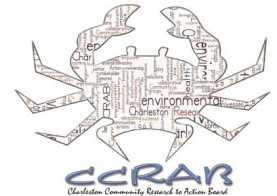


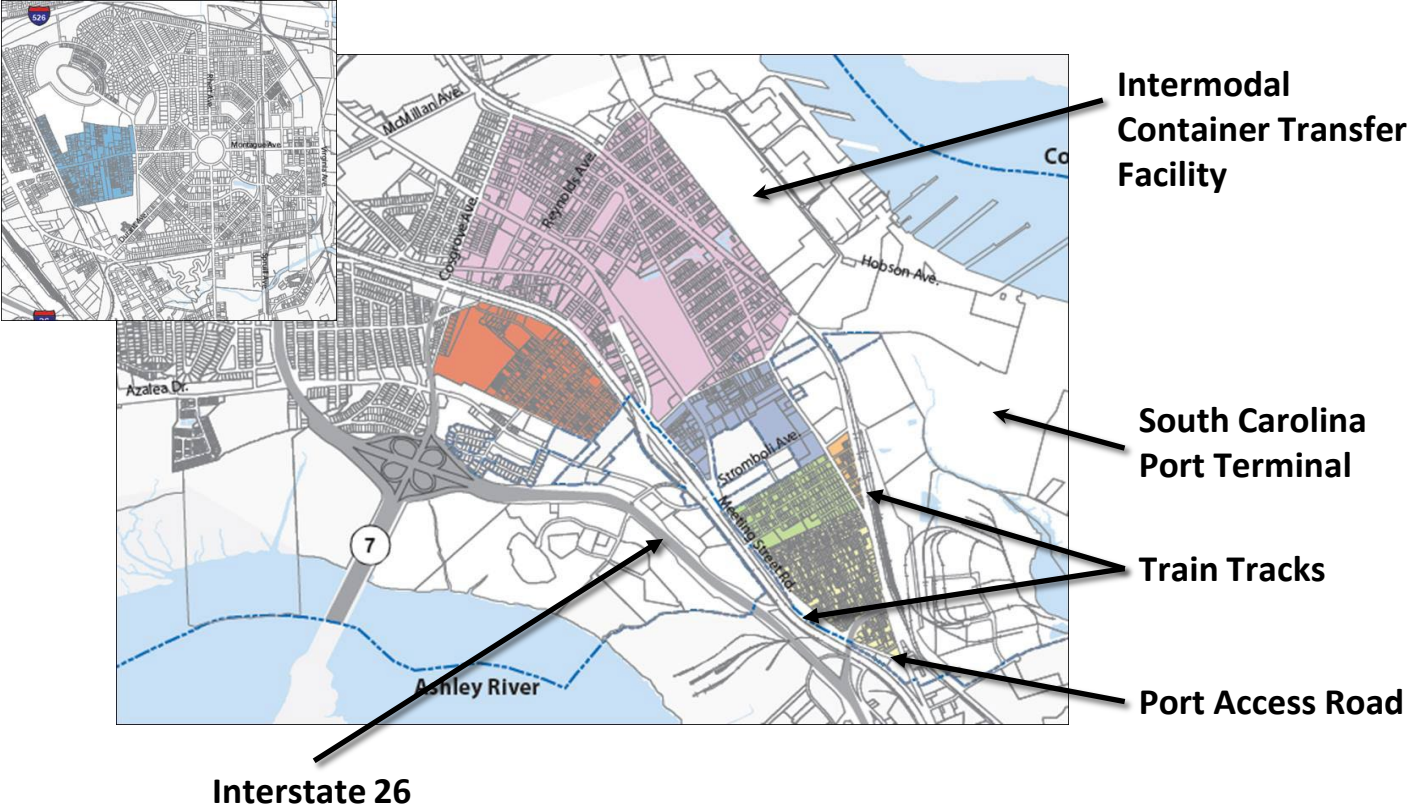
# Citizen Science and Community Monitoring: Tools for Community Revitalization



