Democratizing Geospatial Technology:

A Model for Providing Technical Assistance in Community Based Participatory Mapping to Environmental Justice Stakeholder Communities

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David Padgett leading a Deep South Center for Environmental Justice community asset mapping training in Gulfport, MS. Credit: Deep South Center for Environmental Justice.

DEEPSOUTH CENTER FOR ENVIRONMENTAL JUSTICE

EthicalGEO

TENNESSEE STATE UNIVERSITY

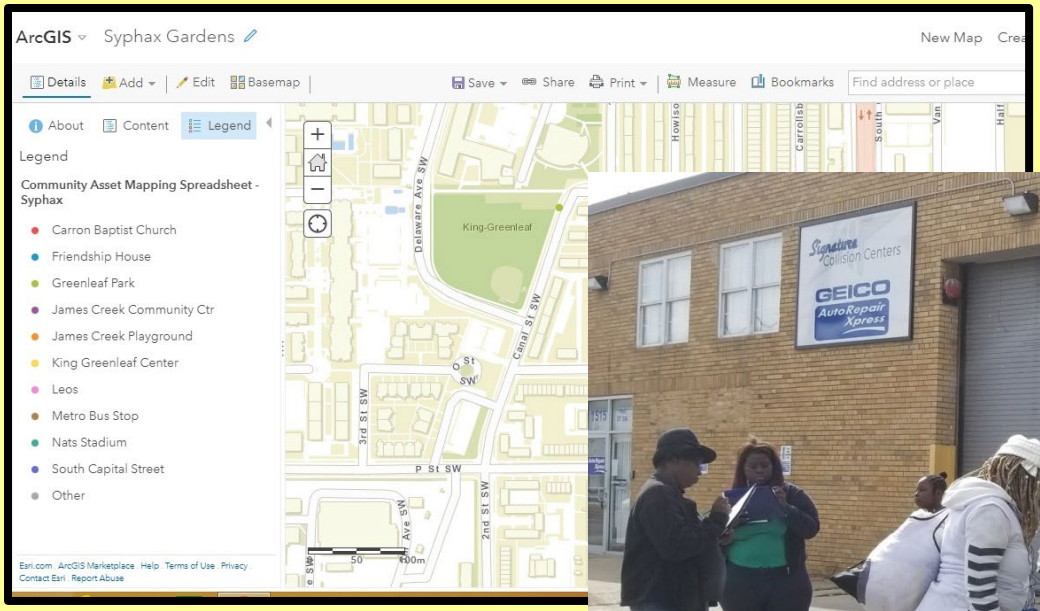
EthicalGEO
"Democratizing Geospatial Technology" Project Goals

The EthicalGEO Fellowship funds will be used to support our Gulf Coast Equity Consortium Community Based Organization (CBO) partners' community mapping objectives (assets, disamenities, EJ SCREEN, etc). Through a collaborative effort, we will develop the main project deliverable - a replicable community-based participatory mapping tutorial for environmental justice stakeholders. The tutorial will be designed to be customized to meet the specific needs of communities in the US and abroad.

EthicalGEO
"Democratizing Geospatial Technology"
Geographic information systems (GIS) workshops at Community Based Organization Sites

“No Tech” Community Walk Throughs

Mental mapping exercise during which community stakeholders determine the objectives and goals of the community asset mapping project. Locations of desirable land uses are identified without global positioning systems (GPS) or geographic information systems (GIS) support.

