



Community Assessment of Freeway Exposure and Health: Approach and Methods

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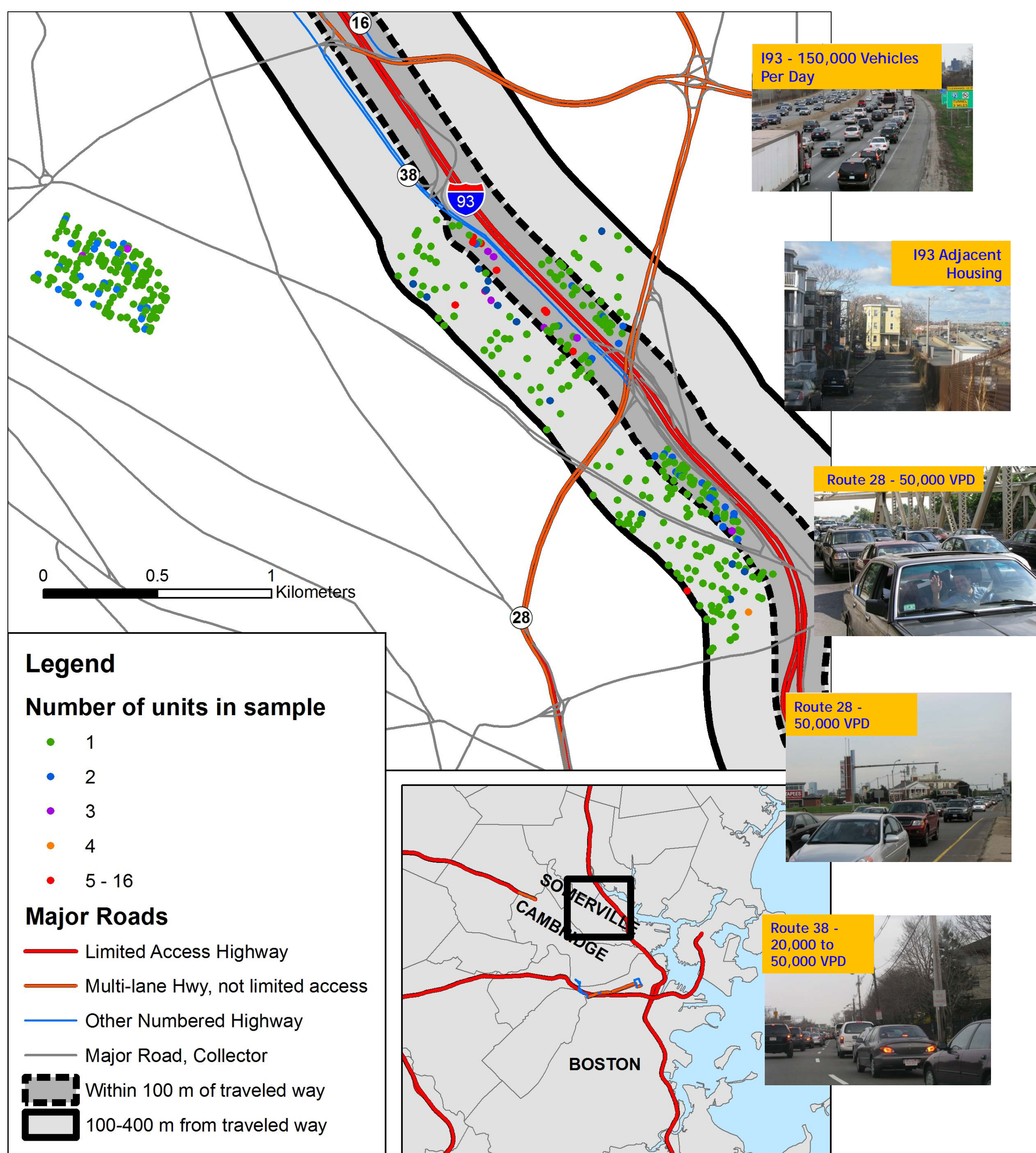
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Introduction

