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# Mapping Park Equity in Maryland

*Jan-Michael Archer, M.S.*



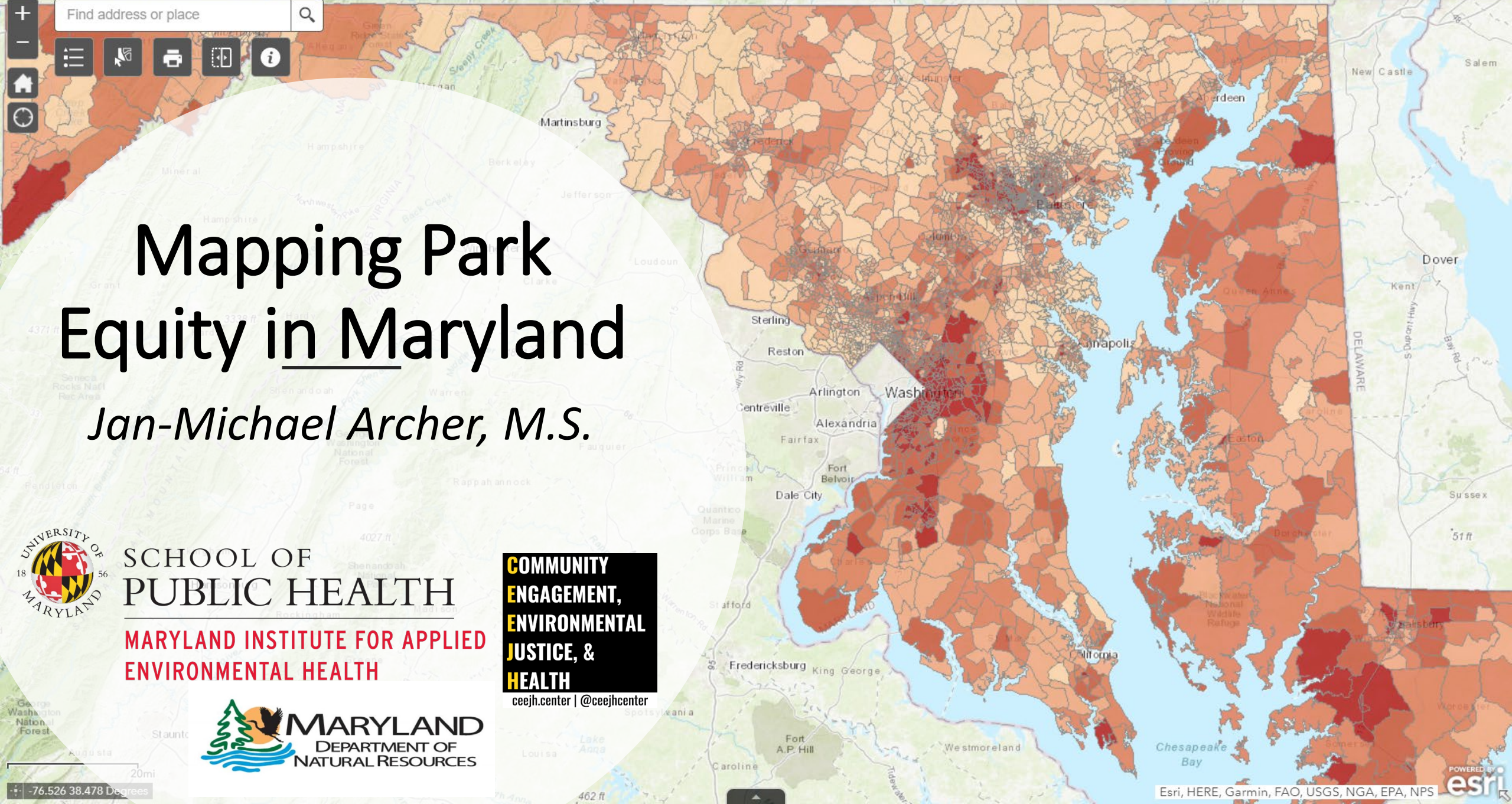
SCHOOL OF PUBLIC HEALTH

MARYLAND INSTITUTE FOR APPLIED ENVIRONMENTAL HEALTH



**COMMUNITY ENGAGEMENT, ENVIRONMENTAL JUSTICE, & HEALTH**

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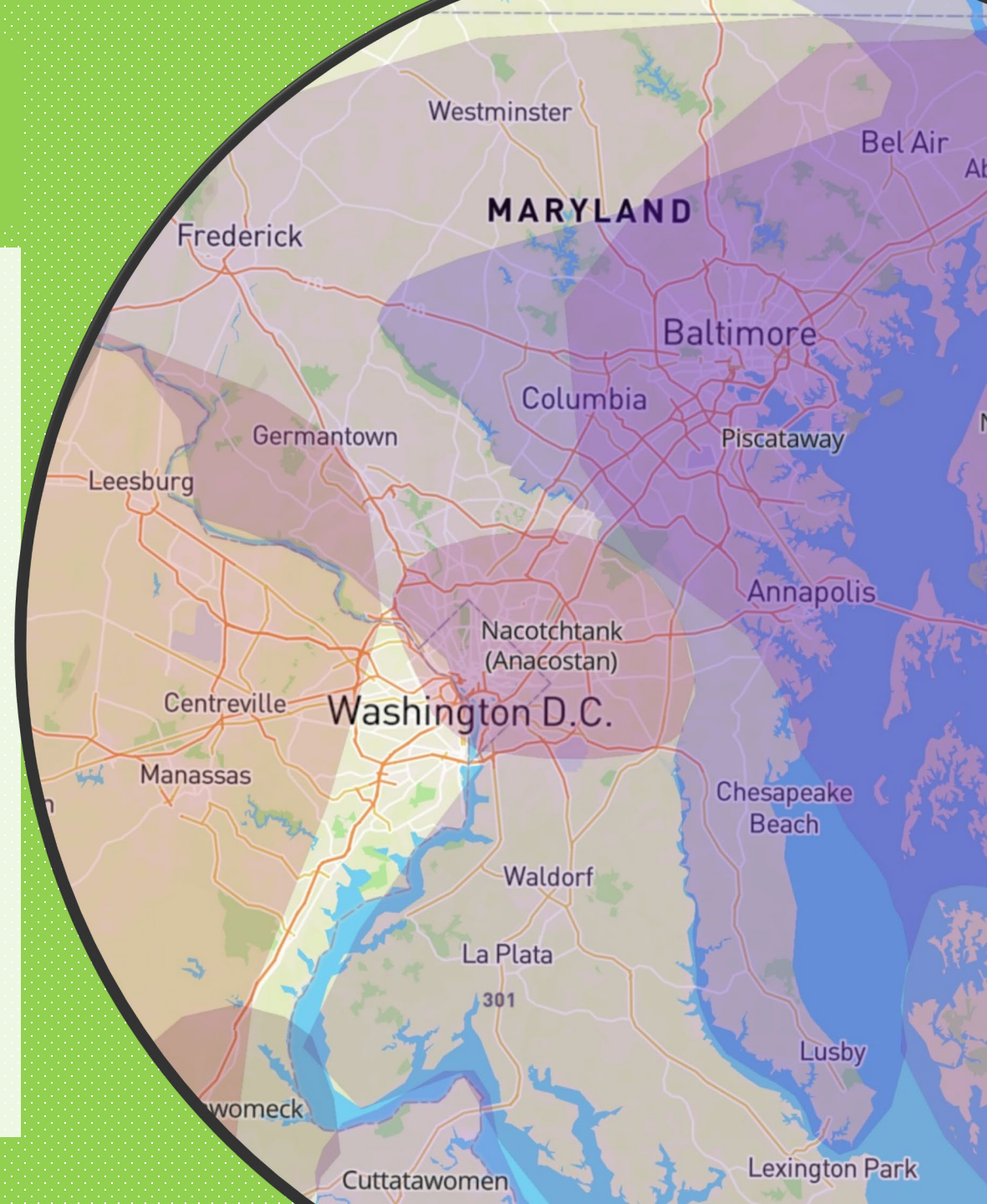


# Land Acknowledgement

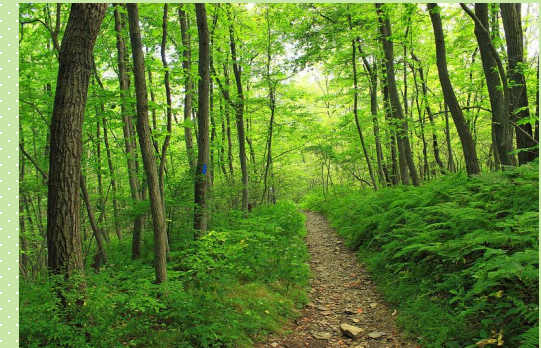
It is important to create dialogue and honor those who have been systemically disenfranchised. At CEEJH, we recognize the following:

1. Until recently, the existence, histories, and culture of North America's indigenous peoples have all but been erased from institutions, consciousness, and mainstream society in the United States.
2. **The University of Maryland-College Park campus is built on the ancestral lands of the Piscataway and Nacotchtank People.**
3. The indigenous lands that we now occupy were violently taken from the Piscataway People by European colonists.

We pay respect to the Piscataway and Nacotchtank people, their elders, and their ancestors.



# What is a park? What is green space?



# What Does **Equity** Mean?

- *Equity is the quality of:*
  1. *being fair and impartial*
  2. *Providing access, opportunity, and advancement for all*
  3. *Identifying and eliminating barriers to participation*

**Equal access to opportunities  
and resources for all  
members of society**

# Equality vs Equity vs Justice



# Park Equity Means...

Creating equal access to opportunities in parks and other green spaces for all

# Opportunities?

Per MDNR LPRP:

- Water recreation,
- Natural areas,
- Picnicking,
- Trails,
- Hunting,
- Fishing