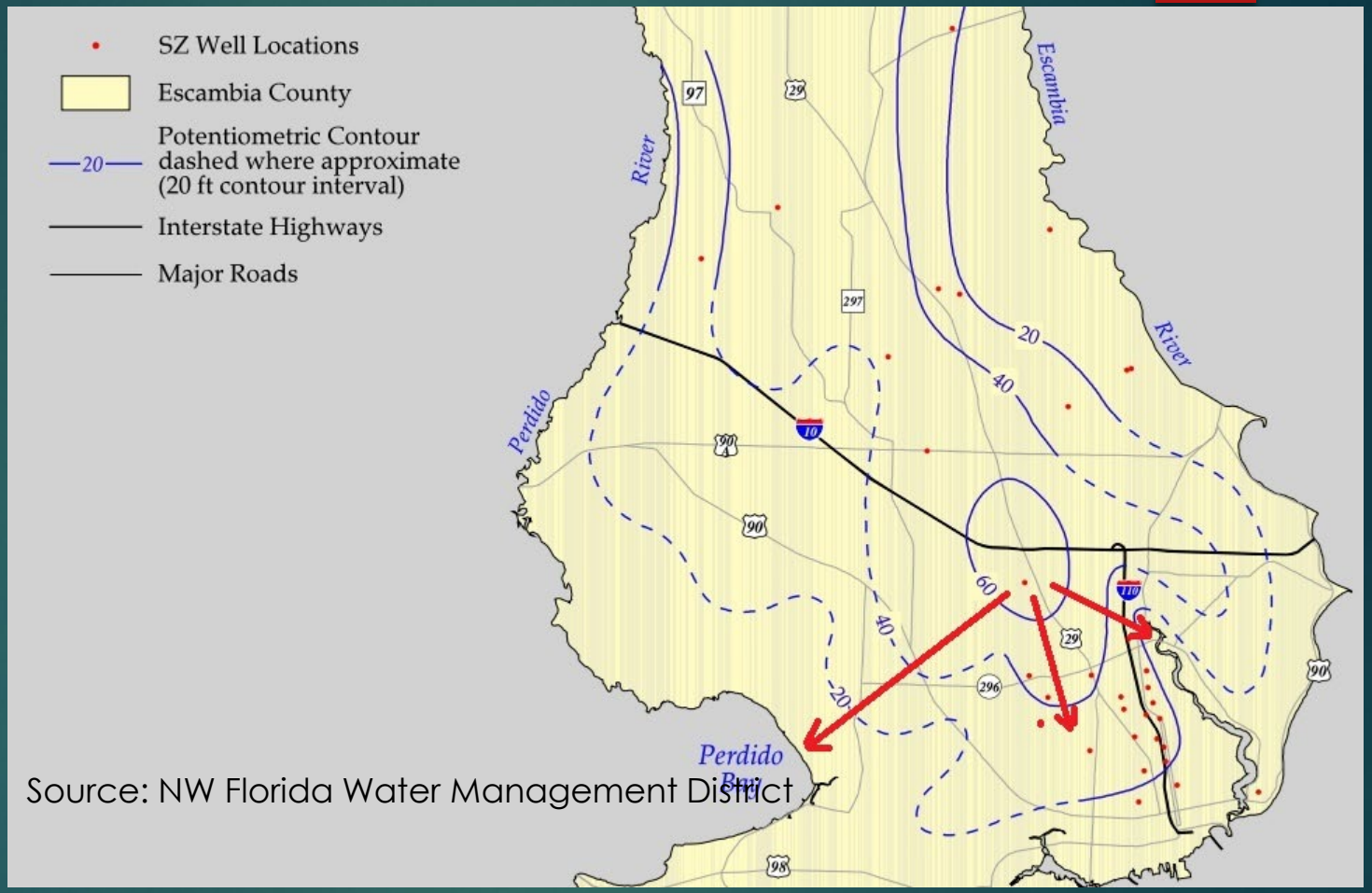


Community Asset Mapping Training: Buzzard Point Neighborhood – Washington, DC

Case Study 1: Wedgewood Community Pensacola, Florida

Shallow Groundwater Flow Characteristics: Southern Escambia County, Florida

Note that shallow groundwater flows perpendicular to potentiometric contour lines, from a "high" near the location of numerous contaminated burrow pits and unlined landfills.



Source: NW Florida Water Management District

Fall 2019 -Wedgewood Community stakeholders presented this and other maps at a County Commission meeting to successfully block plans to construct a four-lane highway through their neighborhood.

Case Study 1: Wedgewood Community Pensacola, Florida

Fall 2021 – Update: Wedgewood stakeholders block landfill permit using local hydrology maps and aerial photos to support their argument.

Case Study 2: Turkey Creek Community Gulfport, Mississippi

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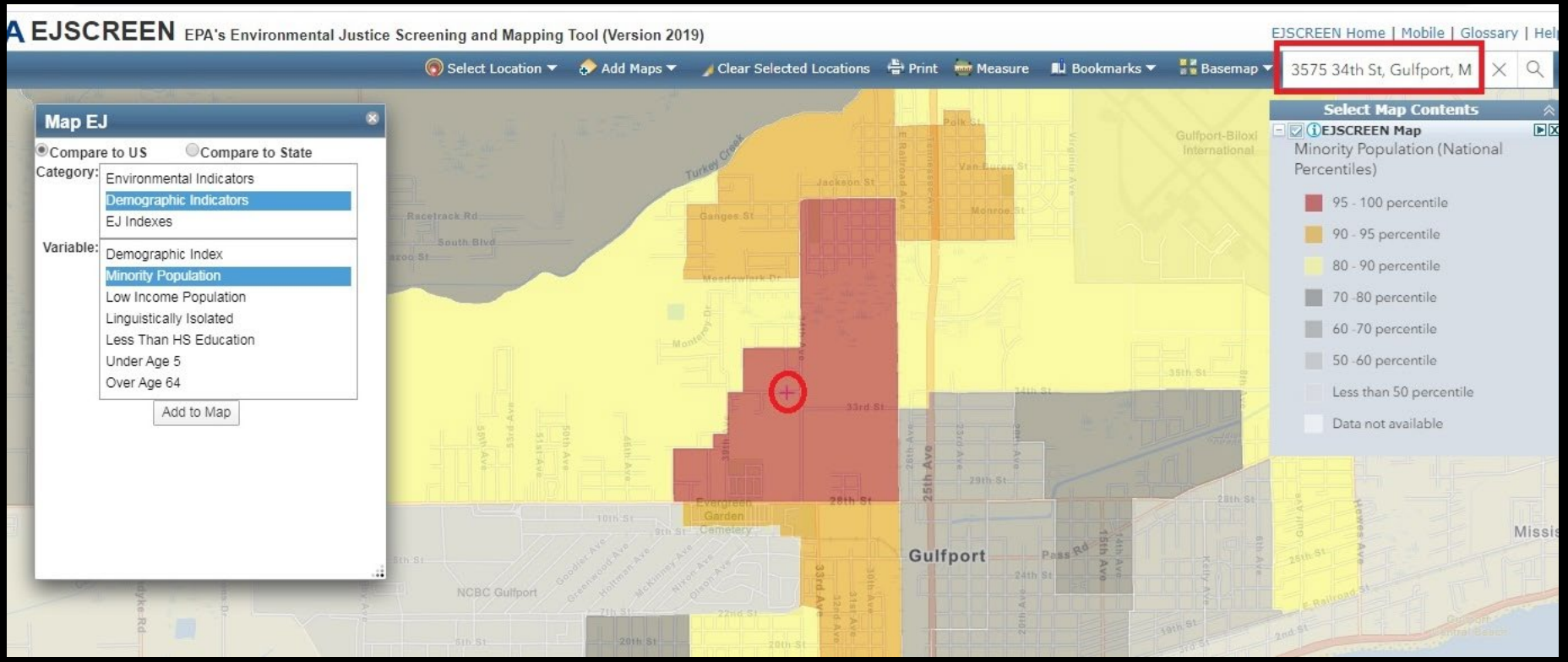

Summer 2020 - The Historical Turkey Creek Community is using GIS maps in support of a legal fight against the planned "North Port Property" development (symbolized by the **red circle**). Out-dated zoning codes designate the community as "Industrial" versus "Residential." The above EJ SCREEN map shows the potential impacts upon nearby minority populations.