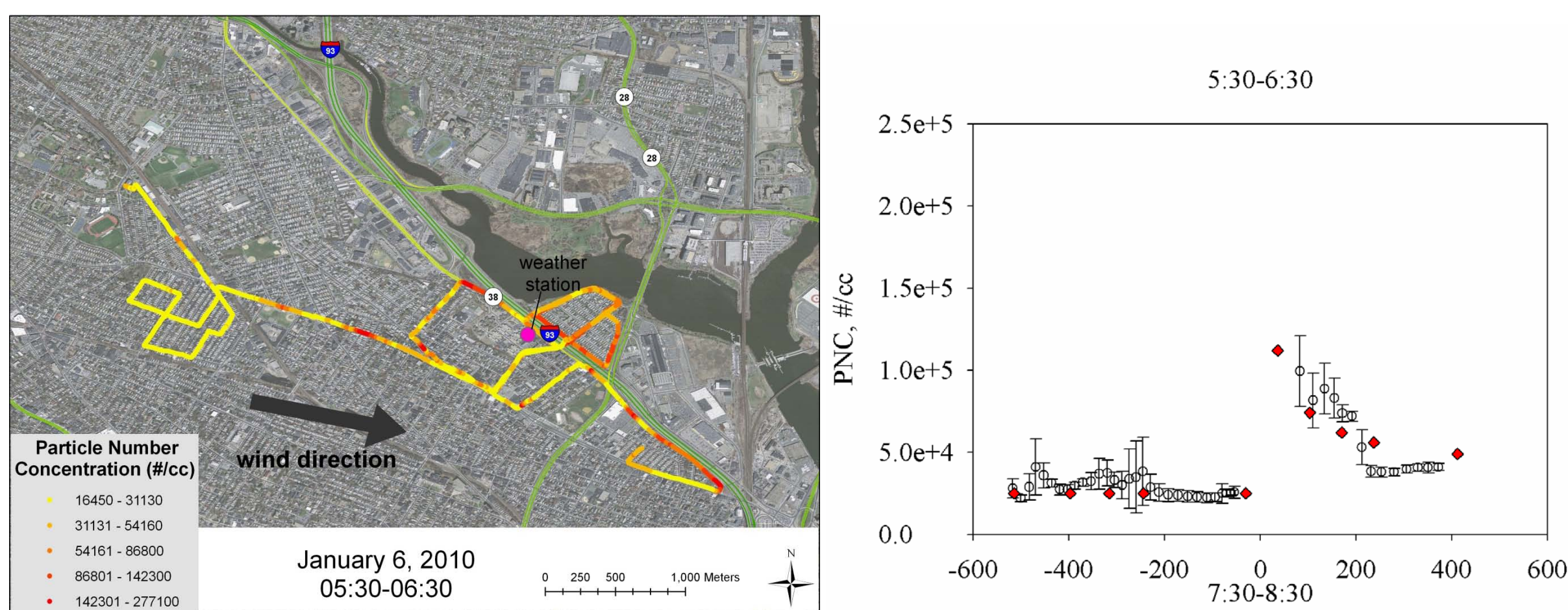
There is compelling evidence that pollution derived from motor vehicle exhaust is associated with cardiovascular and pulmonary morbidity and mortality. Recent studies suggest that near highway pollutants (to about 200 meters [m] from the roadway) differ qualitatively and quantitatively from regional pollution, and pose greater risks. As low-income and minority communities are more likely to be close to highways, this pollution may contribute to health disparities and environmental injustice.

Study Area, Year 1



Years 2 and 3 are in other locations along I-93 in Boston Chinatown and South Boston.

Environmental Data



ENVIRONMENTAL (Mobil van will collect 40 days per year/neighborhood of near highway UFP gradients and other co-pollutant measurements.)

Equipment	Measures
•ThermoElectron Trace 48i	Carbon Monoxide (CO)
•ThermoElectron Model 42i	NOx-NO-NO ₂
•TSI Sidepack PM2.5 Analyzer	PM _{2.5}
•McGee Scientific Aethalometer	Black Carbon (BC)
•EcoChem PAS 2000	Particle Bound PAH
•TSI Condensation Particle Counter model 3775	Ultrafine Particles
•TSI Scanning Mobility Particle Spectrometer	Ultrafine Particles
•Davis System	Meteorological Data