LAND PRESERVATION AND RECREATION PLAN  
2019-2023





# Green Space Health Benefits



## GREENSPACE EXPOSURE

### Instoration

- Encouraging **physical activity** and social unity

### Restoration

- Direct and Restore Attention and Focus
- **Stress Recovery**

### Mitigation

- **Reducing** toxic exposures and stressors

## HEALTH AND WELL-BEING



# MORE Green Space Benefits

- Economic

- Housing and business value



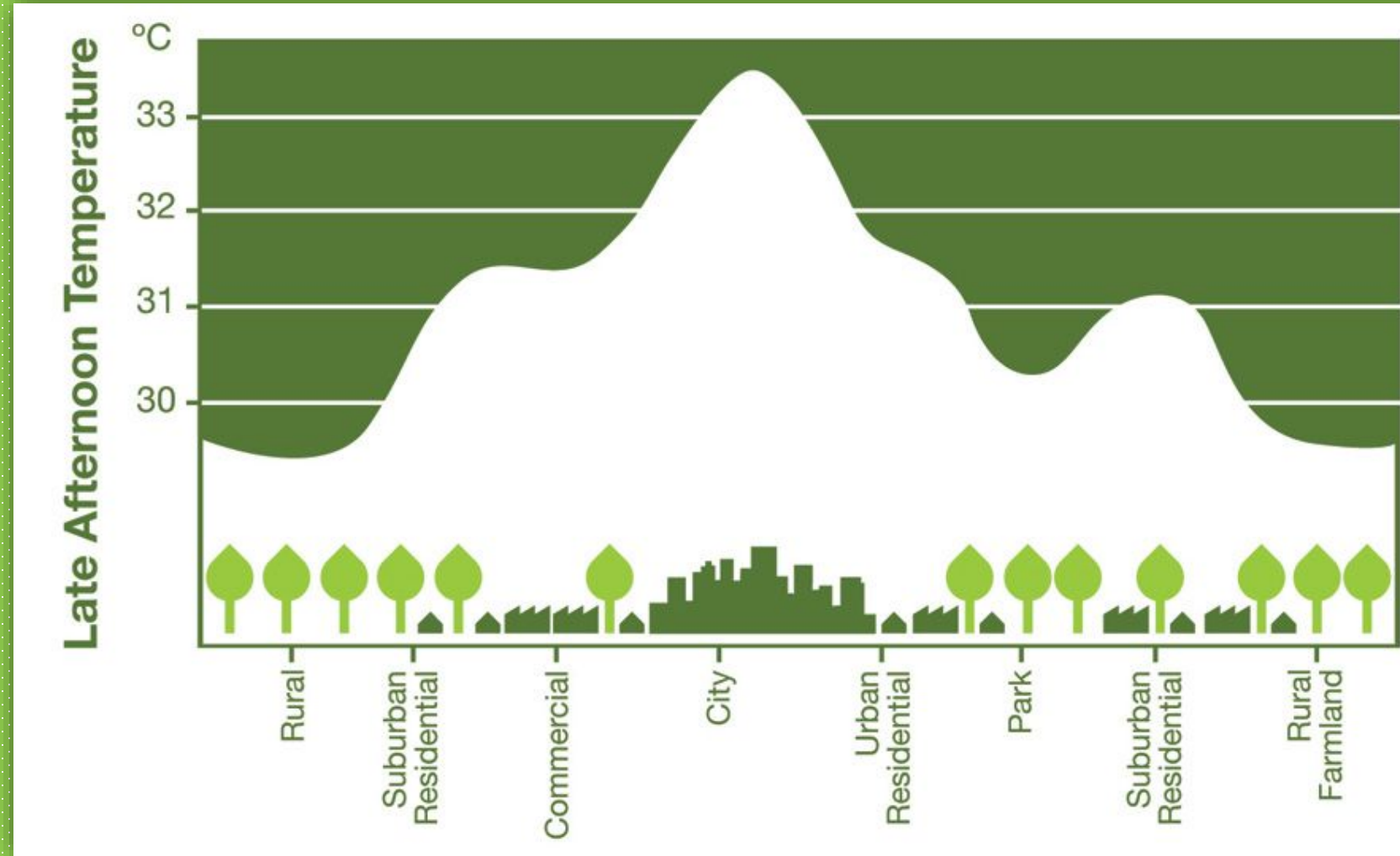
- Ecologic

- Stormwater and **climate (e.g. heat) mitigation**



- Sociologic

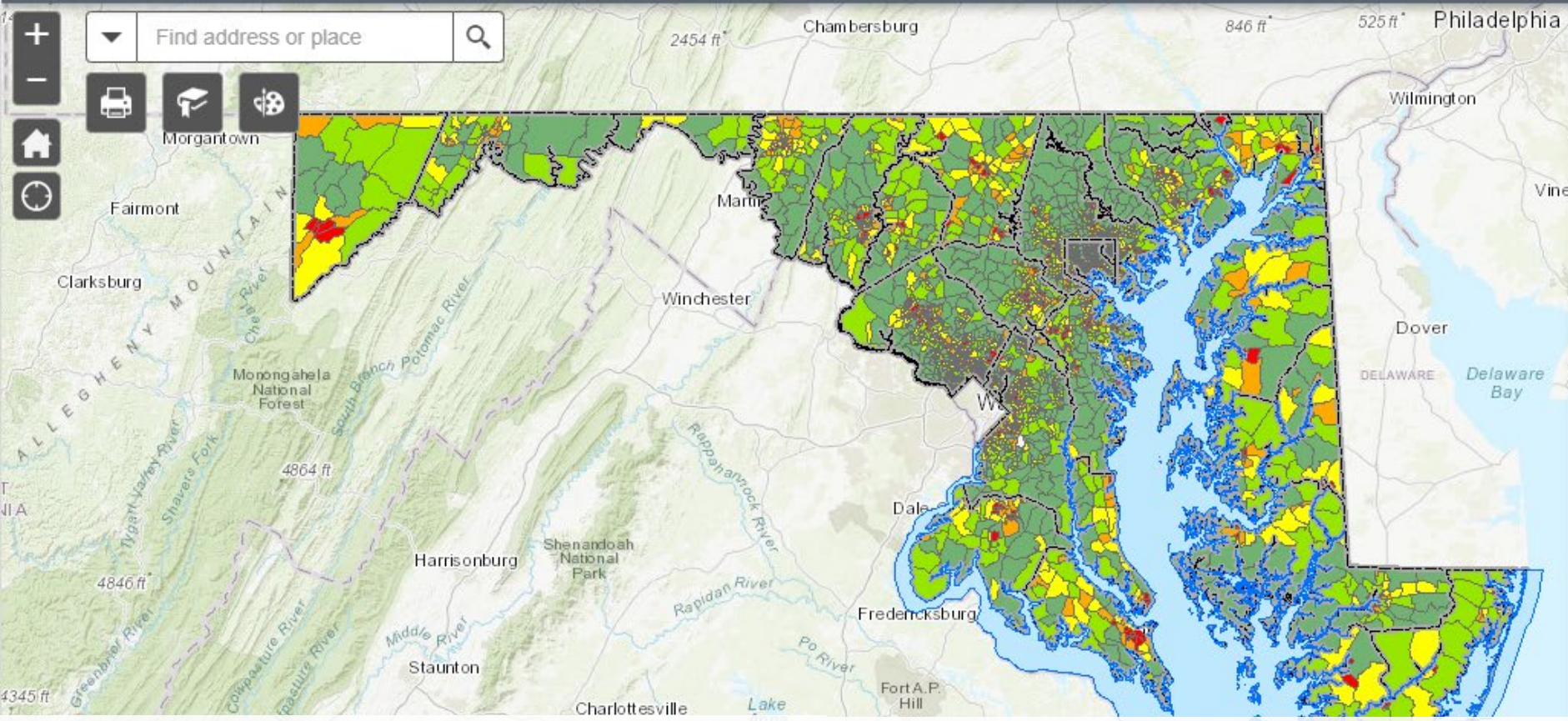
- **Crime\***  
\*When parks are well-maintained!



# Factors Affecting Park Access (n=33 articles)

- **% Non-White**
- **Median Household Income**
- % Less Than High School Education
- **% Children under 18**
- **% Adults over 65**
- % Obesity
- Homes built before 1950
- **Walkability**
- **Public Transportation Access**
- Bikeability
- Maintenance of facilities

- *Park Size*
- Type of Equipment
- Neighborhood crime
- Pedestrian Safety
- **Population Density**
- Nighttime lighting/visibility
- LULUs (e.g. landfills)
- Traffic
- Major water discharges
- Air pollution
- **Distance to Park**
- **Linguistic Isolation**



**About**

This interactive map is a tool to identify areas across the state in need of public park space. This analysis was developed to provide an initial quantitative tool to help expand public access to nature for underserved communities, and to provide a tool that employs national, statewide and local data in a consistent and strategic manner for the state and its local partners.