Case Study 3 - Community Asset Mapping with ArcGIS: Africatown Community – Mobile, Alabama

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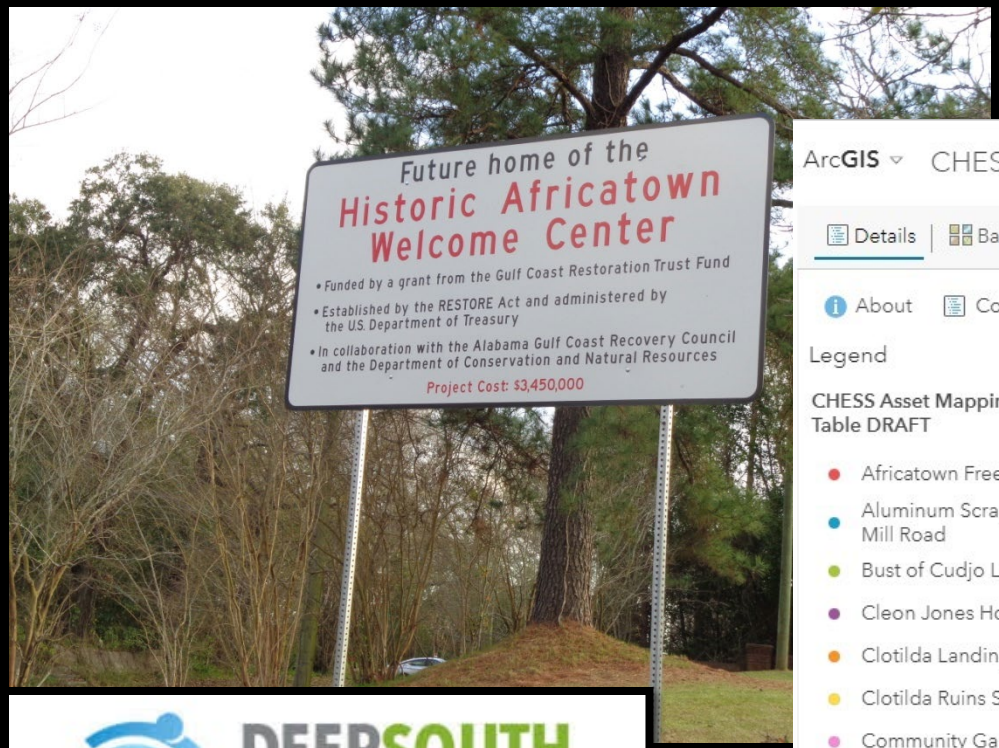
Summer 2020 – The 2019 finding of the Clotilda, the last ship known to have illegally transported Africans from Africa to the US in 1860, has brought major attention to the Africatown Community. The story was a cover feature in the February 2020 National Geographic.

Case Study 3 - Community Asset Mapping with ArcGIS: Africatown Community – Mobile, Alabama



