Local Air Quality Impact of HEDD Units

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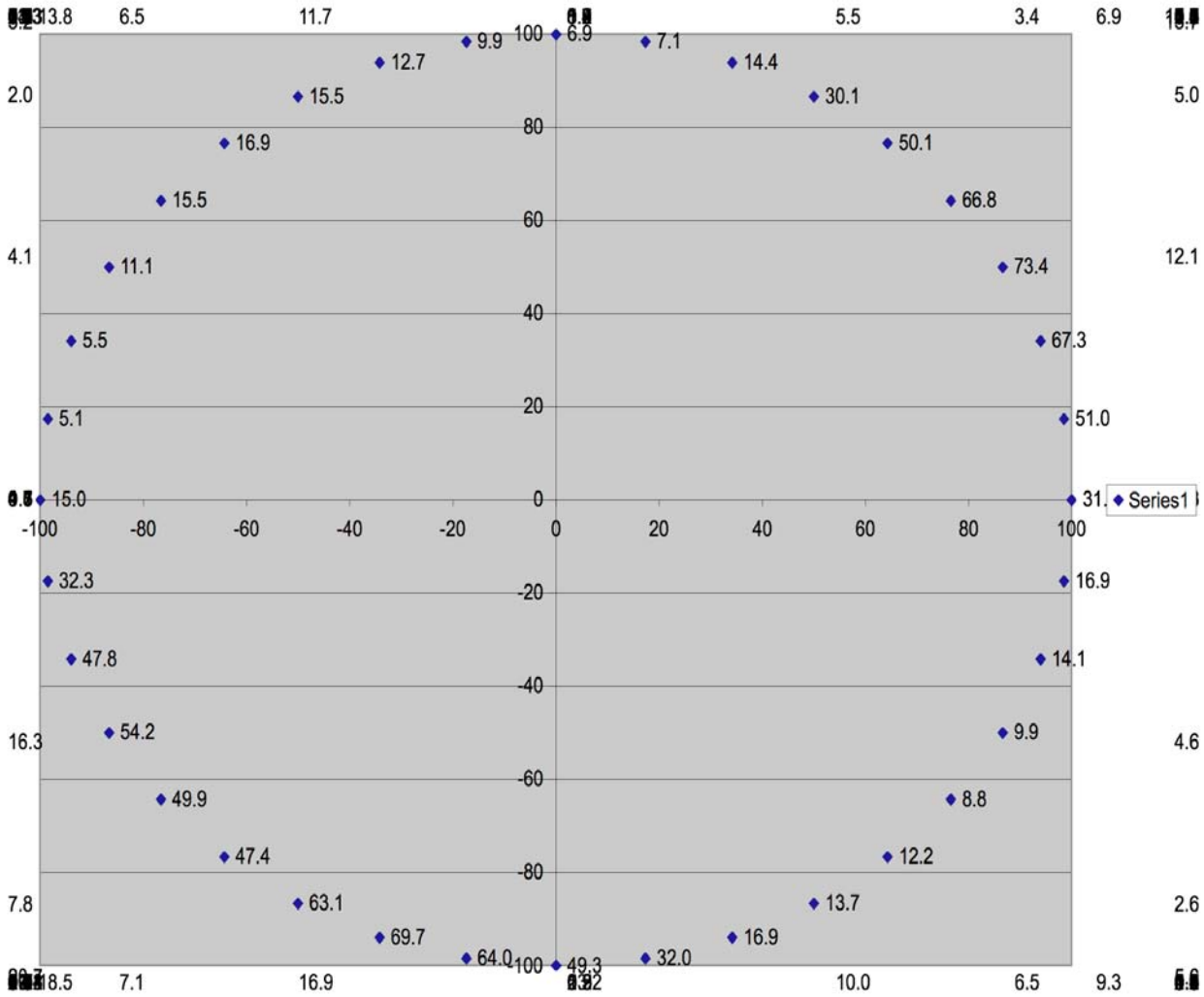
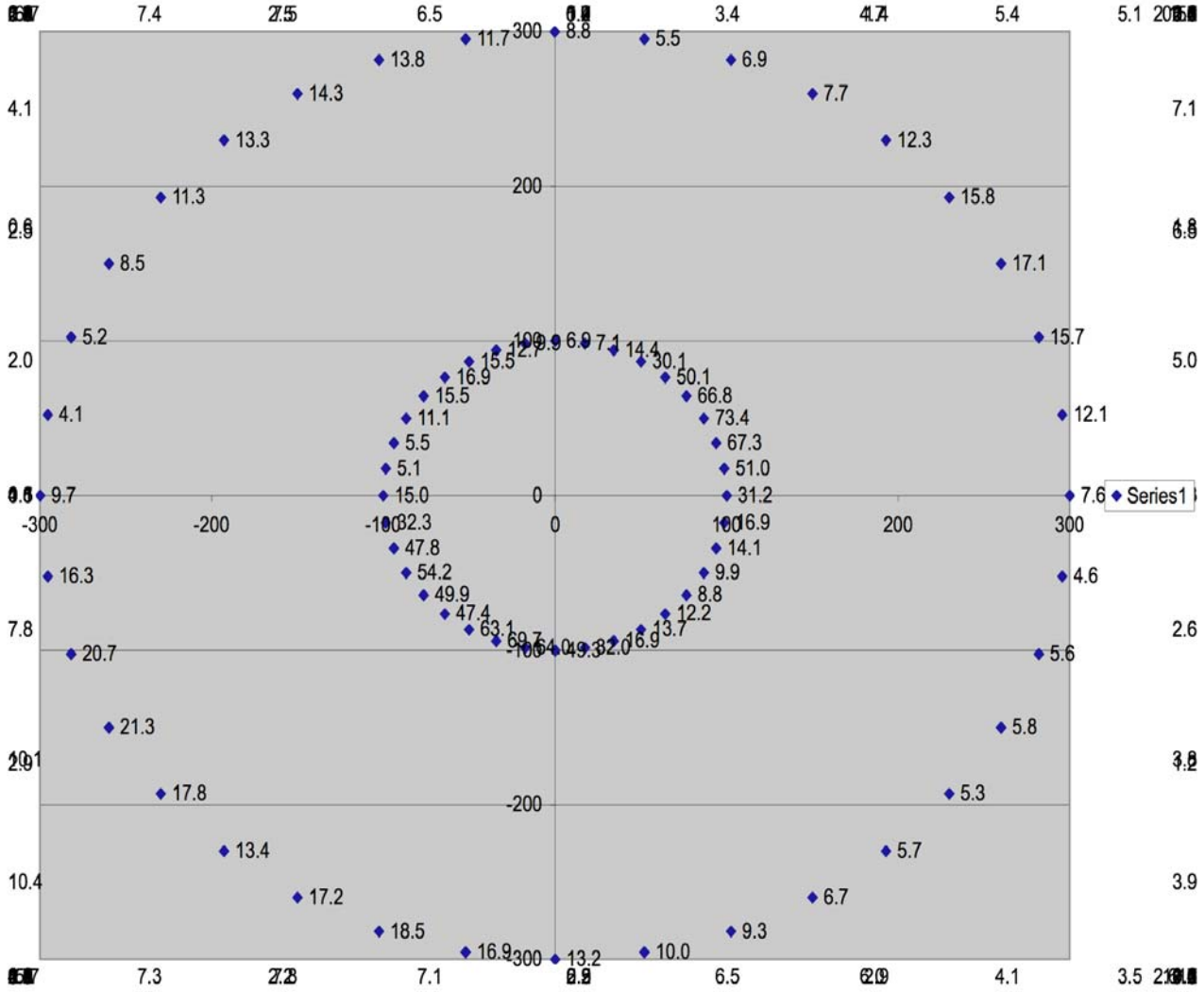
Inputs and Assumptions

