

Citizen Science, Community Monitoring and Mapping: Tools for Community Empowerment

2007 – Ongoing

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A. Purpose of the Project

- a. Define the project boundaries: LAMC's mapping projects focus on communities on the southern-end of North Charleston, SC impacted by exposure to environmental concerns.
- b. Describe what the community concerns are: The LAMC communities are concerned by exposure to environmental concerns which impacts their quality of life. The residents specifically have identified Affordable Housing, Economic Development, Education and Environmental Justice as areas of concern.

B. Project Tool Used and Application

- a. What tools were used to address the concern (EJSCREEN, ECHO, TRI): We use EJSCREEN and TRI.
- b. Why did you select this tool: We select these tools because they give us good starting data to build other questions for research projects and a good framework to build off of.

C. Process Implemented

- a. How did you use the tool to address your concerns: We have used these tools to identify TRI sites in our communities, understand what chemicals are used at a facility, a base for the creation of our community based mapping tool, research project design, and empower and educate residents.

D. Results of Using the Tool

- a. How the community benefited from using the tool: Learned about which TRI sites are in the community, community statistics, identification of contaminated sites, and development of community reports.

b. How the community used the data to support the project:
LAMC has used information in reports, public comments, and research projects.

E. Summary (if any)

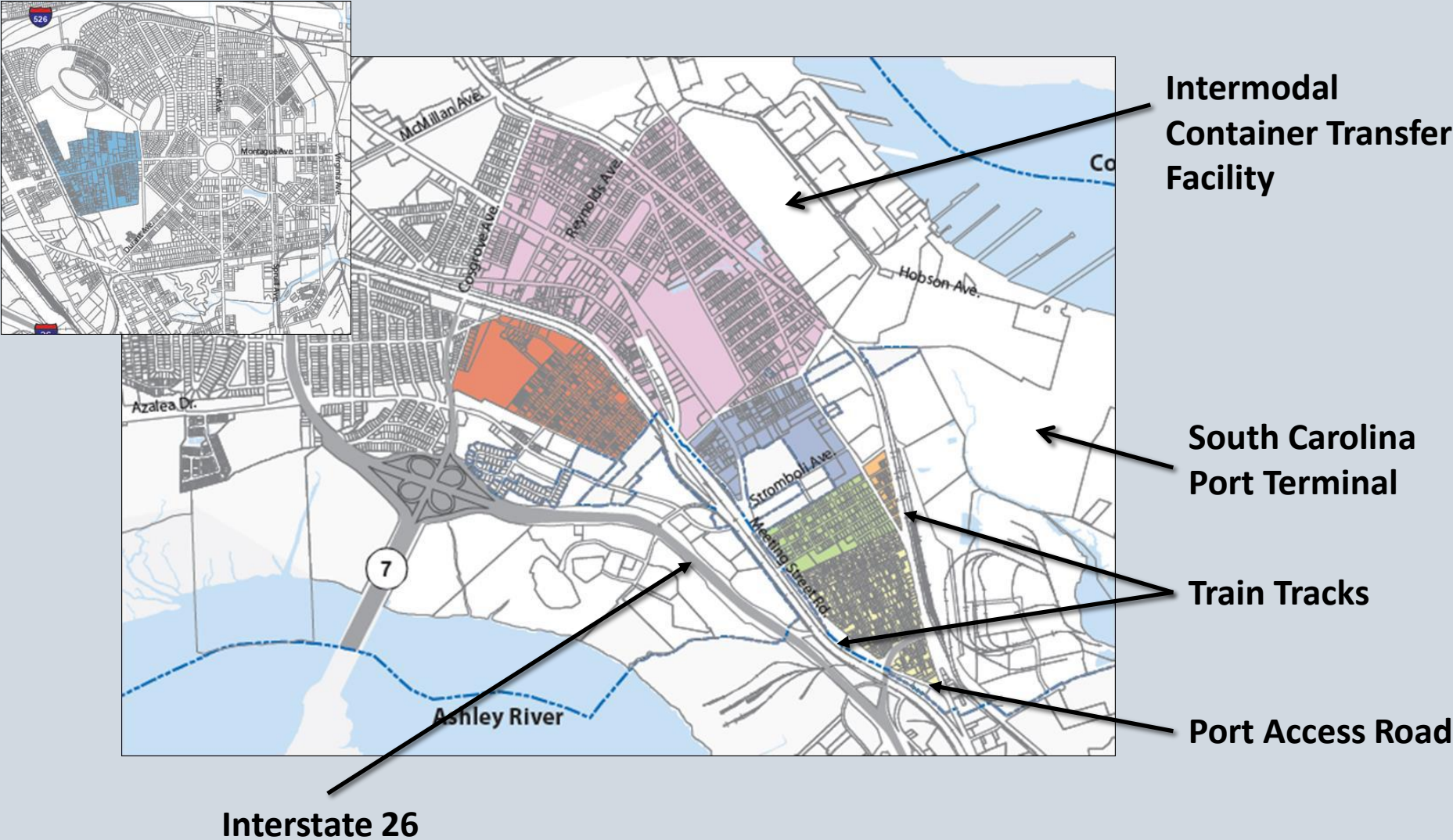
a. Draft/Final Report for sharing

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Omar Muhammad (LAMC)

Community Environmental Challenges



LAMC Organization's Purpose and Work

Our purpose: is to build healthy families by creating pathways to equal opportunities