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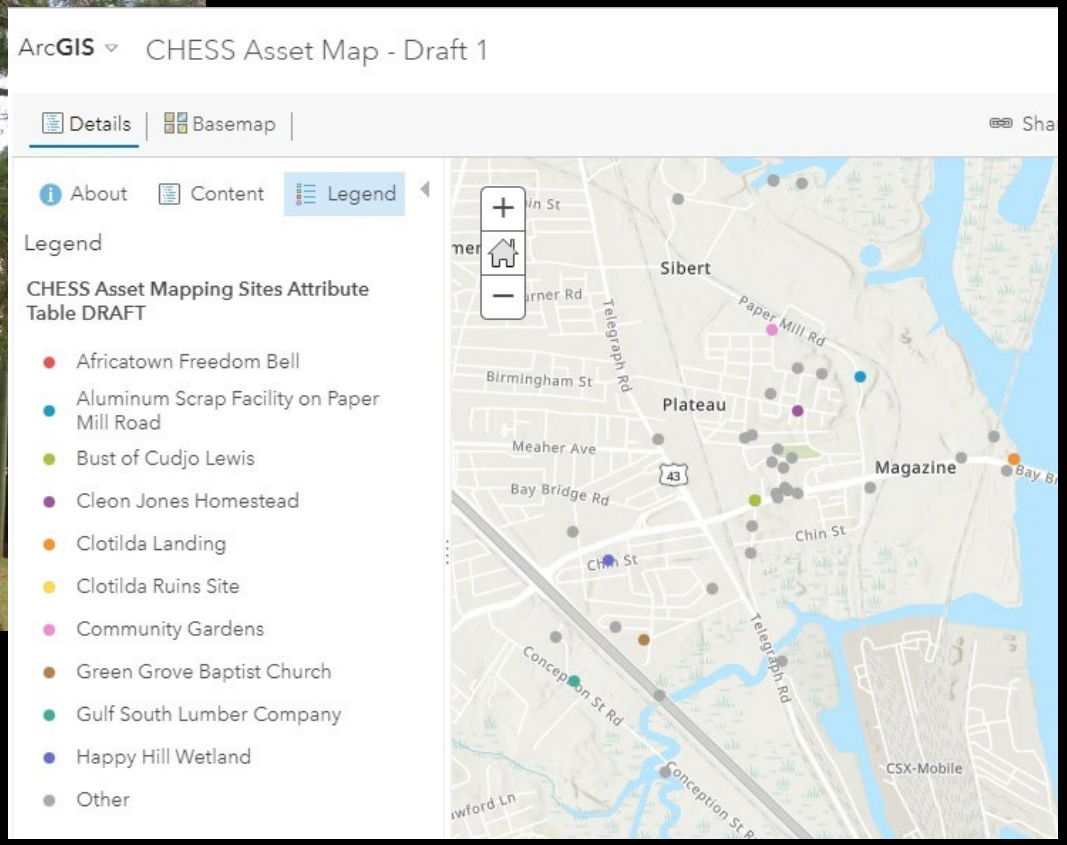
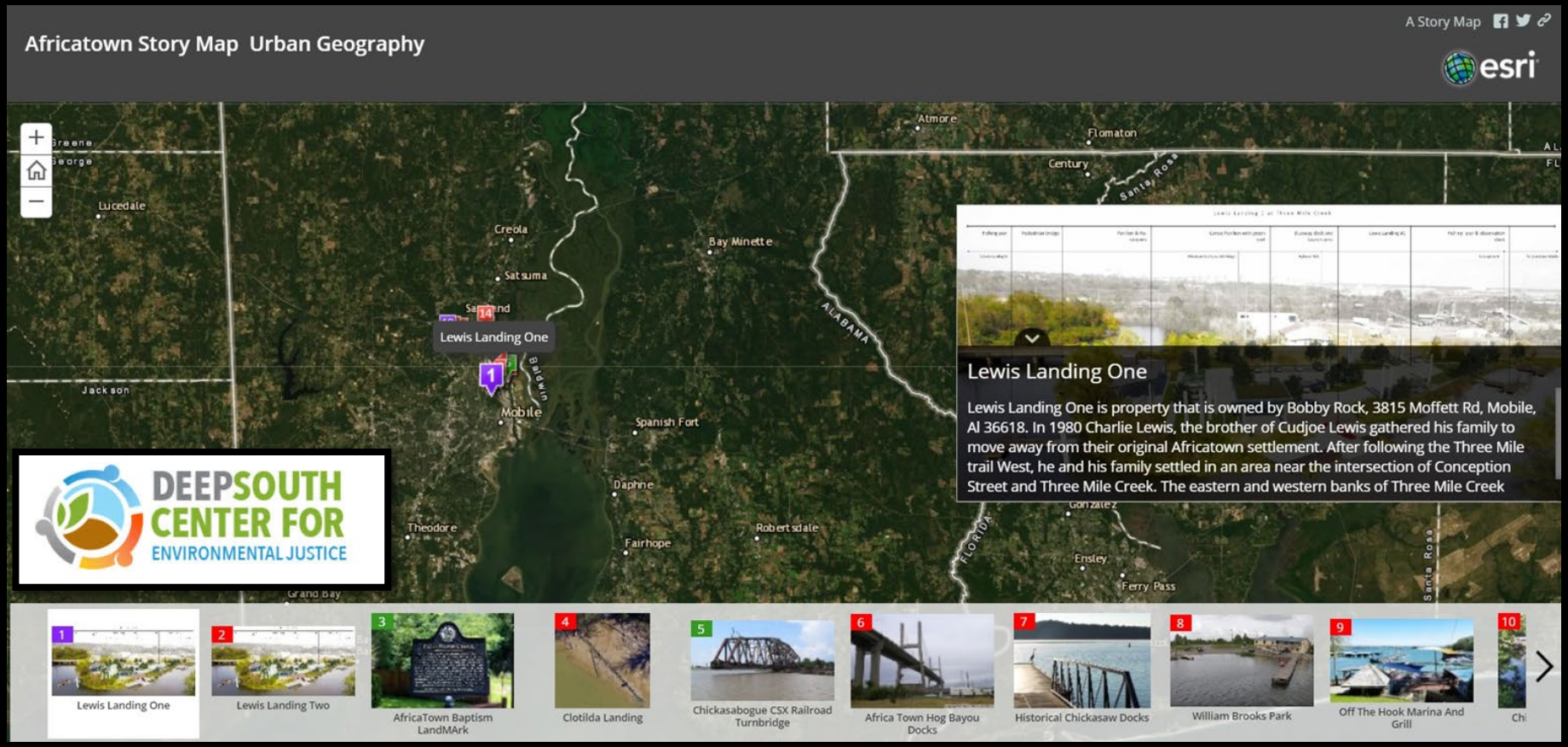


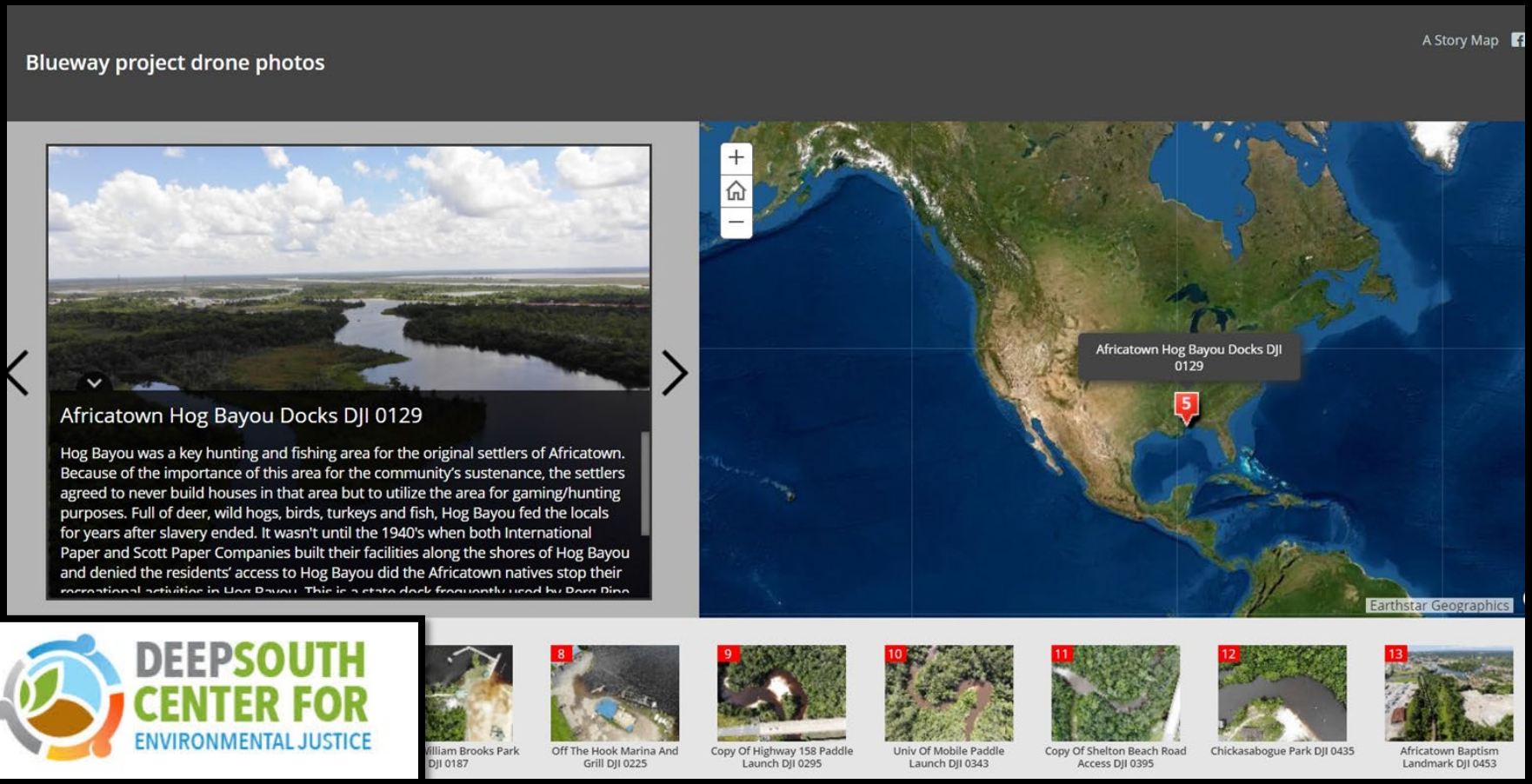
Summer 2020 – Africatown community stakeholders collaborate with Tennessee State University in community-based participatory mapping using GIS to retain control of their local history, culture, and community assets.