Health Data

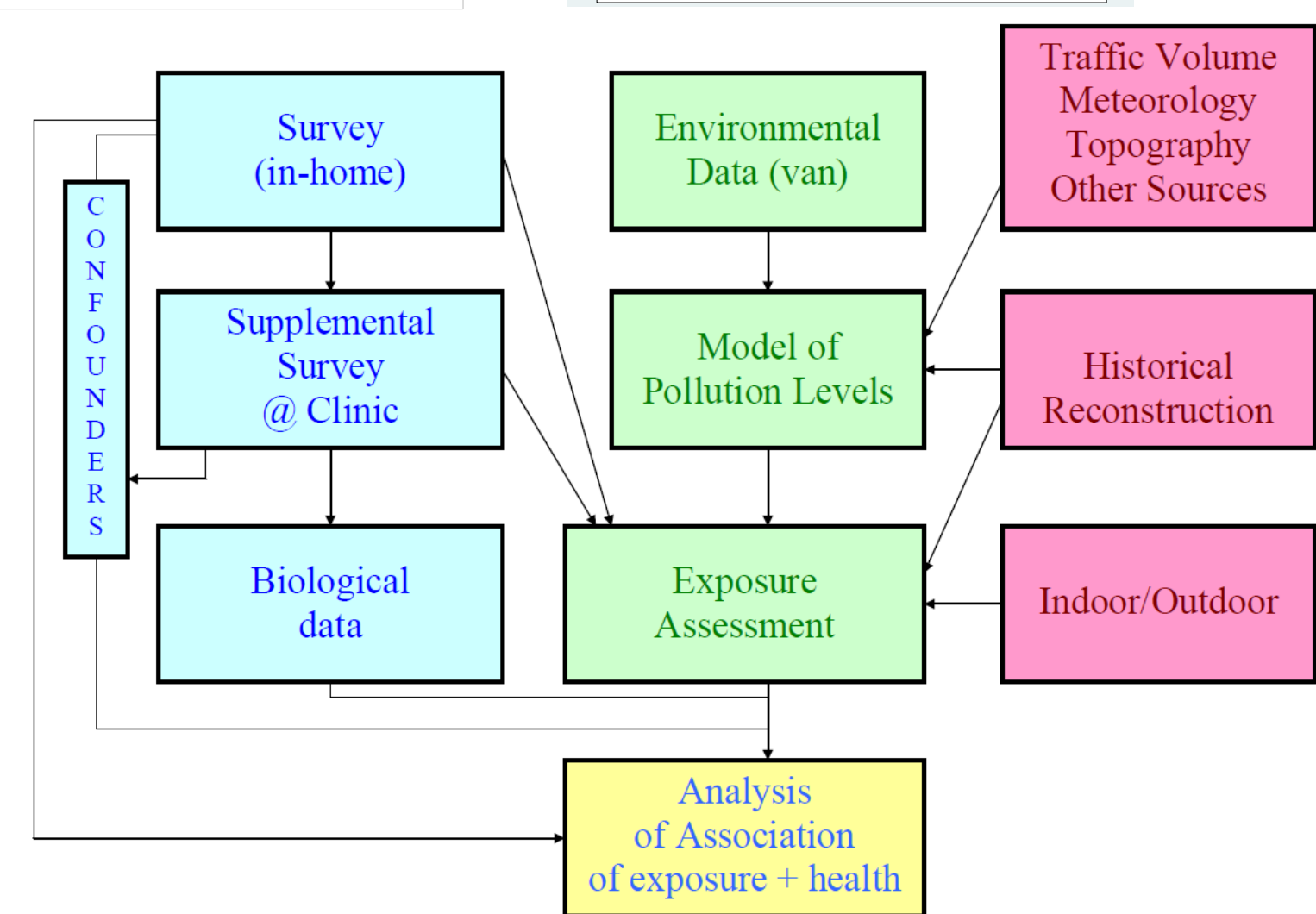
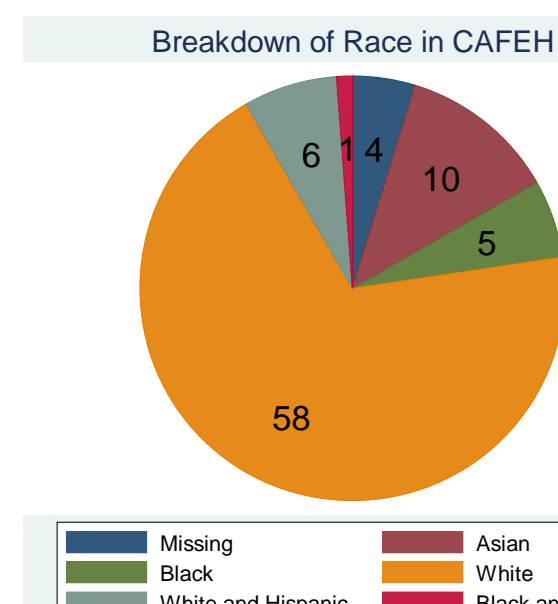
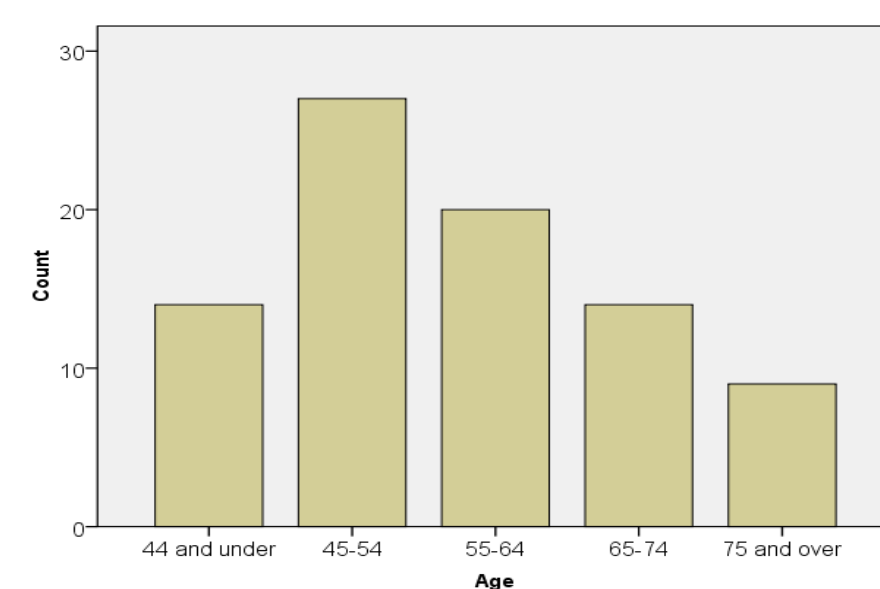
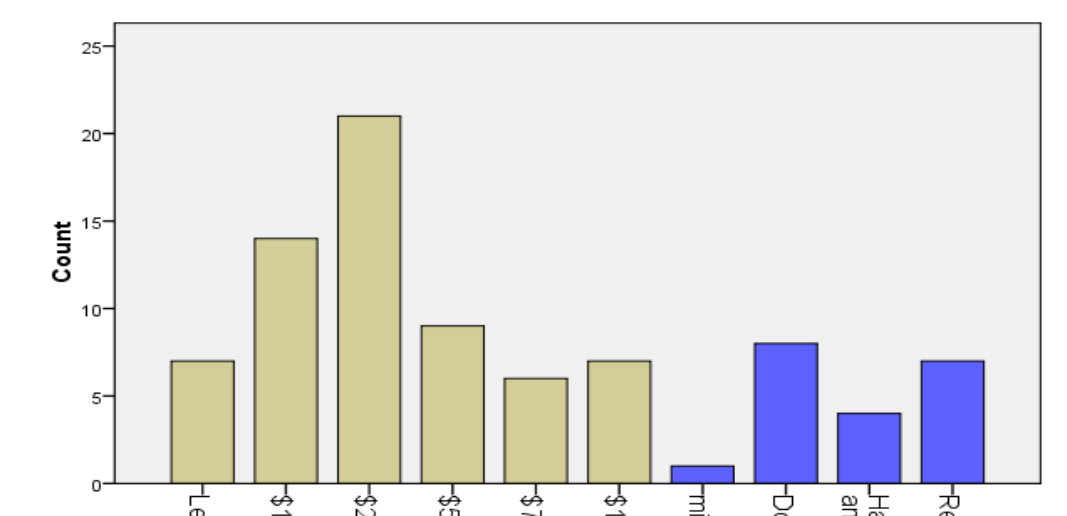
Community-based participatory research