Our work: is intentional and transformative

Our focus: is **7 : 4**

7 Communities : 4 Core Areas of Focus

Accabee

Chicora/Cherokee

Five Mile

Liberty Hill

Union Heights

Howard Heights

Windsor Place

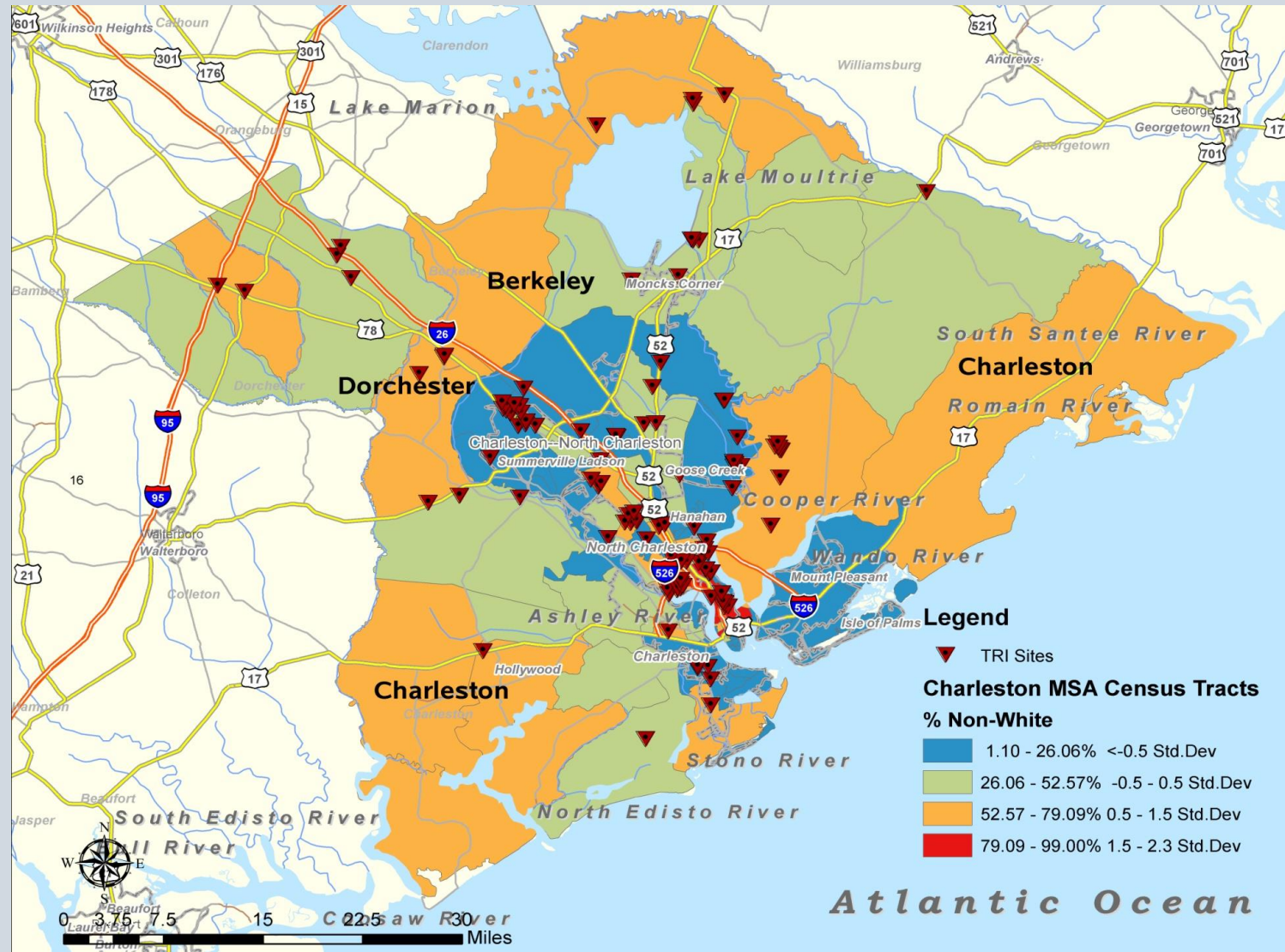
Affordable Housing

Economic Development

Education

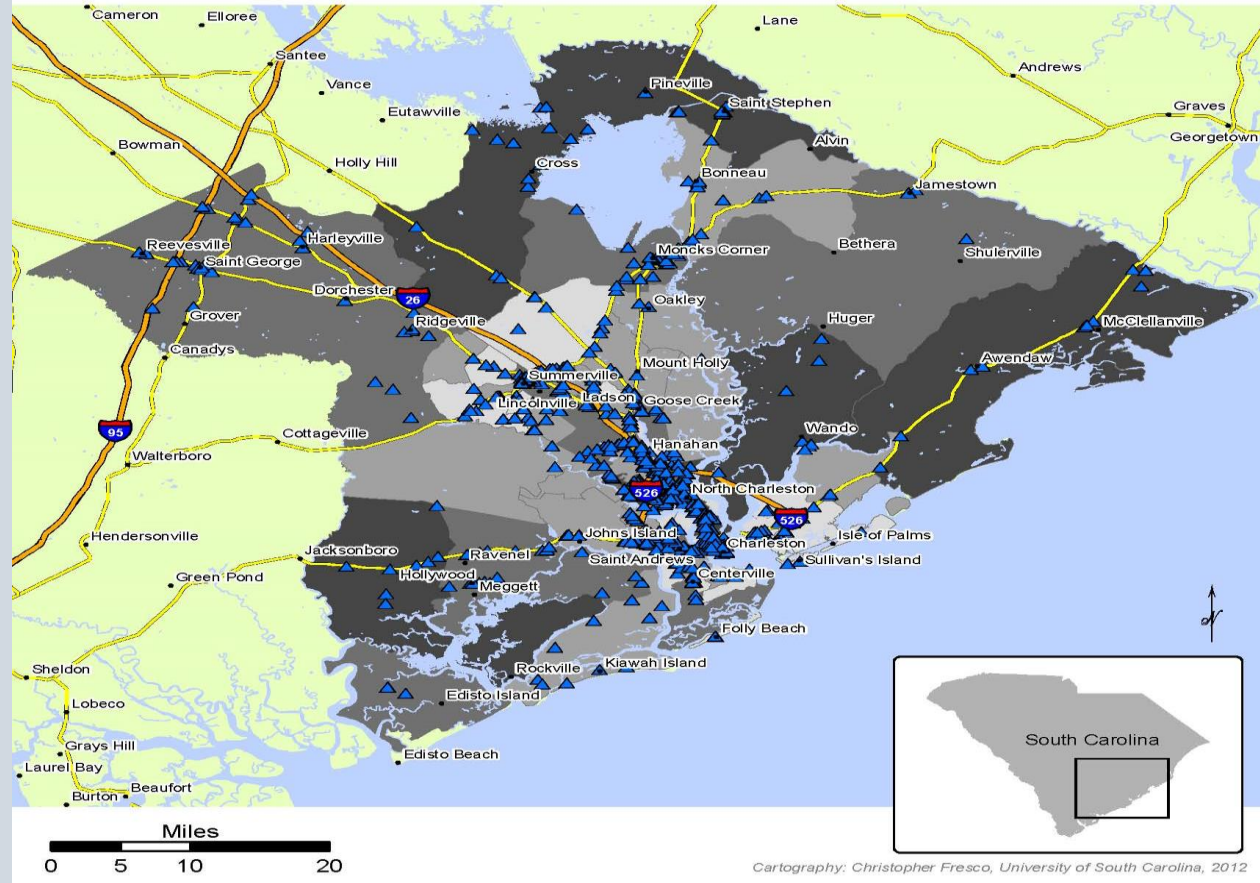