**Omar Muhammad (LAMC and CCRAB)**



# 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**

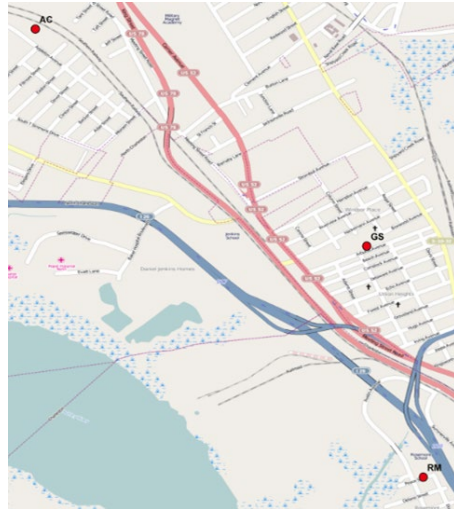
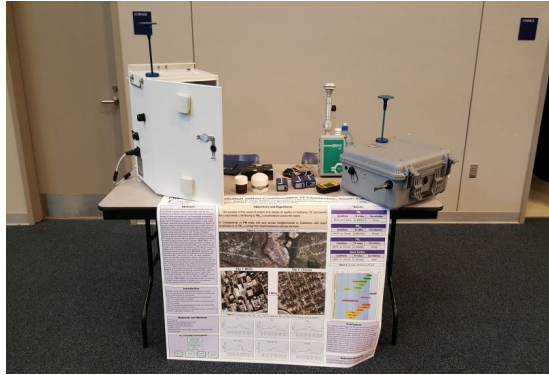
### 7 Communities : 4 Core Areas of Focus

Housing	Accabee	Affordable
	Chicora/Cherokee	Economic Development
	Five Mile	Education
	Liberty Hill	Environmental Justice
	Union Heights	
	Howard Heights	
	Windsor Place	

Built Environment



# Air Monitoring



**THE AIRBEAM**  
YOUR AIR QUALITY SENSOR

**AIRCASTING ANDROID APP**

MAP

40 85 190 175 220

Avg HR Now HR Peak HR

71 58 104

map and graph your air quality data in real time on your smartphone

29 Humidity - % SHT15-H

112 Activity Level - VMU BioHarness3-AL

20 60 70 80 100

Avg dB Peak dB

70 88

20 60 70 80 100

Avg dB Peak dB

54 84

## 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

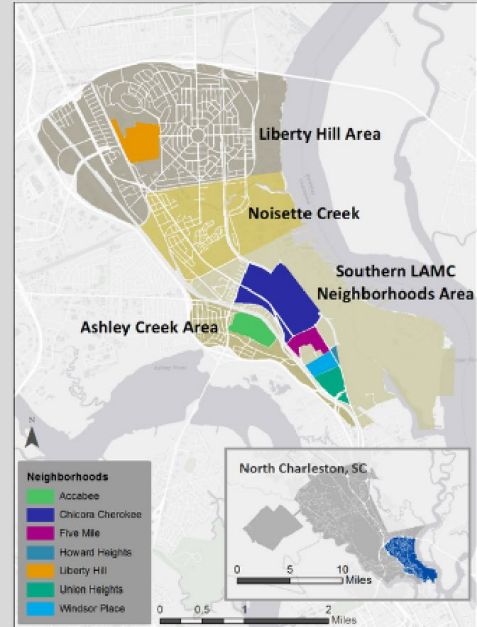
- 📍 The neighborhoods at highest risk of exposure to adverse environmental effects are at the Southern end of the study area and include: Accabee, Five Mile, Howard Heights, Windsor Place and Union Heights.
- 📍 Contemporary land use practices and decisions are exacerbating pre-existing disparities evidenced 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

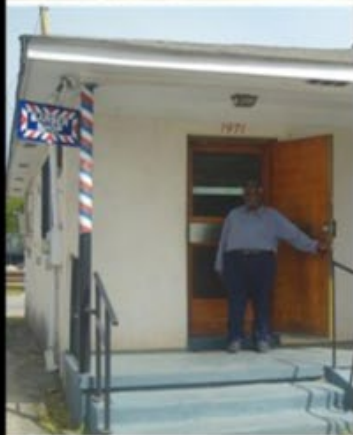
## STUDY AREA

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), Nisk Rubin, Chloe Stuber, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

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



**Neutral (0)**

**Low (1)**

**Medium (2)**

**High (3)**

**Very High (4)**

Figure 2. Scale of impact classification system with images of corresponding land uses in North Charleston, SC.

Contact

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