Case Study 3 - Community Asset Mapping with ArcGIS: Africatown Community – Mobile, Alabama



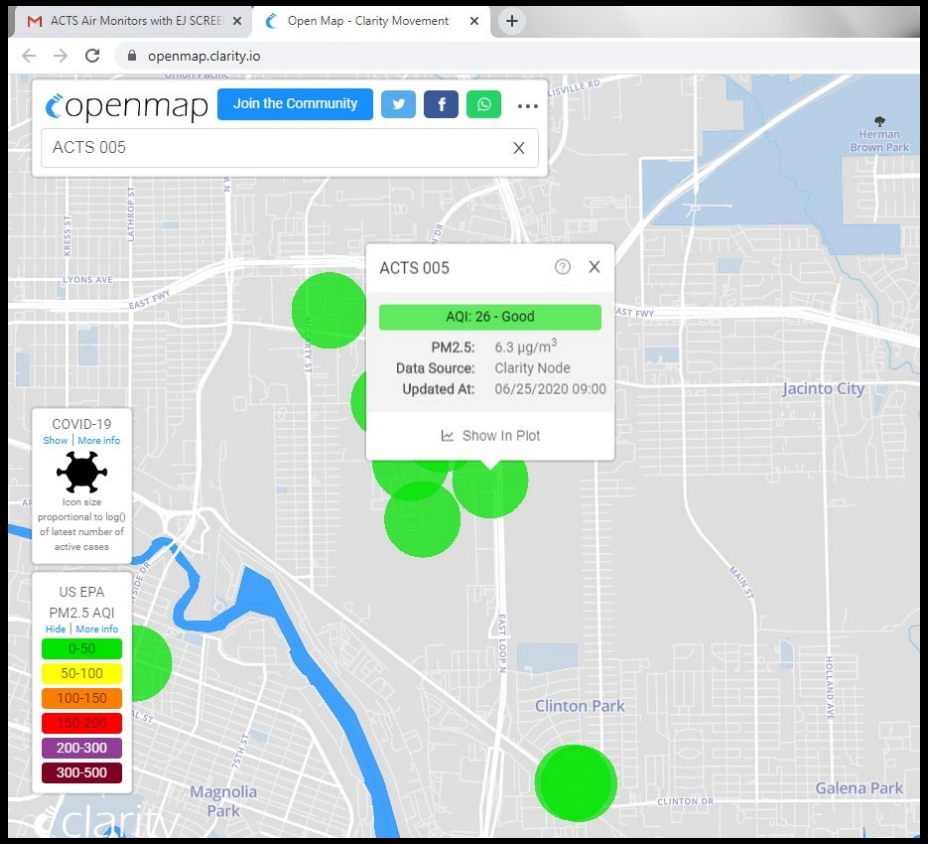
Summer 2020 – Africatown community stakeholders collaborate with Tennessee State University Urban Geography students and the National Park Service to create a story map of the 14 points of interest on the proposed Africatown Connections Blueway