Environmental Justice

Charleston TRI Facilities vs % Non-White



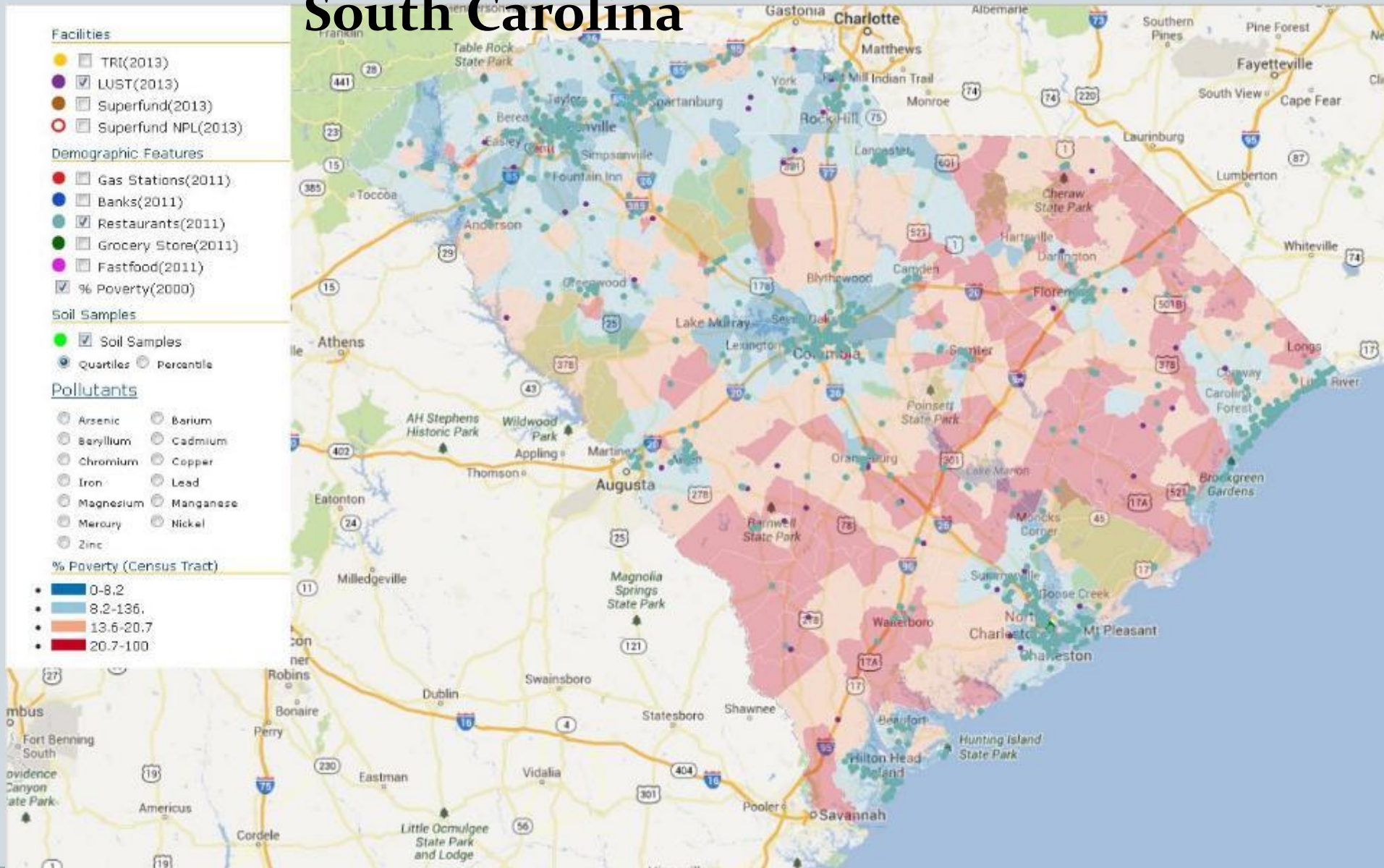
Charleston MSA LUST Site Locations / Percent Non-White Population