The analysis is built upon the combination of four data layers, and prioritizes areas in need of park space by

- High concentration of both children under the age of 17, and adults over the age of 65
- High concentration of populations below the poverty line
- High population density
- Low access to public park space

The Park Equity Analysis is a first look at where resources may be needed and is meant for guidance

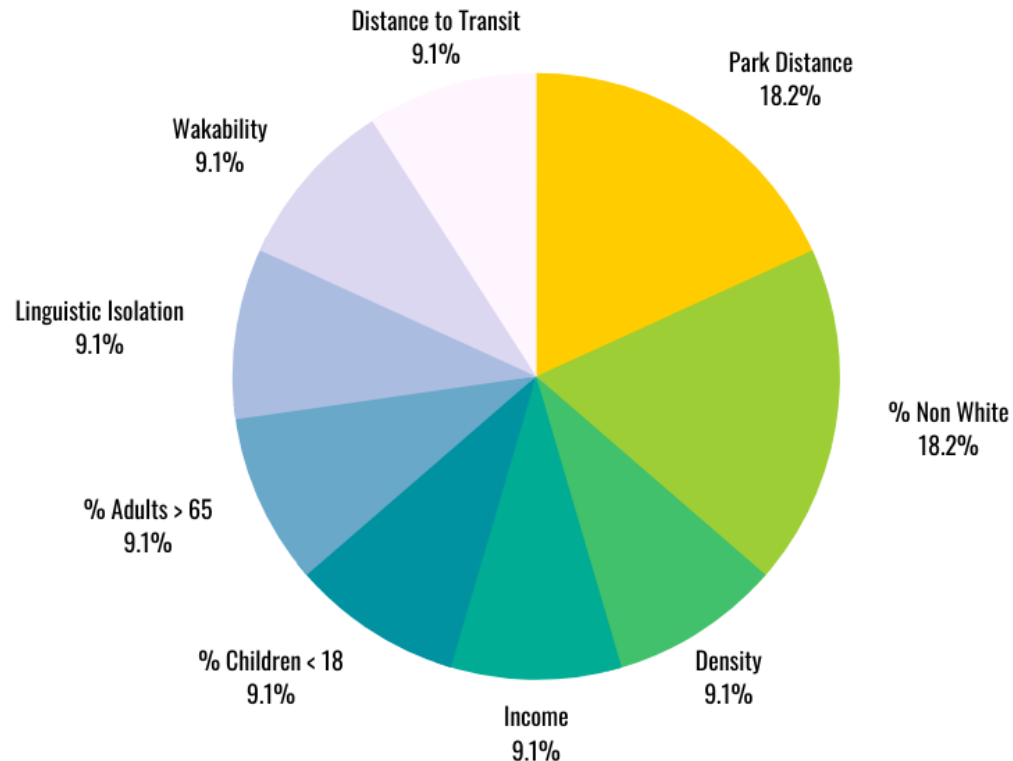
# MD DNR Park Equity Mapper

- 2008: Maryland Partnership for Children in Nature
- 2015/2016 Update:
  - Improved local data (census block group vs previous tracts)
  - Prince George's Co. data for "park poor" and "under canopied" senior citizens (65+) and minors (<18)

# MARYLAND'S PARK EQUITY TOOL

[HTTPS://DNR.MARYLAND.GOV/PAGES/PARKEQUITY.ASPX](https://dnr.maryland.gov/pages/parkequity.aspx)

## PARK EQUITY DATA LAYERS LAYERS & WEIGHTING OF MODEL



**PARK DISTANCE**  
LOCAL AND STATE DATA



**POPULATION DENSITY**  
US CENSUS

**INCOME**  
US CENSUS



**% NON-WHITE**  
US CENSUS

**LINGUISTIC ISOLATION**  
US CENSUS



**% CHILDREN < 18**  
US CENSUS

**% ADULTS > 65**  
US CENSUS

**WALKABILITY**  
EPA EJ SCREEN

**ACCESS TO TRANSIT**  
MARYLAND DOT



## MD Park Equity Mapper allows users to:

- Explore layers of green space access concern,
- Determine/Compare 'Score' of different census block groups throughout the state, and
- View additional context layers relevant to specific areas of concern.
- **Regulators:** Identify areas of park need
- **Residents:** Document lived experiences