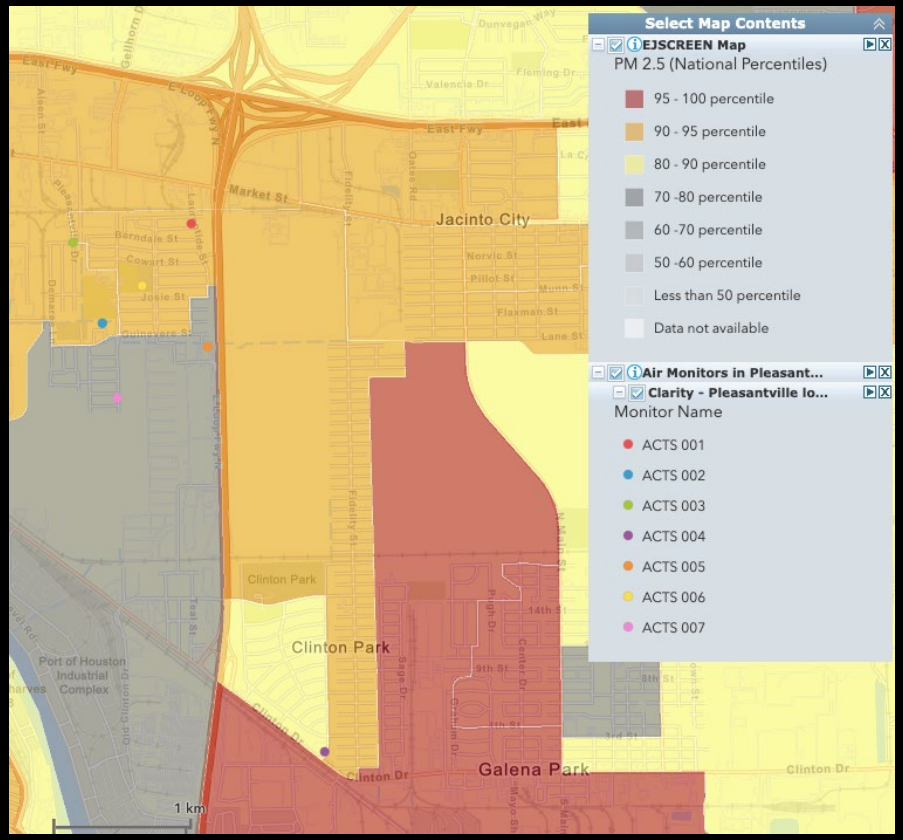
Case Study 3 - Community Asset Mapping with ArcGIS: Africatown Community – Mobile, Alabama



Summer 2021 – Tennessee State University, the US Park Service and Mobile, AL citizen scientists collaborate on a story map featuring high resolution drone images in support of the proposed the Africatown Connections Blueway project https://arcg.is/1SbzOb

Case Study 4: Pleasantville Community Houston, Texas





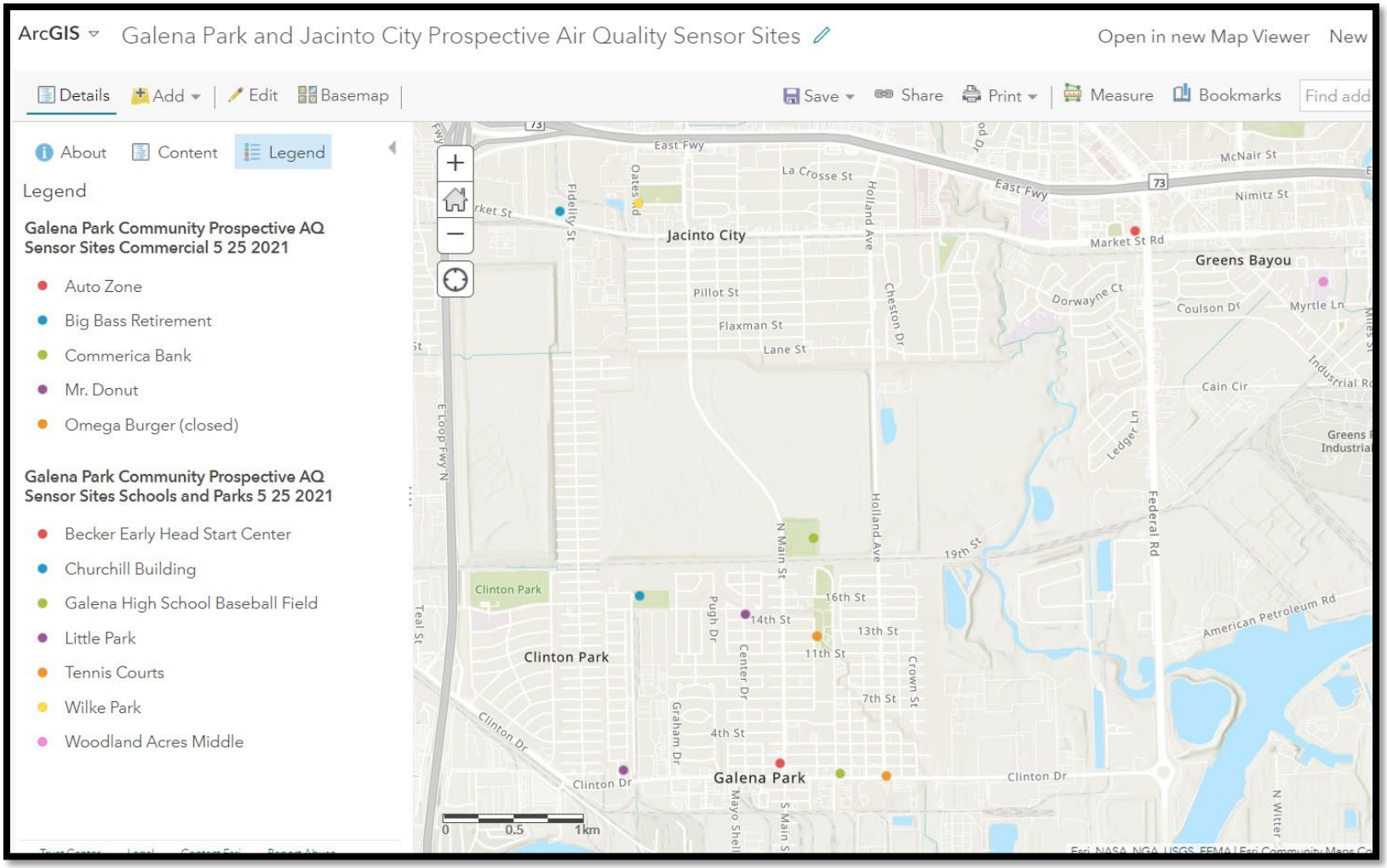
Summer 2020 – The Pleasantville Community was awarded a grant from the Environmental Defense Fund to locate air quality monitors in their neighborhood and environs. Particulate Matter (PM 2.5) and other criteria air pollutant measurements are available in real time on an online map portal (above left). Air monitor locations are layered onto EJ SCREEN maps to assess relative exposure risks.

