

Table S1. PM_{2.5} pollutant concentrations in each district of Beijing at different times.

| District | N | Winter Working Day | | | Winter Non-Working Day | | | Summer Working Day | | | Summer Non-Working Day | | |
|-----------|---|--------------------|-------|-------|------------------------|-------|-------|--------------------|------|-------|------------------------|------|-------|
| | | 0:00 | 8:00 | 18:00 | 0:00 | 8:00 | 18:00 | 0:00 | 8:00 | 18:00 | 0:00 | 8:00 | 18:00 |
| Dongcheng | 2 | 234.5 | 139.0 | 246.5 | 326.5 | 143.0 | 428.5 | 42.0 | 56.0 | 40.0 | 37.5 | 50.5 | 27.5 |
| Xicheng | 2 | 229.5 | 94.0 | 198.5 | 295.5 | 116.5 | 391.5 | 44.0 | 62.5 | 38.5 | 38.0 | 59.0 | 19.0 |
| Haidian | 4 | 144.0 | 46.0 | 92.3 | 121.8 | 112.3 | 223.3 | 45.8 | 57.8 | 41.5 | 33.5 | 37.5 | 29.5 |
| Chaoyang | 4 | 223.0 | 80.0 | 111.0 | 185.5 | 106.3 | 324.5 | 38.0 | 46.0 | 36.5 | 40.0 | 49.8 | 20.5 |
| Fengtai | 4 | 225.0 | 92.8 | 223.3 | 285.5 | 127.0 | 423.5 | 39.8 | 43.5 | 33.3 | 31.3 | 42.3 | 21.0 |
| Shunyi | 1 | 59.0 | 28.0 | 197.0 | 198.0 | 84.0 | 139.0 | 28.0 | 31.0 | 38.0 | 33.0 | 33.0 | 10.0 |
| Tongzhou | 2 | 244.0 | 283.0 | 247.0 | 326.5 | 256.5 | 510.0 | 35.0 | 65.5 | 42.5 | 26.0 | 45.0 | 17.0 |
| Daxing | 3 | 261.7 | 236.3 | 342.0 | 348.0 | 351.7 | 520.3 | 35.0 | 44.7 | 24.7 | 22.3 | 36.3 | 18.7 |
| Fangshan | 2 | 229.0 | 93.5 | 309.0 | 273.0 | 144.0 | 579.5 | 27.0 | 40.5 | 39.0 | 31.5 | 30.0 | 19.5 |
| Mentougou | 1 | 47.0 | 24.0 | 12.0 | 116.0 | 90.0 | 199.0 | 31.0 | 30.0 | 38.0 | 25.0 | 15.0 | 24.0 |
| Changping | 2 | 18.0 | 26.0 | 22.5 | 104.0 | 115.0 | 127.5 | 30.5 | 55.0 | 47.0 | 24.5 | 24.0 | 41.5 |
| Pinggu | 2 | 51.5 | 95.0 | 264.5 | 171.0 | 224.5 | 288.0 | 27.5 | 40.0 | 42.0 | 26.5 | 31.5 | 15.5 |
| Miyun | 2 | 19.0 | 21.5 | 131.5 | 93.5 | 73.0 | 107.5 | 24.0 | 30.0 | 45.0 | 27.5 | 36.0 | 16.5 |
| Huairou | 1 | 21.0 | 18.0 | 145.0 | 70.0 | 83.0 | 116.0 | 22.0 | 31.0 | 46.0 | 24.0 | 27.0 | 23.0 |
| Yanqing | 2 | 46.0 | 50.5 | 11.5 | 140.5 | 149.0 | 116.0 | 16.0 | 41.0 | 43.0 | 22.5 | 27.5 | 25.0 |

Table S2. The largest correlation coefficients of predictors in different buffer radii.

