

Supporting Information

Particle size distributions of metal and non-metal elements in an urban near-highway environment

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The supporting information shows Figure S1 which contains the daily size distributions of the summed metals (step plots, right axis) and PM mass (smoothed lines, left axis).

This Supporting Information section contains three figures including (i) the individual PM mass size distributions for the entire 2 week testing period; (ii) the size-distributed reconstruction of total elemental composition versus PM mass; and (iii) the relative elemental size distributions.

Figure S1. Individual PM mass size distributions for the near-road test interval. Impactor data were inverted using the model of Dong et al.¹ (Dong, Y.; Hays, M. D.; Smith, N. D.; Kinsey, J. *J. Aerosol Sci.* 2004, 35, 1497.) Note that 08/06 and 08/09 are missing the coarse mode due to a thermal inversion. Part of 08/06 is sampled over the weekend whereas 08/09 is a full weekday sample. This helps explain the concentration difference between these days.

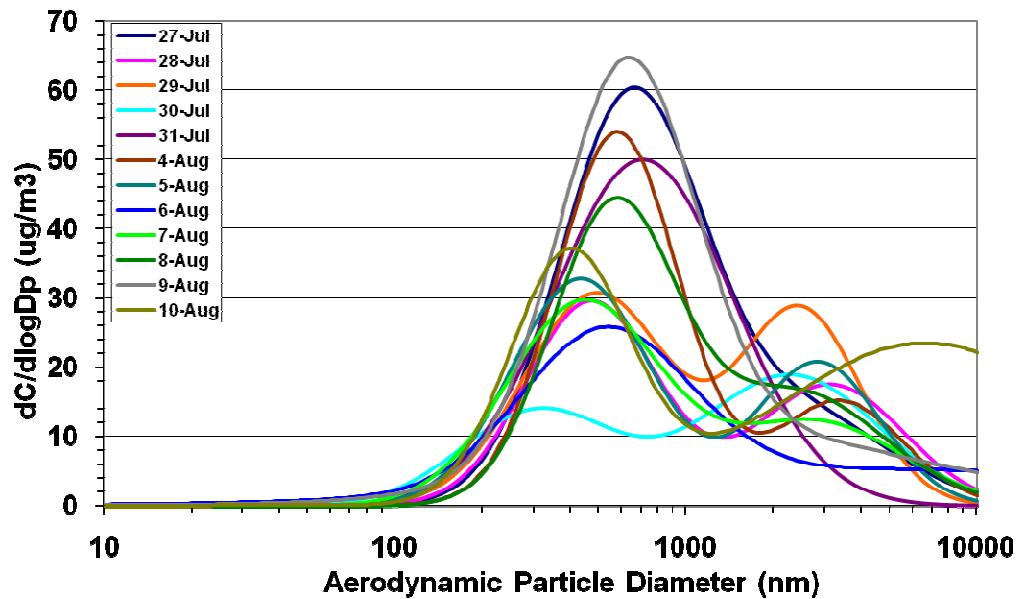


Figure S2

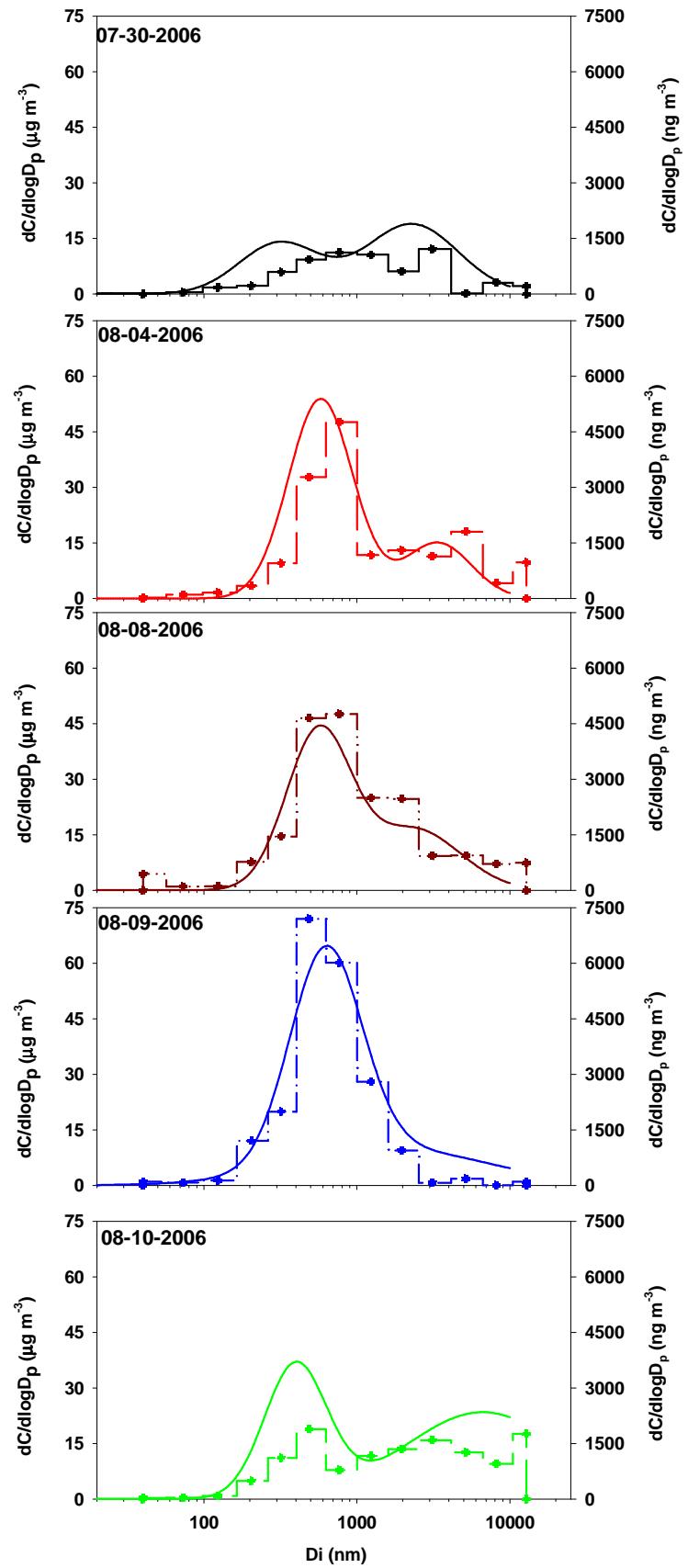


Figure S2. Reconstructed total ICP-MS measured element size distributions versus PM mass. The left axis is for PM mass (smoothed) and the right axis is for the metals (step plots).