Case Study 5: Historic Overtown Community
Miami, Florida

Fall 2019 – Fall 2020 – Members of GirlTrek (https://www.girltrek.org/), representing the Historic Overtown Community, collaborated with Catalyst Miami https://www.catalystmiami.org/ in an asset mapping workshop in the fall of 2019, that evolved into the development of the "Activate Overtown Tour" https://goingovertown.org/activate-overtown/ . Among the objectives of the ongoing project is protect significant Black historical properties from being lost to gentrification, and in support of "heritage tourism."

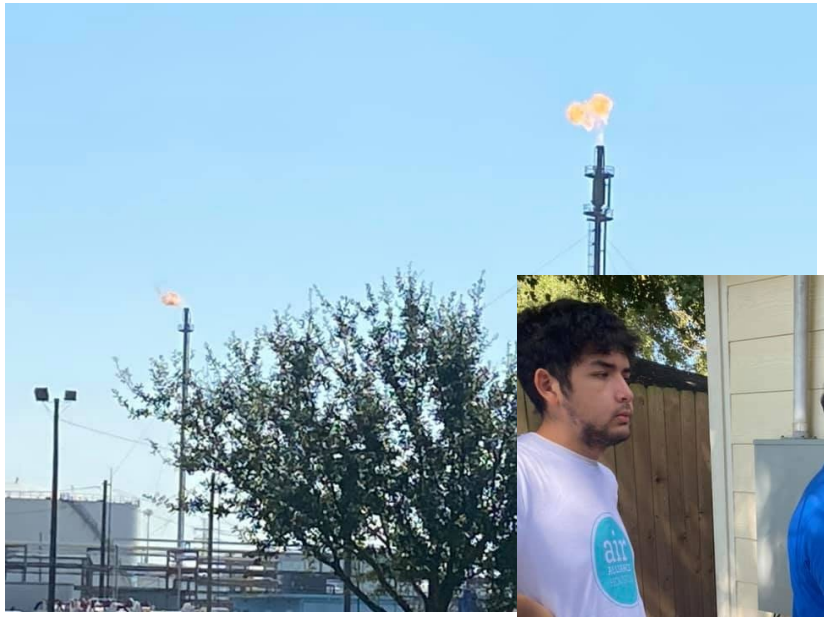
Case Study 6: Air Alliance Houston Community Air Monitor Program

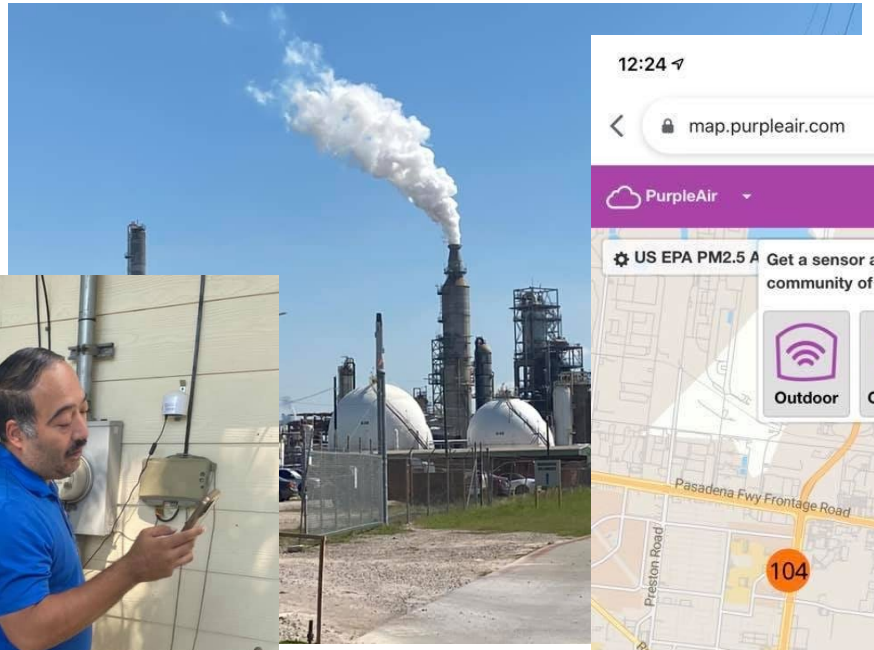
October 2020-June 2021: Prospective air quality sensor locations selected via virtual community-based participatory mapping using ArcGIS Online and Google Maps

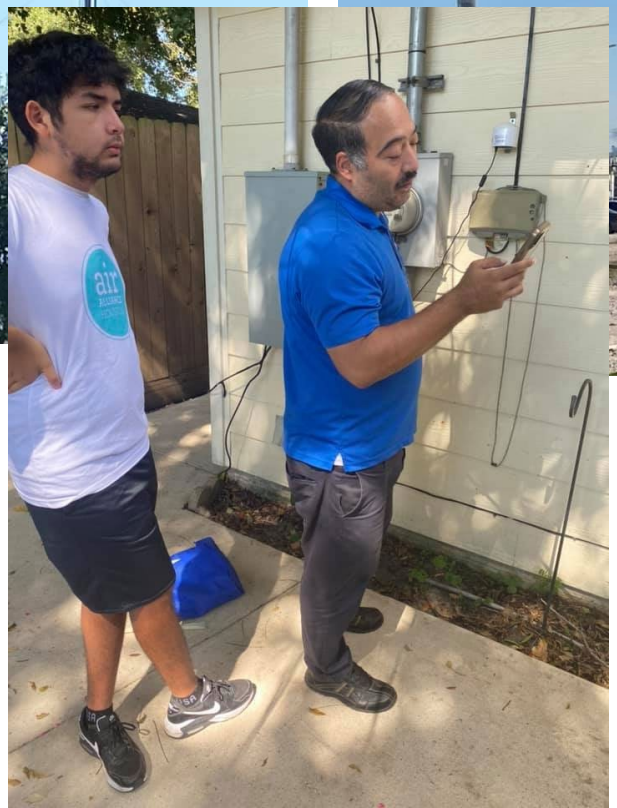


Case Study 6: Air Alliance Houston Community Air Monitor Program Galena Park Community

October 2021: On the ground tour of CAMP communities lead by AAH Air Quality Ambassadors. Pictured here – Refineries in the Galena Park Community, and installation of Purple Air Monitor by AAH Leader, Juan Flores.

