South Coast
Air Quality Management District

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NEWS

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SCAQMD Response to USC Study

"Mining Public Datasets for Modeling Intra-City PM2.5 Concentrations
at a Fine Spatial Resolution" and accompanying internet story, "Air Quality in Your Neighborhood?
Here's Our List" at www.xtown.la

The underlying data science used in the USC study is an exciting field of research that shows future promise, but significant further development is needed before these techniques produce results that are more reliable than the expert-driven air quality measurements and models that are used to develop policy. For example, the USC model does not take into account meteorology and atmospheric chemistry -- two factors that have major impacts on the formation, transport and concentration of PM2.5. The USC model also lacks information on the magnitude and temporal behavior of many important emission sources that significantly affect PM2.5 concentrations.

While internet stories accompanying the study, at www.xtown.la, offer a "note of caution" on the limitations of the study's methodology in understanding the differences in air quality across LA County, the stories draw unwarranted conclusions in providing a ranking of PM2.5 exposure for 251 communities in the county. In this ranking, some of the cleanest communities in LA County are ranked among the dirtiest, and some of the dirtiest are ranked among the cleanest.

For example, two communities along the coast are ranked among the dirtiest for PM2.5. Marina del Rey is ranked as the 6th dirtiest community and Hermosa Beach the 17th dirtiest of 251 communities. Neither city is adjacent to a major freeway. Decades of SCAQMD regional monitoring data as well as more recent local, portable monitoring data consistently show that areas along the coast are among the cleanest in the entire South Coast Air Basin.

The story also ranks San Pedro as the 10th cleanest of 251 communities. San Pedro is adjacent to the Port of Los Angeles and near the Port of Long Beach, which together are the largest single source of air pollution in the region. Emissions from the port include PM2.5 in the form of diesel particulate, a cancer-causing air pollutant.

Altadena, ranked as the 17th cleanest community, can suffer poor air quality due to its location in the San Gabriel Valley, where prevailing winds can carry pollutants from more urbanized areas in Los Angeles County.

SCAQMD has more than 40 permanent monitoring stations across its four-county jurisdiction – one of the most robust networks in the nation. In addition, the agency has devoted extensive resources in recent years to deploy new sensor technology to directly measure pollution in many more locations. Examples of SCAQMD's advanced monitoring efforts include:

- AQ-SPEC, a program to test the accuracy of low-cost, portable monitors in the field and the laboratory
- A prestigious STAR grant received from the US EPA, which will fund education of community groups in the use of low-cost, portable monitors;
- The latest MATES V program, which will use traditional as well as advanced monitoring techniques to assess current levels of air toxics across the Los Angeles Basin; and
- A NASA Research Opportunities in Space and Earth Science (ROSES) Citizen Science for Earth Systems grant that uses ground-based PM sensor data to calibrate satellite monitoring of PM.

These advanced techniques will both provide more direct measurements and help to improve neural network/land-use based predictions such as those used in the USC study.

The SCAQMD is the air pollution control agency for Orange County and major portions of Los Angeles, San Bernardino and Riverside counties.

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