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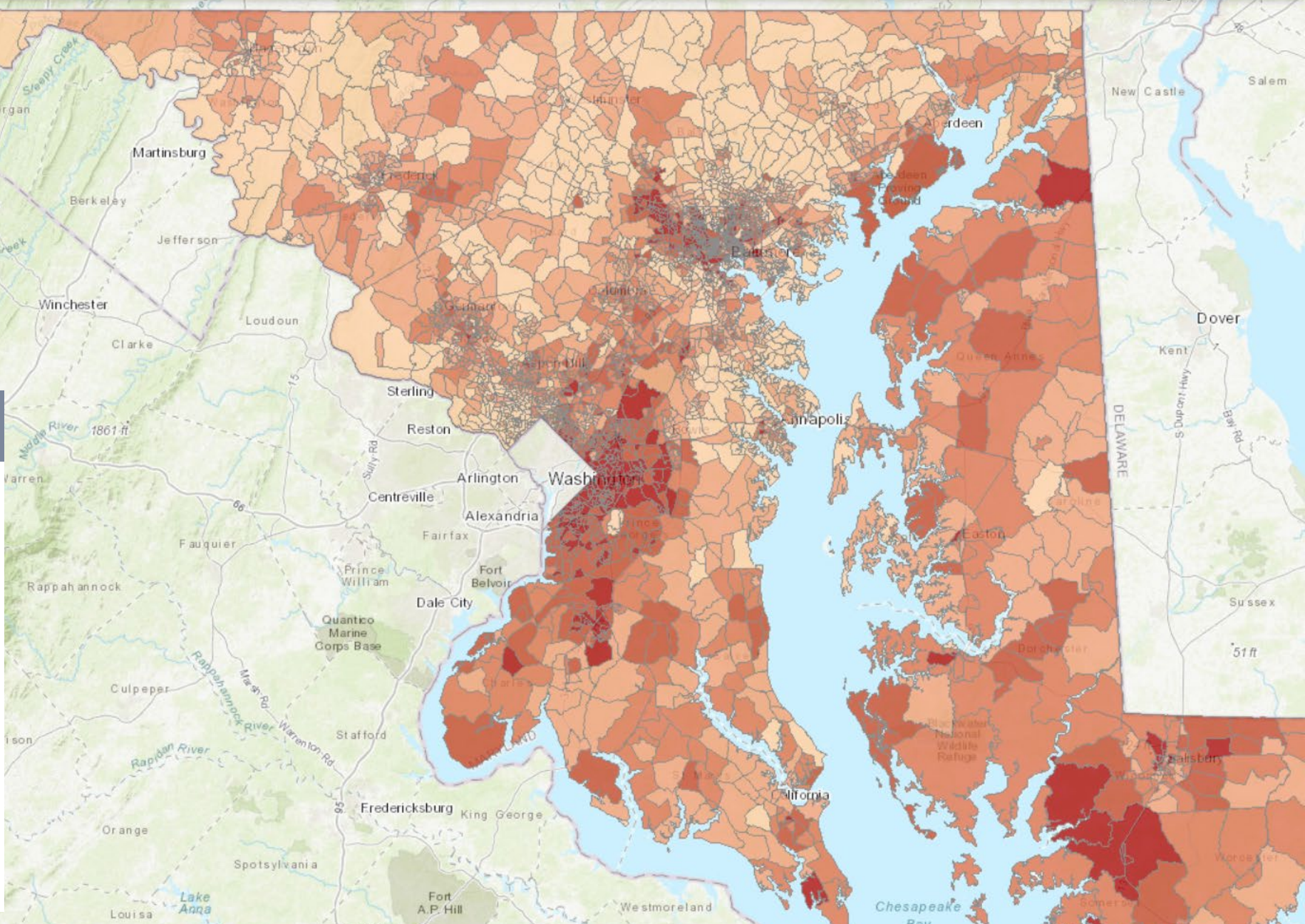
Map navigation controls: Home, Search, Print, Full Screen, Info, Zoom In, Zoom Out, Refresh, Help

