**Figure captions**

**Figure 1.** Simulated spatial maps of period-averaged NO2 concentrations from the CMAQ model for (a) Base case, (b) Half Traffic case, and (c) Difference plot: Both controls – Base case (ppb).

**Figure 2.** Simulated spatial maps of period-averaged O3 concentrations - Difference plots from the CMAQ model for (a) Half Traffic – Base case; (b) Half Industry VOC – Base case, and (c) Both controls – Base case (ppb); (d) Wind Rose diagram showing regional wind directions.

**Figure 3.** Simulated spatial maps of period-averaged PM2.5 concentrations from the CMAQ model for (a) Base case, (b) Half Traffic case, and (c) Difference plot: Both controls – Base case (µg/m³).

**Figure 4.** Simulated high-resolution spatial maps of NO2 (Guangzhou domain) from the ADMS-Urban model at 19:00, May 28th, 2019 for (a) Base case, (b) Half Traffic case, (c) Half Industry VOC case, (d) Both Control case (µg/m3).

**Figure 5.** Simulated high-resolution spatial maps of O3 (Guangzhou domain) from the ADMS-Urban model at 14:00, May 10th, 2019 for (a) Base case, (b) Half-Traffic case, (c) Half Industry VOC case, (d) Both-Control case (µg/m3).

**Figure 6.** Simulated high-resolution spatial maps of PM2.5 (Guangzhou domain) from the ADMS-Urban model at 18:00, April 17th, 2019 for (a) Base case, (b) Half Traffic case, (c) Half Industry VOC case, (d) Both-Control case (µg/m3).

**Figure 7.** Box plots comparing measured concentrations (pale blue) and base regional CMAQ model concentrations (red) to the four high-resolution coupled system model scenarios from ADMS-Urban model for: Base case (orange), Half Traffic case (light green), Half Industry VOC case (darker green), and Both Controls (bright blue) for (a) daily maximum hourly NO2, (b) daily maximum 8-hour rolling O3, and (c) daily average PM2.5. Unit is in µg/m³.

**Figure 8.** Box plots comparing the regional CMAQ model concentrations at a rural location (white star in Figure 2): Base case (red), Half Traffic case (light green), Half Industry VOC case (darker green), and Both Controls (bright blue) for: (a) daily maximum hourly NO2, (b) daily maximum 8-hour rolling O3, and (c) daily average PM2.5. Unit is in µg/m³.

**Figure 9.** Regional CMAQ model predictions for (a) daily-maximum 8-hourly average O3, (b) hourly average O3 during an episode in April 2019 at a rural location (white star in Figure 2) to the north-east of the regional model domain: Base case (red), Half traffic case (light green), Half industry VOC case (darker green), and Both controls (bright blue). Unit is in µg/m3.