Percent Non-White	Standard Deviation	# of LUST Sites	# of Census Tracts
0.57% - 18.36%	< -0.50 Std. Dev.	120	30
18.37% - 34.3%	-0.50 - 0.50 Std. Dev.	148	29
34.31% - 57.89%	0.50 - 1.5 Std. Dev.	211	29
57.9% - 99.41%	1.5 - 2.3 Std. Dev.	225	29

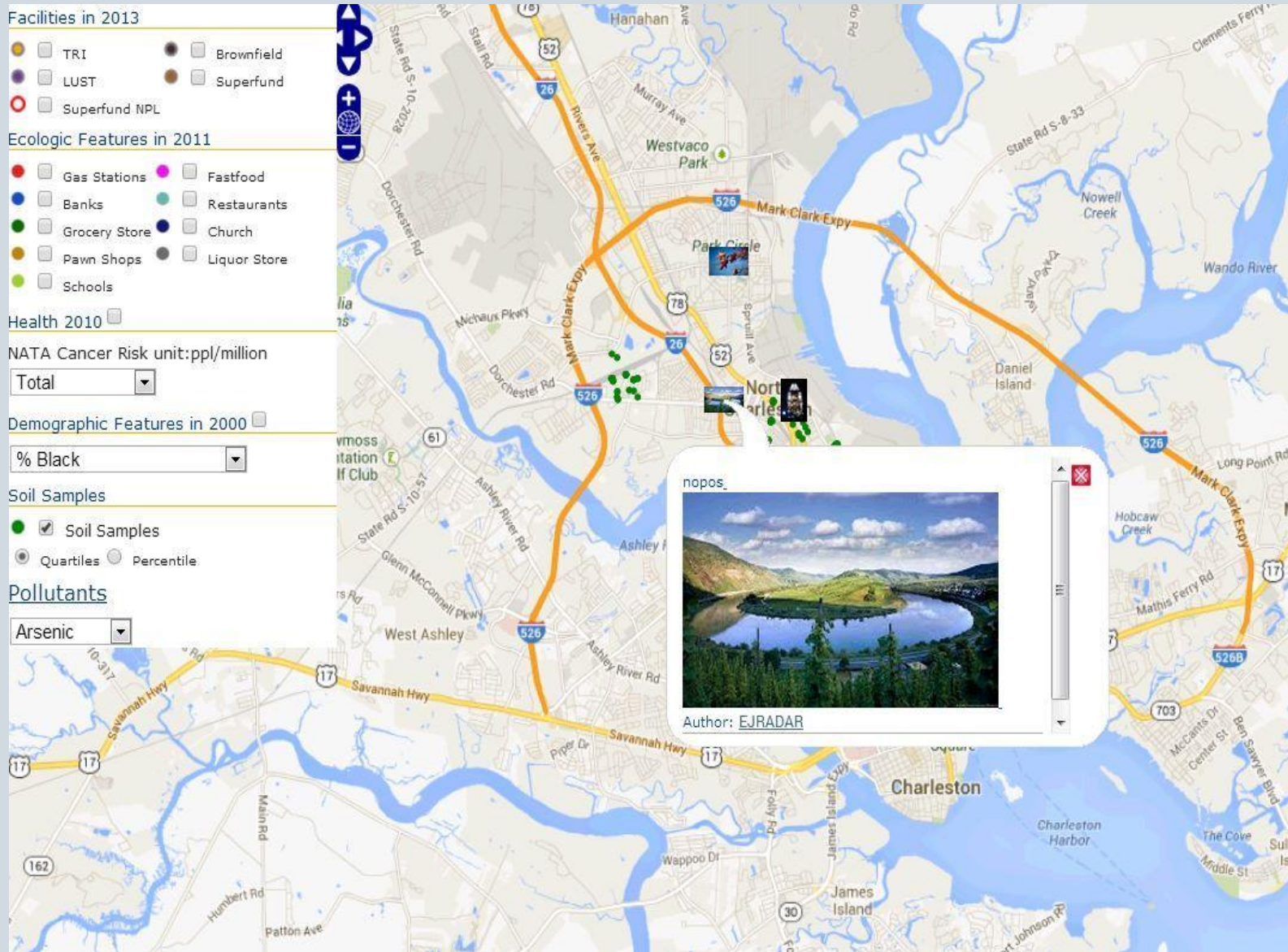


Cartography: Christopher Fresco, University of South Carolina, 2012

EJRADAR Examples: % Poverty in South Carolina



Active Photovoice



Community Engagement



Students participating in a pilot block assessment