### Legend

#### Park Equity Score

Park Equity Total Score (Census Tract)

	0.02 - 0.16 (High Equity)
	0.17 - 0.24
	0.25 - 0.32
	0.33 - 0.39
	0.40 - 0.69 (Low Equity)



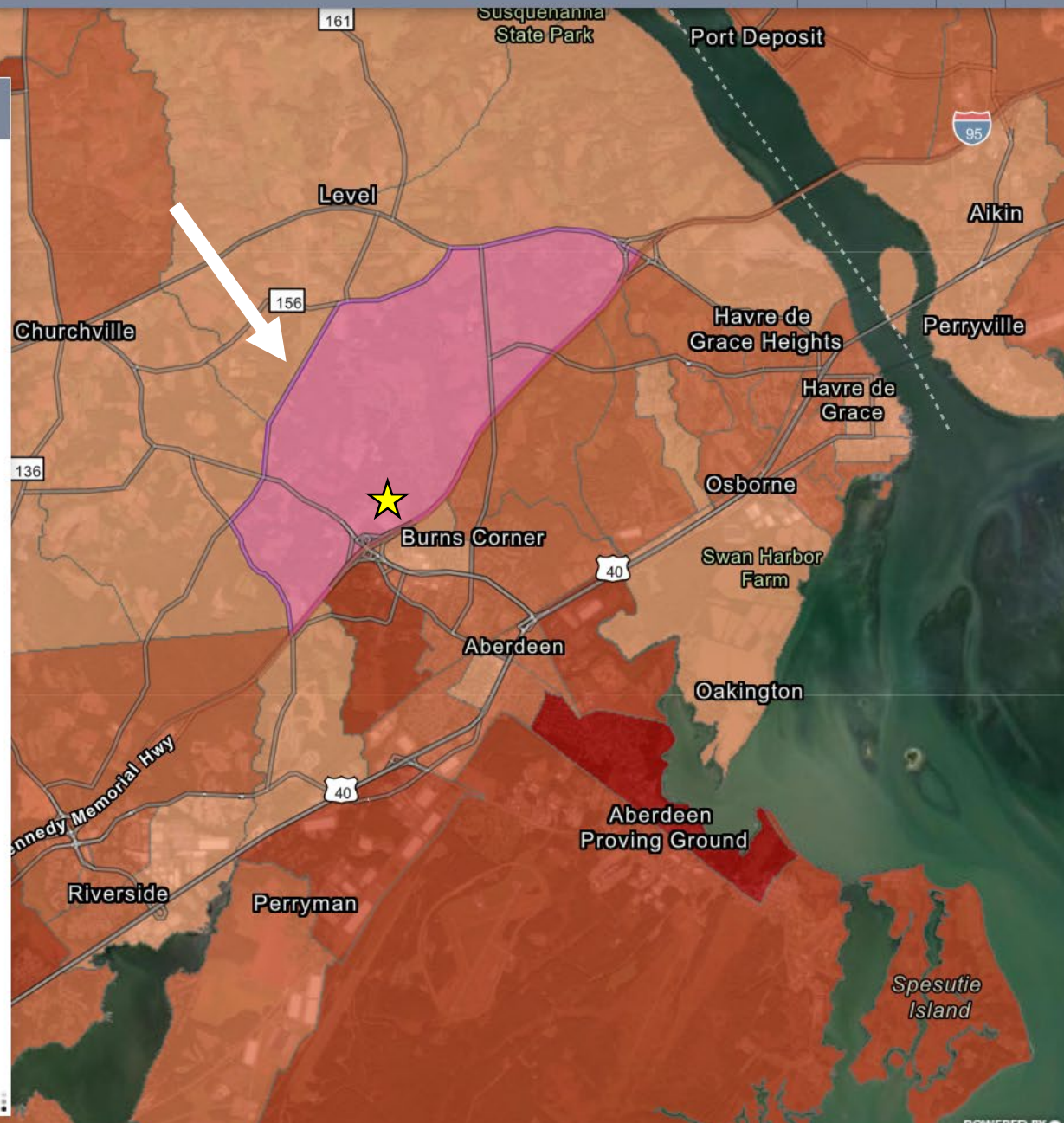
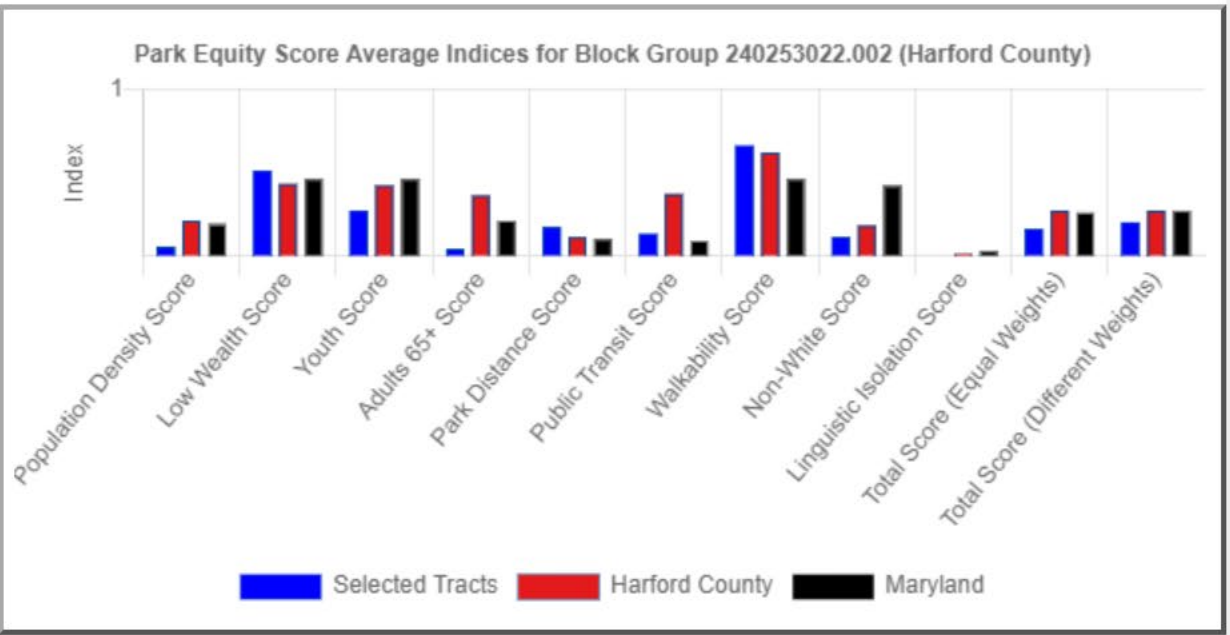