| Predictors | Winter Working Day | | | Winter Non-Working Day | | | Summer Working Day | | | Summer Non-Working Day | | |
|------------------------------------|--------------------|----------|----------|------------------------|----------|----------|--------------------|---------|----------|------------------------|----------|----------|
| | 0:00 | 8:00 | 18:00 | 0:00 | 8:00 | 18:00 | 0:00 | 8:00 | 18:00 | 0:00 | 8:00 | 18:00 |
| Arable land | -0.191 | 0.275 | 0.410* | 0.228 | 0.353* | 0.182 | -0.449** | -0.194 | -0.433* | -0.378* | -0.510** | -0.564** |
| Garden land | -0.585** | -0.449** | -0.474** | -0.605** | -0.233 | -0.583** | -0.460** | -0.393* | 0.436** | -0.546** | -0.495** | -0.409* |
| Woodland | -0.349* | -0.246 | -0.189 | -0.344* | -0.255 | -0.340* | -0.213 | -0.280 | 0.198 | -0.294 | -0.443** | -0.324 |
| Grassland | -0.581** | -0.391* | -0.217 | -0.474** | -0.384* | -0.429* | -0.448** | -0.355* | 0.601** | -0.352* | -0.409* | -0.405* |
| Commercial service land | 0.469** | 0.342* | 0.338 | 0.444** | 0.159 | 0.369* | 0.608** | 0.414* | 0.302 | 0.491** | 0.480** | 0.630** |
| Primary road | 0.520** | 0.350* | 0.175 | 0.435** | 0.077 | 0.428* | 0.614** | 0.424* | 0.527** | 0.496** | 0.614** | 0.681** |
| Secondary road | 0.484** | 0.291 | 0.074 | 0.386* | -0.314 | 0.294 | 0.556** | 0.497** | -0.334* | 0.545** | 0.653** | 0.638** |
| Catering services | 0.450** | 0.271 | 0.011 | 0.373* | -0.381* | 0.280 | 0.550** | 0.523** | 0.385* | 0.566** | 0.595** | 0.639** |
| Scenic spots | 0.199 | 0.057 | -0.253 | 0.187 | -0.255 | -0.054 | 0.414* | 0.286 | 0.450** | 0.566** | 0.595** | 0.660** |
| Public facilities | 0.455** | 0.350* | -0.120 | 0.347* | 0.134 | 0.223 | 0.594** | 0.351* | 0.371* | 0.572** | 0.593** | 0.671** |
| Companies | 0.501** | 0.343* | 0.062 | 0.307 | -0.076 | 0.342* | 0.667** | 0.473** | 0.386* | 0.602** | 0.594** | 0.684** |
| Shopping places | 0.518** | 0.359* | 0.142 | 0.475** | -0.085 | 0.382* | 0.529** | 0.402* | 0.417* | 0.504** | 0.663** | 0.622** |
| Transportation | 0.486** | 0.344* | 0.158 | 0.396* | -0.115 | 0.336* | 0.667** | 0.464** | 0.398* | 0.551** | 0.606** | 0.699** |
| Financial banks | 0.421* | 0.364* | -0.042 | 0.336* | -0.163 | 0.273 | 0.560** | 0.339* | 0.364* | 0.582** | 0.576** | 0.606** |
| Science and education places | 0.400* | 0.231 | -0.029 | 0.321 | -0.139 | 0.237 | 0.658** | 0.590** | 0.464** | 0.591** | 0.625** | 0.773** |
| Commercial and residential housing | 0.460** | 0.242 | 0.018 | 0.352* | -0.148 | 0.289 | 0.649** | 0.567** | 0.485** | 0.592** | 0.627** | 0.703** |
| Life services | 0.476** | 0.333 | 0.124 | 0.453** | -0.202 | 0.341* | 0.570** | 0.531** | 0.324 | 0.540** | 0.600** | 0.667** |
| Sports and leisure | 0.380* | 0.204 | -0.186 | 0.246 | -0.183 | 0.220 | 0.543** | 0.404* | 0.410* | 0.559** | 0.586** | 0.685** |
| Medical care | 0.456** | 0.288 | 0.108 | 0.451** | -0.233 | 0.337* | 0.620** | 0.585** | 0.445** | 0.543** | 0.609** | 0.693** |
| Government agencies | 0.408* | 0.222 | 0.065 | 0.469** | 0.022 | 0.294 | 0.574** | 0.421* | 0.383* | 0.571** | 0.608** | 0.629** |
| Temperature | 0.599** | 0.101 | -0.342* | 0.009 | 0.009 | -0.204 | 0.601** | 0.312 | -0.308 | 0.656** | 0.141 | 0.140 |
| Relative humidity | 0.931** | 0.667** | 0.783** | 0.805** | 0.805** | 0.955** | -0.407* | -0.238 | 0.253 | -0.158 | 0.521** | -0.395* |
| Air pressure | 0.485** | 0.770** | 0.697** | 0.683** | 0.683** | 0.686** | 0.468** | 0.146 | -0.446** | 0.162 | 0.301 | -0.237 |
| Wind speed | -0.559** | -0.238 | -0.592** | -0.192 | -0.192 | -0.201 | 0.414* | -0.117 | 0.074 | -0.022 | 0.042 | 0.308 |
| Population | 0.511** | 0.299 | 0.083 | 0.358* | -0.003 | 0.331 | 0.722** | 0.516** | -0.034 | 0.533** | 0.596** | 0.241 |
| Elevation | -0.573** | -0.714** | -0.704** | -0.599** | -0.523** | -0.616** | -0.505** | -0.222 | 0.464** | -0.135 | -0.204 | 0.546** |
| Industry source | 0.358* | 0.203 | 0.070 | 0.291 | 0.065 | 0.265 | 0.256 | 0.199 | -0.358* | 0.144 | 0.232 | 0.467** |

* $p < 0.01$; ** $p < 0.05$. This table only shows the maximum correlation coefficients of the same predictor. Other correlation coefficients with different buffer size are not listed.