Community SWOT Analysis



Visioning Session

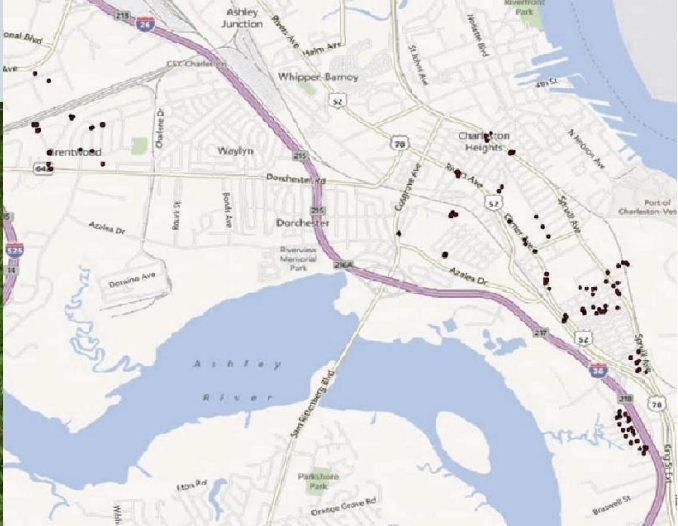


Community Workshops

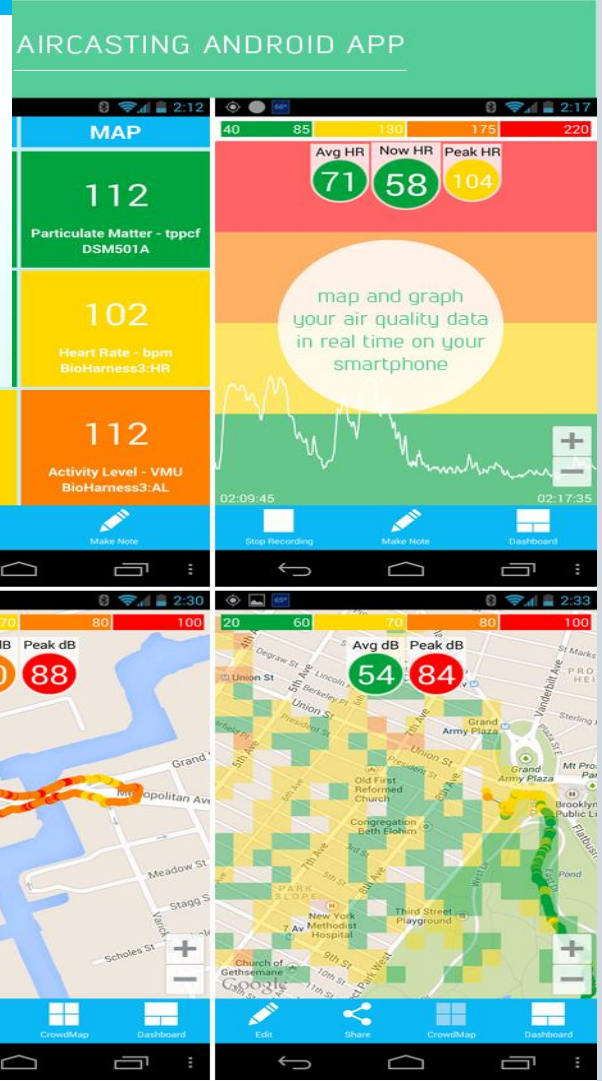
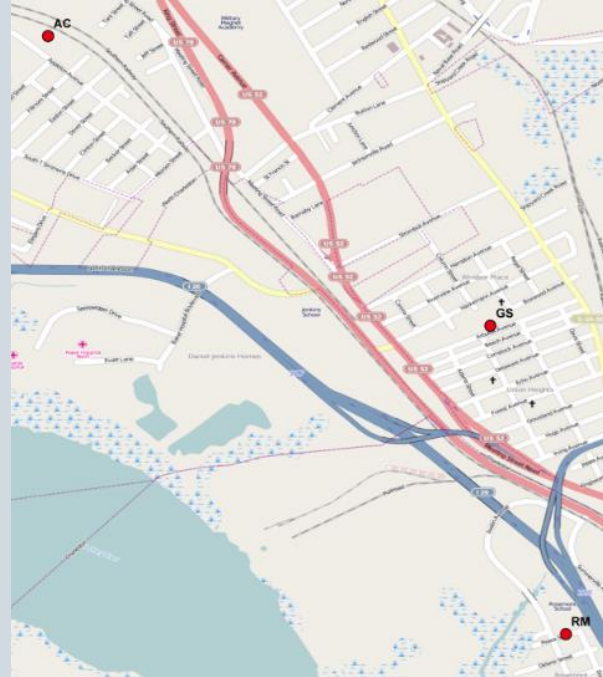
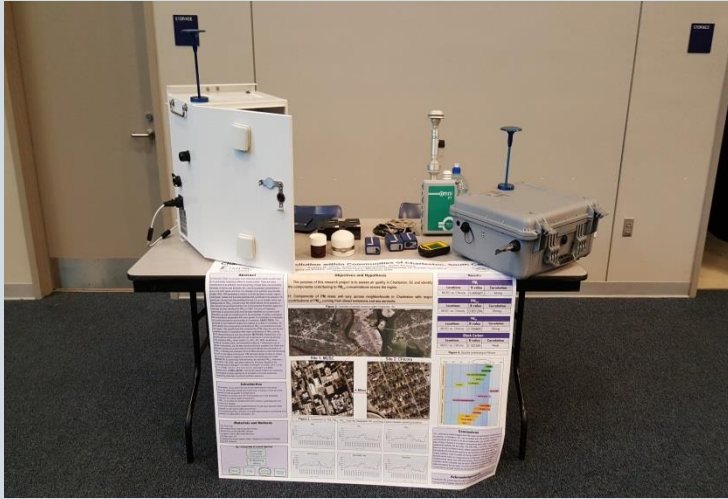