873 Long Dr, Aberdeen, MD, 210 X

## Select

- Select
- Clear
- Get County Averages
- Advanced Stats
- Report

Radius: Area:



2mi

-76.189 39.509 Degrees

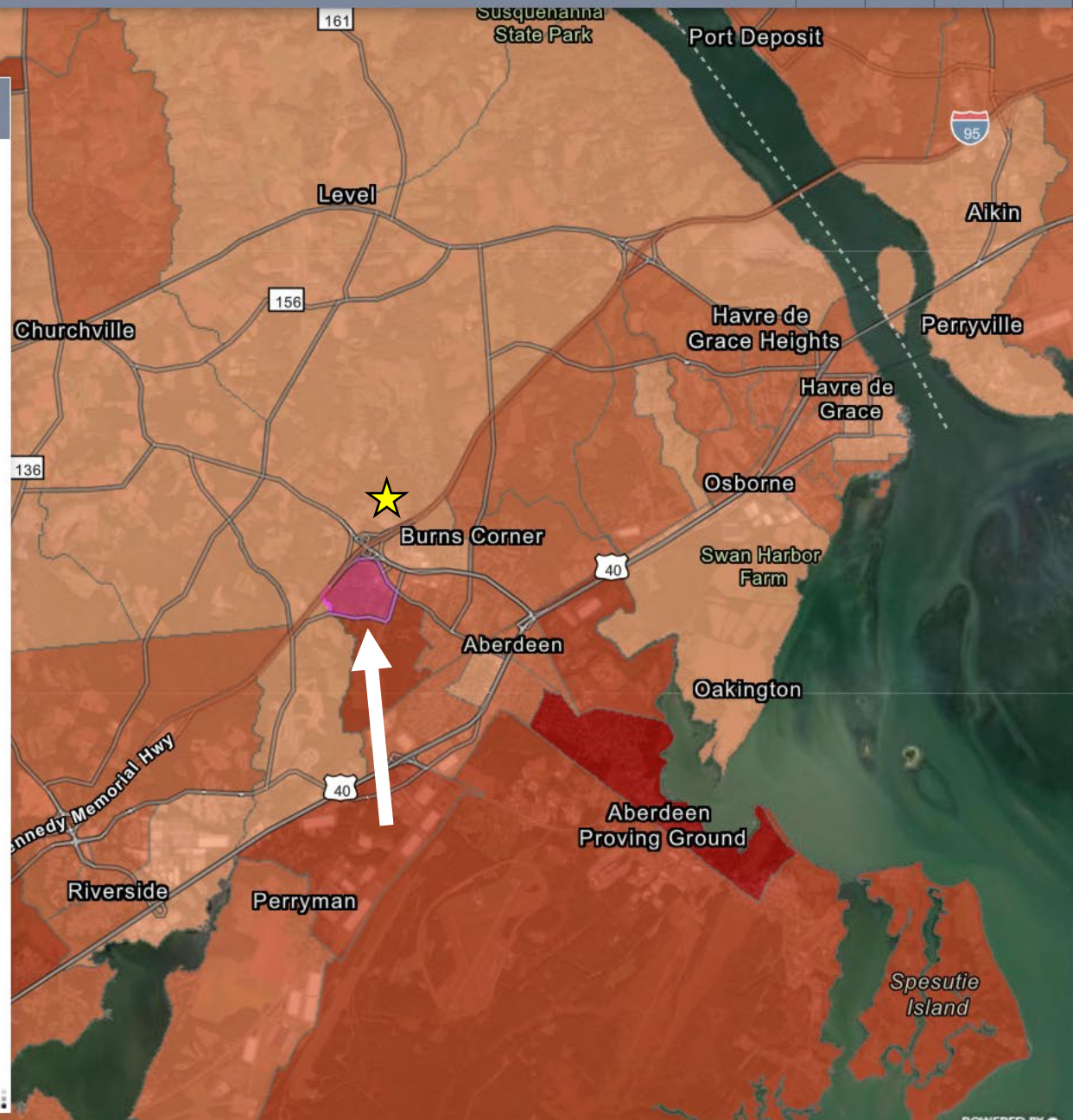
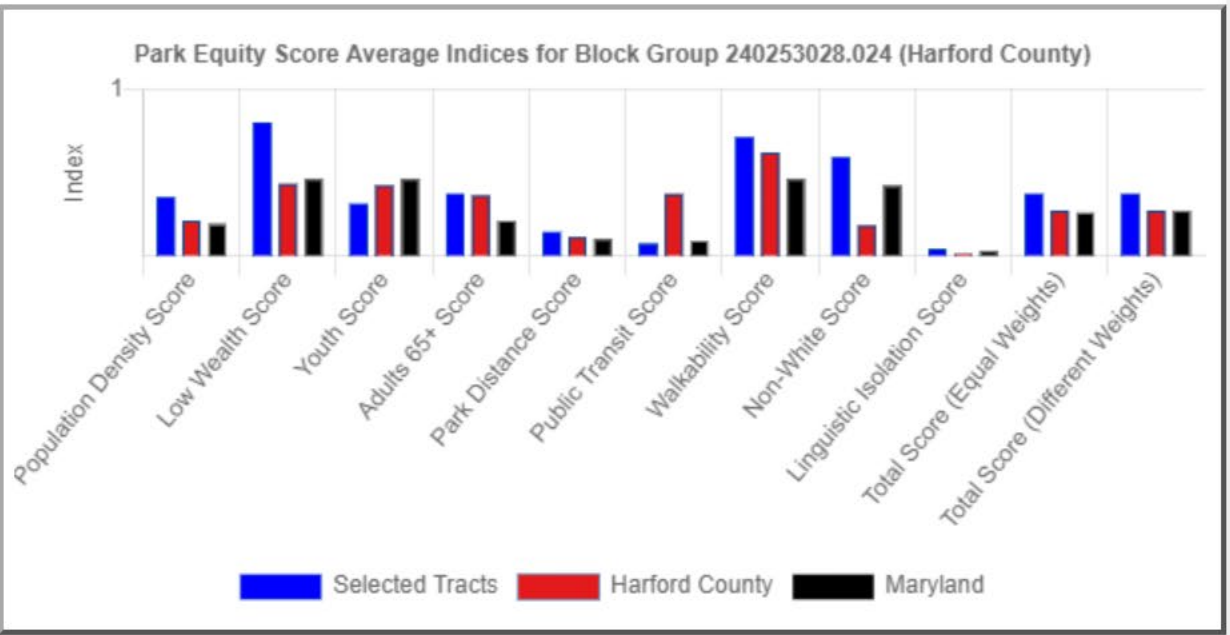


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- Get County Averages
- Advanced Stats
- Report