Figure S3a

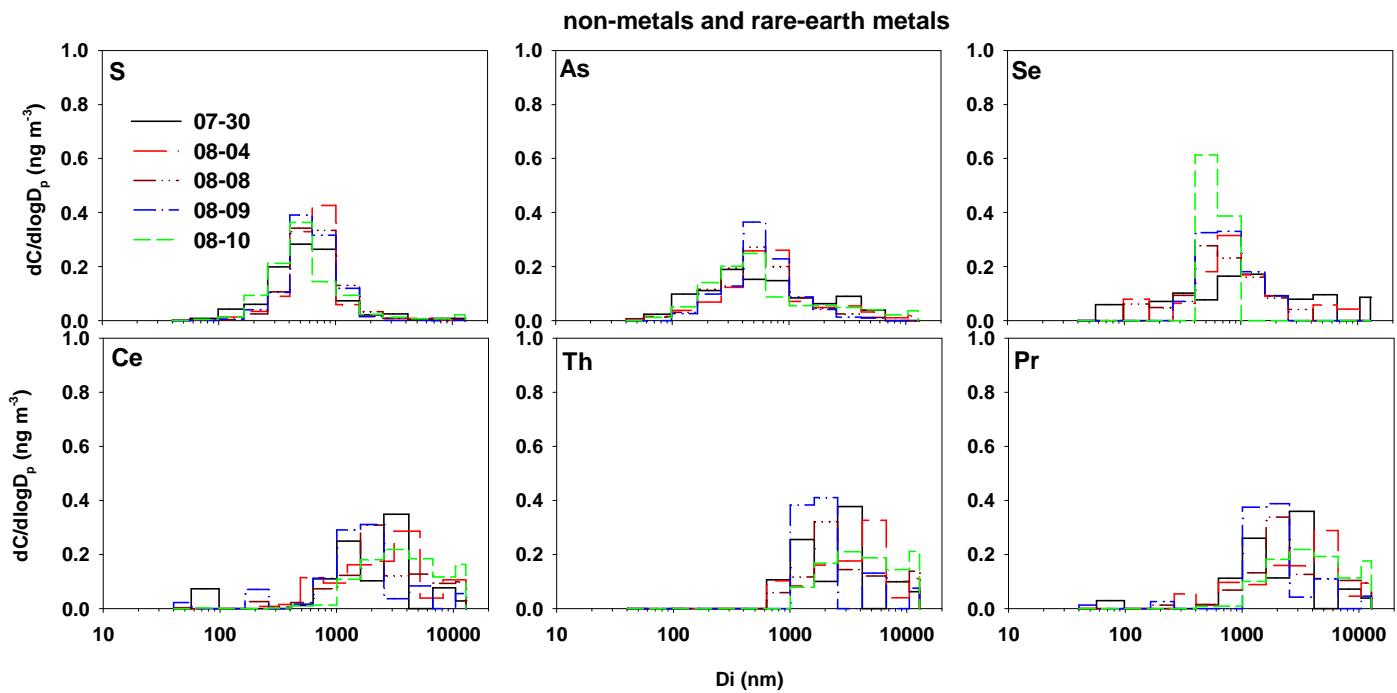


Figure S3b

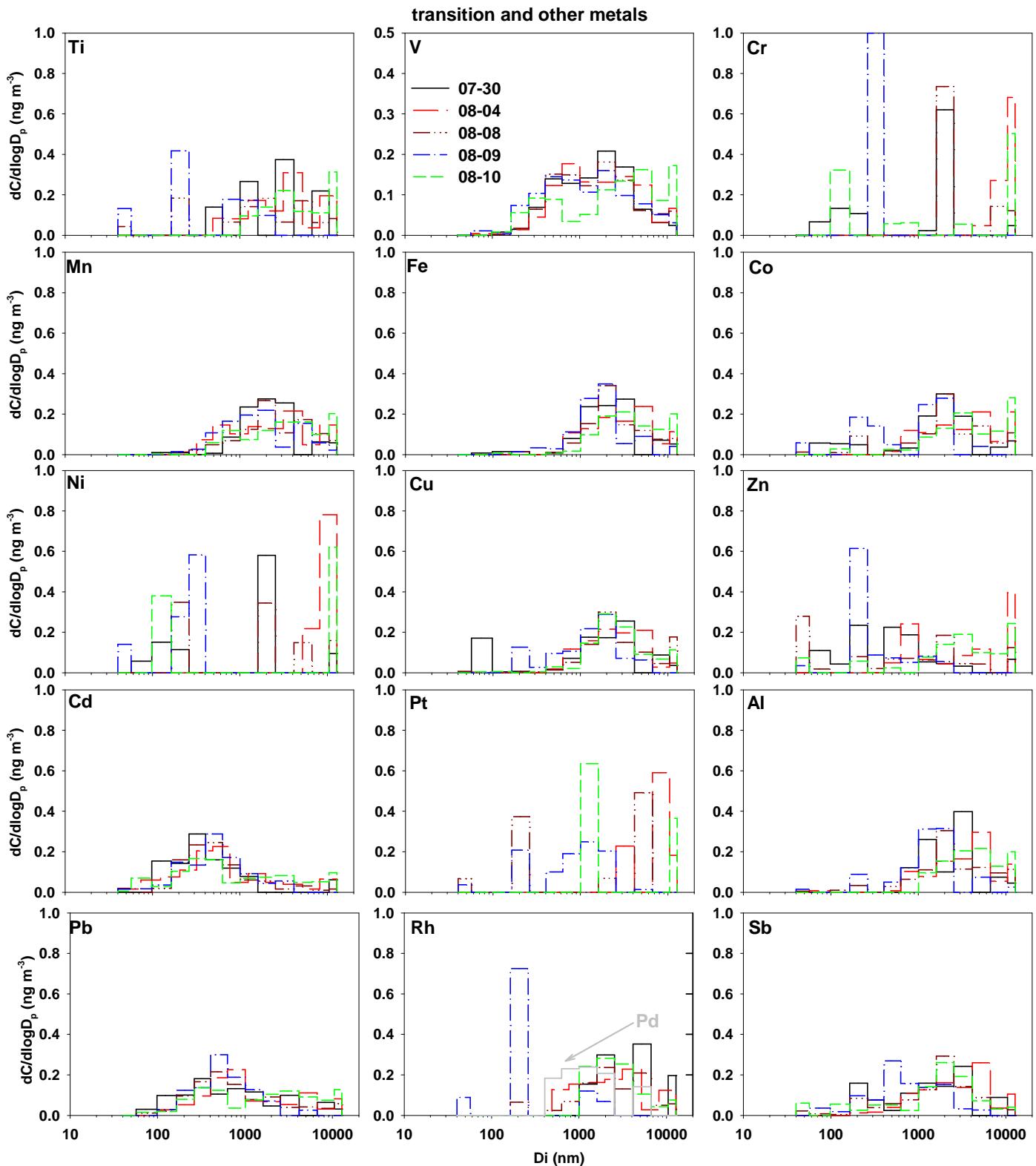


Figure S3c

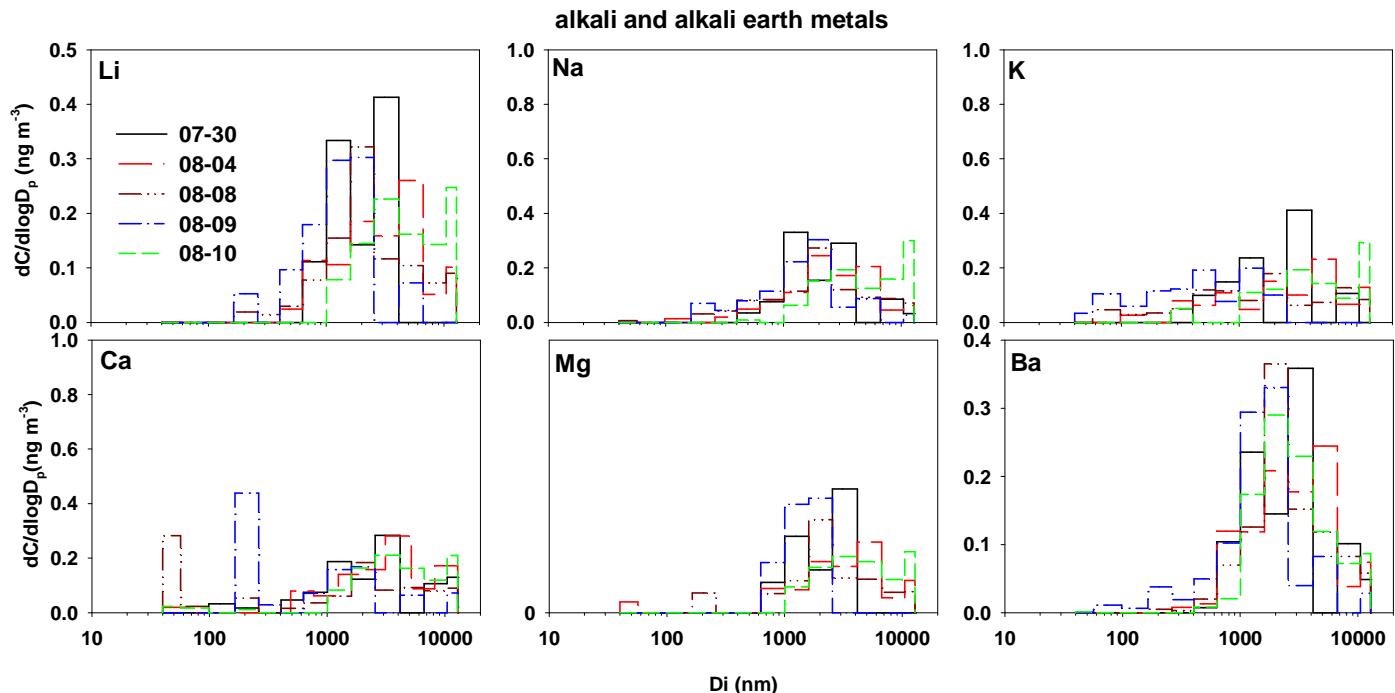


Figure S3. Relative elemental size distributions of (a) the group VB and VIB non-metals and rare earth metals (b) transition metals and (c) the alkali and alkali earth metals in the near-highway particle matter. This figure is meant to highlight the element size distributions while removing the potential impacts on the absolute concentrations due to meteorology and other factors. Generally speaking, the daily distribution for each metal tends to be more similar.

(1) Dong, Y.; Hays, M. D.; Smith, N. D.; Kinsey, J. *J. Aerosol Sci.* **2004**, 35, 1497.