Project Displays

Community-based Research using Citizen Science



Air Monitoring



PURPOSE

Examine how land use policy and practices in North Charleston are contributing to or relieving community's risk of exposure to environmental hazards associated with land use types that are incompatible with residential such as industrial and heavy commercial.

KEY FINDINGS

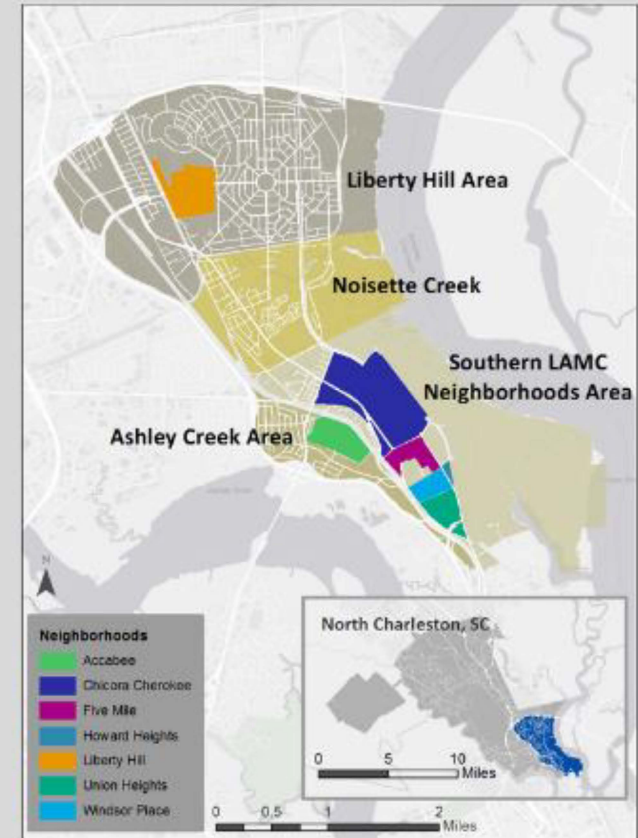
- 📍 The neighborhoods at highest risk of exposure to adverse environmental effects are at the Southern end of the study area and include: Accabee, Five Mile, Howard Heights, Windsor Place and Union Heights.
- 📍 Contemporary land use practices and decisions are exacerbating pre-existing disparities evidenced by:
 - Amount of land use types incompatible with residential are increasing within and surrounding the subject neighborhoods and heightening their vulnerability to effects of environmental hazards, air pollution, urban decay, man-made and natural disasters.
 - Neighborhoods in the northeast corner of the study area that skew more white and affluent are seeing a reduction in impact as a result of the effects of protective overlay districts and down-zoning.

METHODS

- 1) Analysis of zoning policy and classification of current zoning types and land use categories by "impact factor," (impact defined as adverse environmental effects)
- 2) Spatial analysis using ArcMap v10.4 to assess:
 - Distribution of land use types
 - Patterns in land use decisions over time
 - Areas of heightened risk of exposure

STUDY AREA

Seven focus neighborhoods of the Charleston Community Research to Action Board (CCRAB) in North Charleston, SC.



Service Layer Credits: City of North Charleston, Lowcountry Alliance for Model Communities (LAMC), Nick Rubin, Chloe Stuber, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

To view results in map viewer, visit:
<https://arcg.is/1Gfj4q>