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2mi -76.167 39.546 Degrees



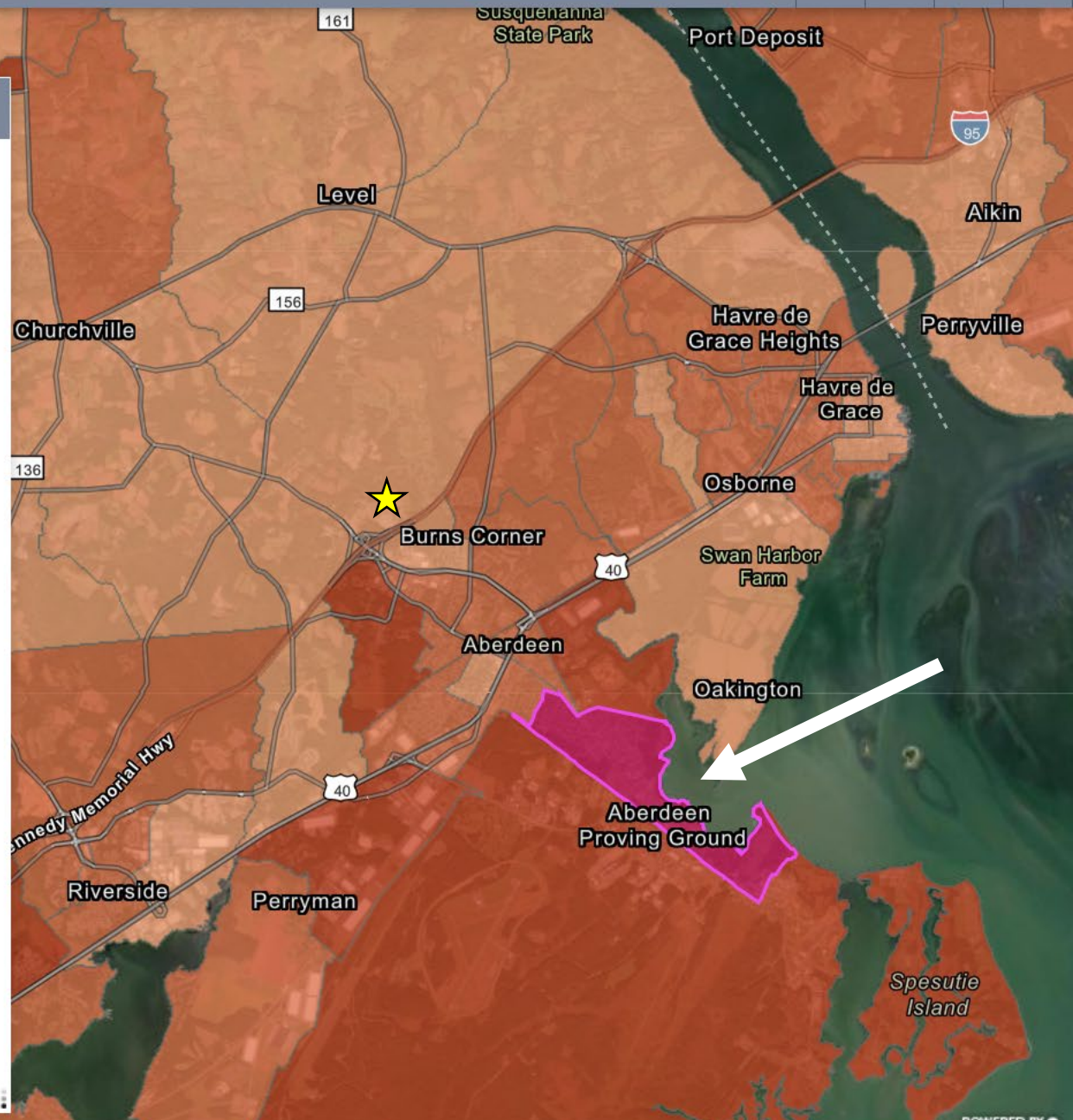
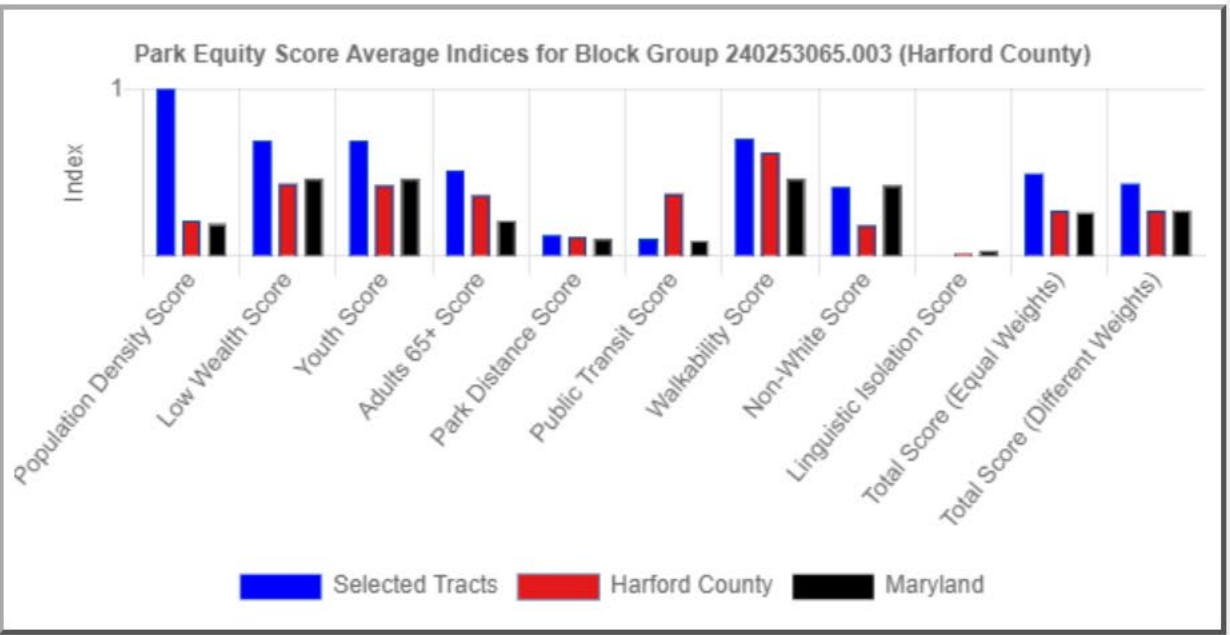


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Radius: Area:



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# Future Additions

- Inclusion of environmental health permitting and policy data:
- EPA-funded restoration projects:
  - Brownfields and Land Revitalization program,
  - Supplemental Environmental Projects program,
- §319(h) Grants program at the Maryland state level
- Integration of MD Environmental Public Health Tracking Data
- Integration with AirNow.gov and PurpleAir for hyperlocal monitoring
- Public participation interface

LINK: <https://dnr.maryland.gov/Pages/ParkEquity.aspx>

The screenshot displays the Maryland Park Equity Mapper web application. The top navigation bar includes links for Maryland.gov, Phone Directory, State Agencies, Online Services, and a Translate button. The main header features the Maryland Department of Natural Resources logo and a search bar. Below the header is a green navigation menu with categories: HOME, BOATING, FISHING, FORESTS, HUNTING, LANDS, PARKS, WATERS, and WILDLIFE.

The central content area is titled "Park Equity" and features a prominent blue button that says "INTERACT WITH THIS MAP". Below this button, a text block states: "The MD park equity tool was developed in partnership with the University of Maryland School of Public Health. In addition to the park equity score, the MD EJ Screen data and more information are available on this tool." Below the text is a small image of a park landscape.

On the right side, there is a "Park Equity" sidebar with a "Layers" section. The layers listed are: Parks, Public Transit, Park Equity Scores, Park Distance Score (DNR) (checked), Population Density Score, Poverty Score, Children Under 18 Score, Park Distance Score (UMD), Public Transit Distance Score, and Walkability Index Score. The "Park Distance Score (DNR)" layer is expanded to show a legend with five color-coded score ranges: 0.00 - 0.10 (lightest green), 0.11 - 0.27, 0.28 - 0.58, 0.59 - 1.30, and 1.31 - 10.00 (darkest green).

The background of the application is a map of Maryland, with various cities and regions labeled, including Chambersburg, Fairmont, Martinsburg, Washington, Baltimore, Frederick, and Richmond. The map shows the distribution of park equity scores across the state.

At the bottom right of the screenshot, there is a copyright notice: "Copyright 2020, CEEJHLAB".

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# Partners

- Many thanks to our collaborators at the National Center for Smart Growth, Maryland Department of Natural Resources, and UMD CGIS.
- *This work funded by grant #306-10B 14-19-2531 CZM 153 from the Maryland Department of Natural Resources and National Oceanic and Atmospheric Administration*