QUESTIONNAIRE

- Time-activity
 - Other combustion sources
 - Smoking/ETS
 - Sound
 - Occupational exposure
 - Demographics
 - Diet/physical activity
 - Stress
 - Risk perception
 - Diagnosed CVD
- ### BIOLOGICAL
- C-reactive protein
 - Fibrinogen
 - Lipid profile
 - Blood pressure
 - Ankle Brachial Index

As of 3/16/10	Number
Surveys refused	90
Surveys still active	147
Surveys completed	169
Random	118
Convenience	51
Blood draws (1 st)	104
Blood draws (2 nd)	7



Unique Partnership

Our CBPR framework seeks to couple rigorous science with community involvement in an equitable partnership. We seek to use our approach to inform policy issues and practice in ways that accelerate the application of both our findings and the larger literature about near highway pollution and health.

Our **Steering Committee** meets bi-weekly and includes representatives from all of the partners, students and the field staff. Other team members are welcome to attend and often do. Decisions are made by consensus or majority vote after discussion by all members in the group. **Sub-committees** are in place for in-depth discussions on the main work areas: environmental science, health outcomes, outreach & recruitment, exposure assessment, and the field operations.

Our **Advisory Board** includes other individuals from other academic institutions, government agencies, health organizations, community members and elected officials. It meets twice yearly to discuss the large-scale goals of the project and to help guide policy work.

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