- Simulation: July 1 to 31, 2005
- Emission sources: peaking units from Astoria Gas Turbine Power in Queens, located in 40.7778, -73.9067 (according to NYSDEC); Stack Height ~ 38.5 feet.
- Hourly NOx emission rates were acquired from EPA
- $PM_{2.5}$ emissions rates were assumed to be 10% of NOx emission rates.
- NWS LGA Airport Meteorological data were used.
- EPA AERMOD Model

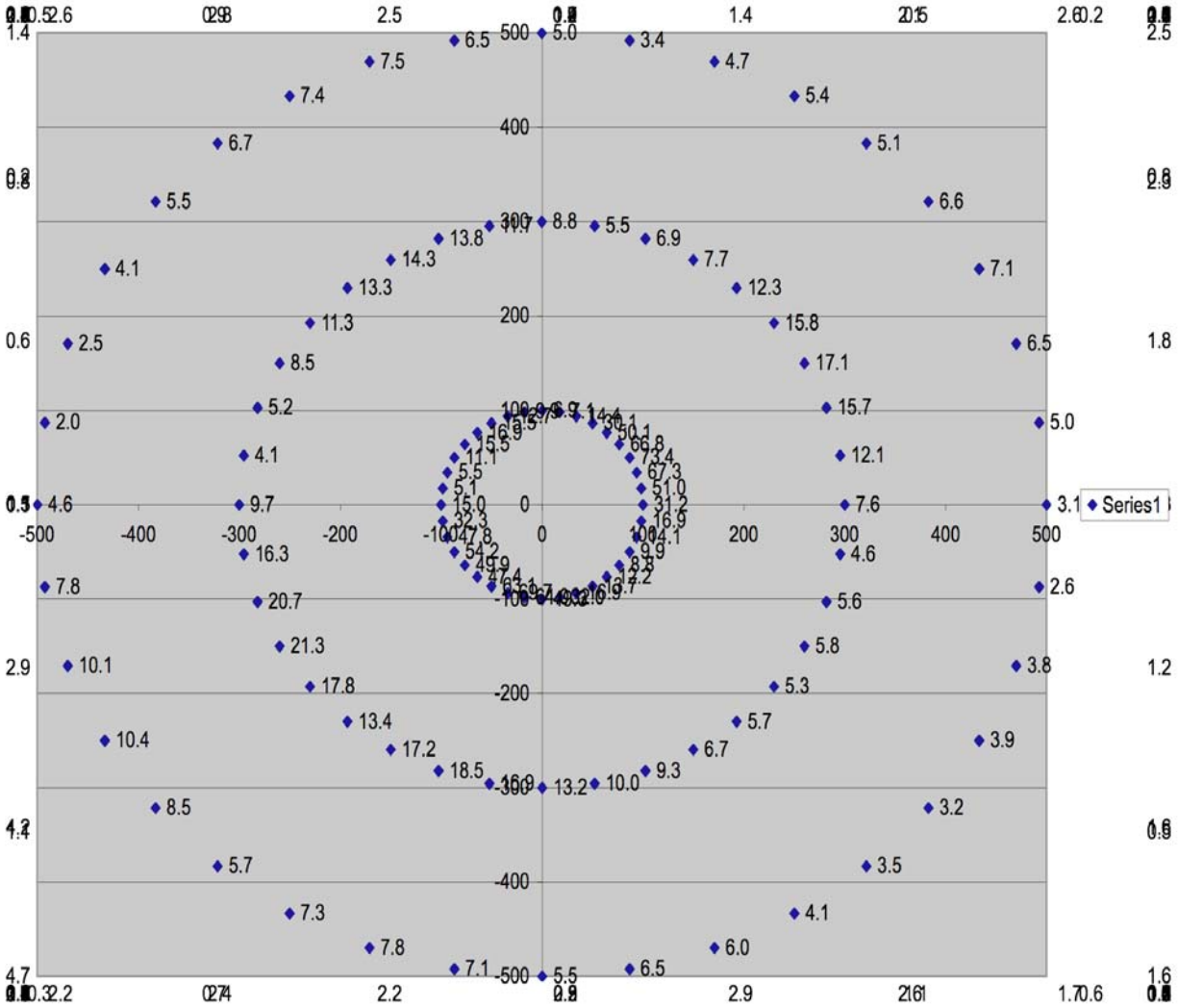
Estimated Max 24-hr average PM conc. ($\mu g\ m^{-3}$) in July 2005 (Source: 40.7778, -73.9067)



Estimated Max 24-hr average PM conc. ($\mu g\ m^{-3}$) in July 2005 (Source: 40.7778, -73.9067)



Estimated Max 24-hr average PM conc. (μg m^{-3}) in July 2005 (Source: 40.7778, -73.9067)



Summary

- Our modeling study suggest that HEDD units, even though only operating for few hourly a day during summer months, may cause local air pollution hotspot due to their low stack heights and meteorological conditions.
- Measurements are needed to validate the modeling results.