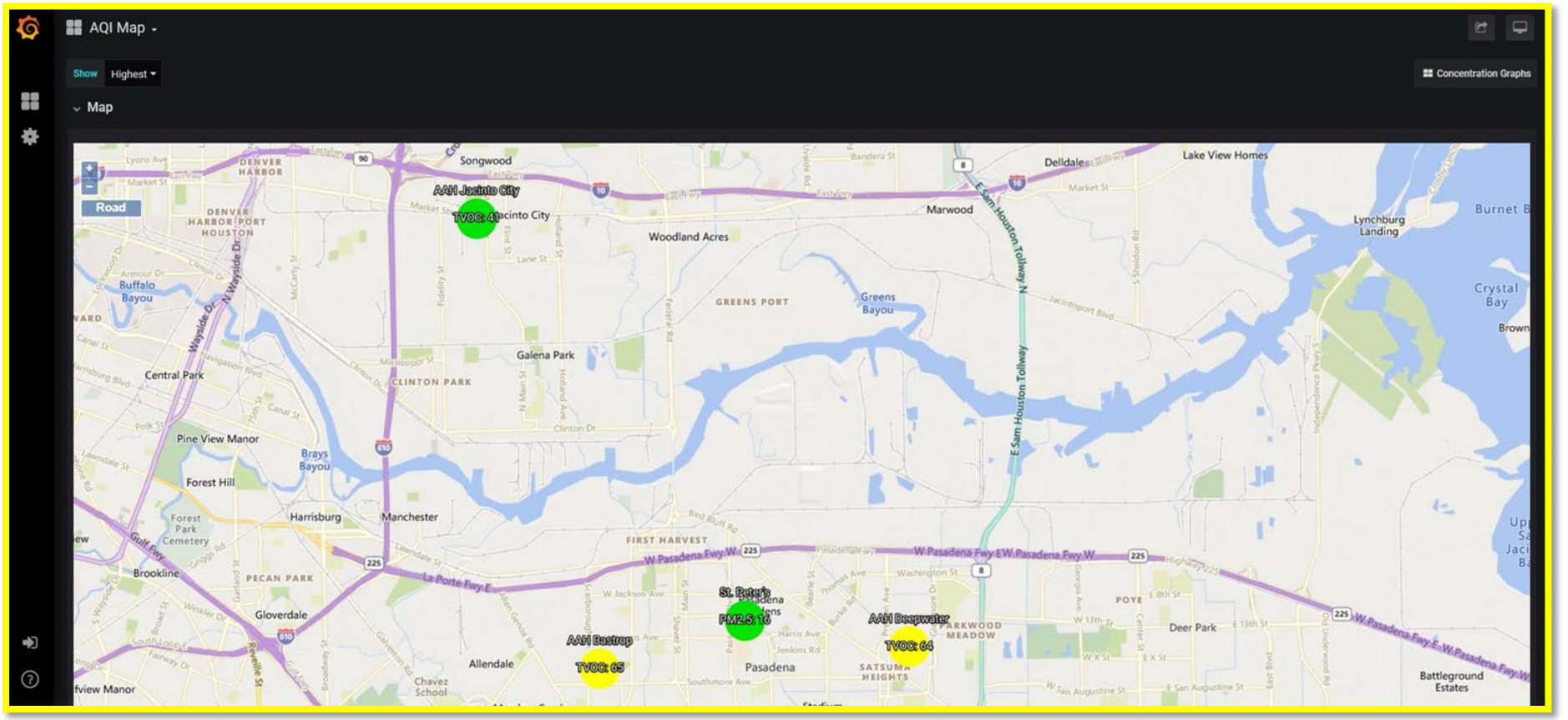






Case Study 6: Air Alliance Houston Community Air Monitor Program

November 2021: AAH Air Monitor Dashboard Including APIS Air Monitors – Map display includes detected levels of VOCs. Community placed APIS and Purple Air Sensors will be added in the near future.



Historically Black College and University (HBCU) Environmental Justice Technical Team

Dr. David A. Padgett, Tennessee State University; Ms. Pamela Bingham, Bingham Consulting Services, Dr. Paul Robinson, Charles Drew University of Science and Medicine; Dr. Linda Loubert, Morgan State University; Dr. Reginald Archer, Tennessee State University; Dr. Tony Graham, North Carolina A&T State University (retired); Mr. Malik Warren, Blue Meta Technologies; and Ms. Cari Harris, Independent Consultant

The HEJTT core group is providing technical assistance to environmental justice and community-based organization (CBO) stakeholders in support of a number community-based participatory research (CBPR) activities, including:

- Applications of EJ SCREEN and ArcGIS Online in support of CBO community air quality monitoring project in the Pleasantville Community in Houston, Texas.

- Stakeholder training in geoscience and cartography in support of strategies to mitigate the negative impacts of landfills upon human health in the Wedgewood Community in Pensacola, Florida.

- Real estate data collection and analysis in support of CBO efforts to develop heritage tourism and preserve critical historical resources in the Africatown Community in Mobile, Alabama.

- Community-based participatory asset mapping and hydrological data analysis in support of community legal actions versus a proposed inland port facility that threatens the quality of life in the historic Turkey Creek community in Gulfport, Mississippi.

- Geographic information systems (GIS) training in support of a community-based flood mitigation program in New Orleans' Lower Ninth Ward.

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