0.68	1	1	1	1	1	1
Henrietta Dr	1	1	1	1	1	1	1	0.06
Hermosa St	1	0.74	1	1	1	1	1	1
Socorro Way	1	1	1	1	1	1	1	0.13
Tristan Cir	1	0.0005	1	0.45	1	1	1	1
24th Ave	1	1	1	1	1	1	1	0.04

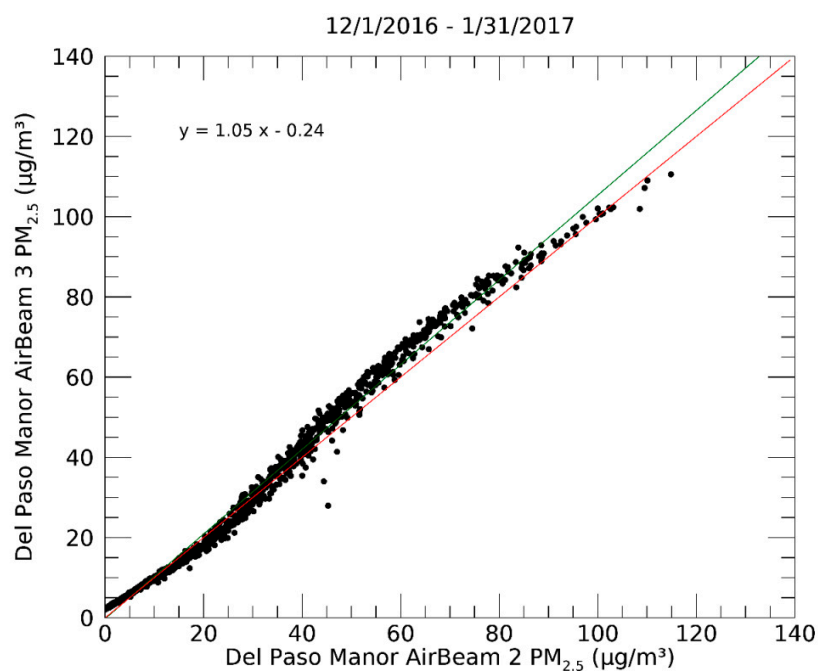


Figure S1. Scatterplot showing the correlation between two collocated AirBeams at Del Paso Manor during the study period. Linear regression, $y = 1.05x - 0.24$ shown in green. 1:1 line shown in red.

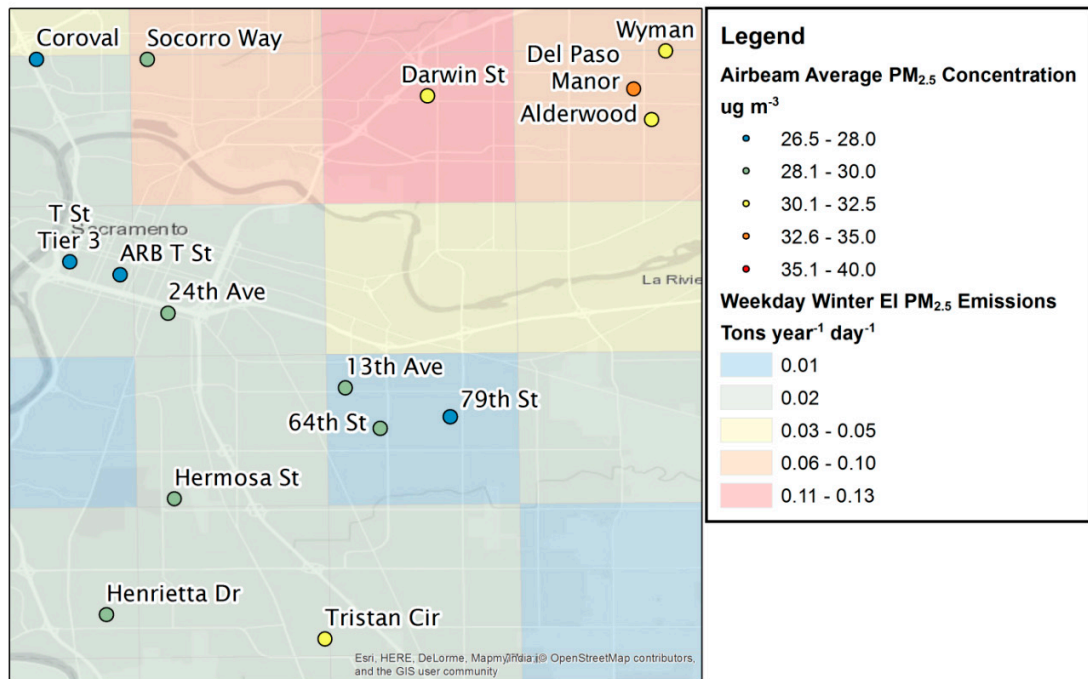


Figure S2. Map of 4-by-4 km gridded winter weekday PM_{2.5} emissions and average AirBeam PM_{2.5} concentrations from the December 2016 to January 2017 period.

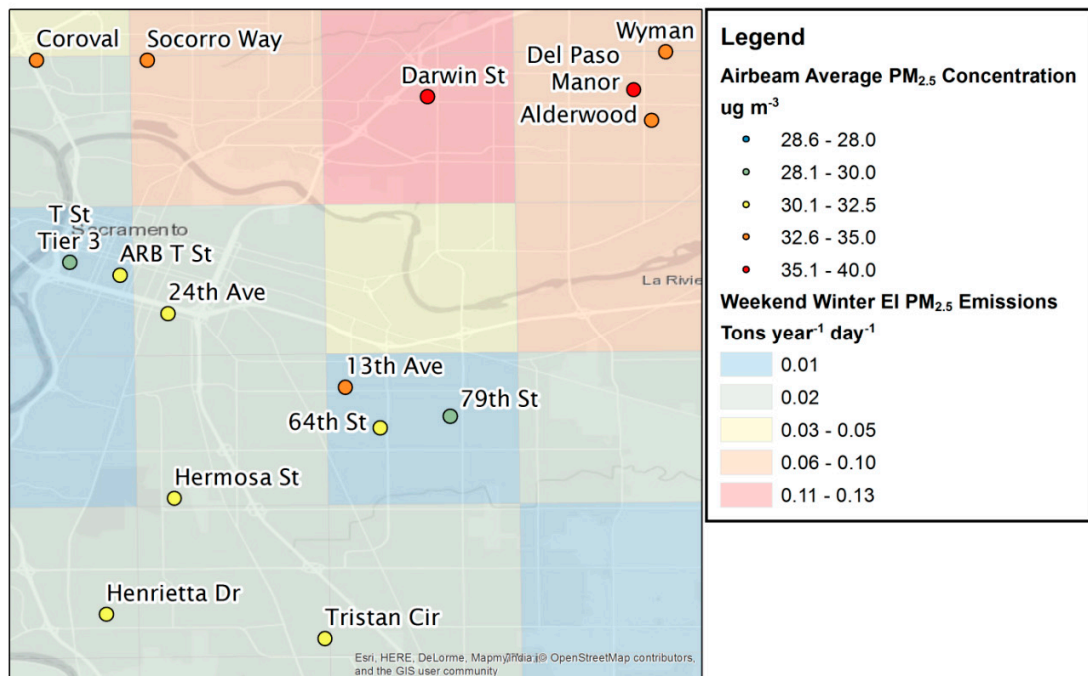


Figure S3. Map of 4-by-4 km gridded winter weekend PM_{2.5} emissions and average AirBeam PM_{2.5} concentrations from the December 2016 to January 2017 period.