



GREEN INFRASTRUCTURE: HOW LOW-INCOME COMMUNITIES BENEFIT FROM NATURE

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MASTERS IN URBAN PLANNING AND ENVIRONMENTAL POLICY, 2019**



Closing Remarks, Next Steps, Further Research

- The point - our built environment is *lethal*. We are bombarded by environmental assaults in transportation, agriculture, energy, water and work.
- Easy to earn credentials - LEED, EcoDistricts, TRUE Zero Waste
 - **Undergraduate Students:** Complete graduate entrance exams (GRE, GMAT) before graduating
- Unbuilding (“buy-outs”) as an approach to conservation
 - Less highway lanes, no free parking, collaborative modular citizen solutions



rch - transit opportunities (Tesla Hyperloop, etc.)





Little Access to
Green Spaces



Proximity to
Environment Hazards



Infrastructure &
Property Value



Chronic Health
Issues & Disparity



Predatory Business
Practices



Poor Quality
Services



What is **Green** Infrastructure?



**Cost effective,
low impact &
natural design elements
that restore habitats,
rehabilitate people and
conserves natural
resources.**

Create a communal sense of ownership, prosperity and value

Integrated Examples





Source: EcoWatch, Solar Flower in
Subsidized Neighborhood, Chicago



Source: Vox.com, Tesla Solar Panels; Modular Micro Grid in Puerto Rico Post Hurricane Maria, October 2017



Source: GoodMoney, Safi Schwartz, Turbine Generates Electricity in Water Pipes, Portland, Oregon



Source: BDC Network,
*Santalaia, a multifamily residential building ,
Bogota, Colombia.*

SEIA, HBCU Coalition Join in National Effort to Increase Diversity of Solar Industry's Workforce

Wednesday, Sep 19 2018

[Press Release](#)

WASHINGTON, D.C. – With a goal of making the solar workforce and solar communities more diverse, the Solar Energy Industries Association (SEIA) and the Historically Black Colleges and Universities Community Development Action Coalition (HBCU-CDAC) have begun a new effort to increase recruitment of African-American students into the industry.

TRANSPORTATION

PARK(ing) Day Brings Out Houstonians' Creativity as They Imagine New Uses for Urban Spaces

The Houston event was part of a worldwide effort that illustrates the amount of space used for vehicles.

[GAIL DELAUGHTER](#) | SEPTEMBER 21, 2018, 3:46 PM



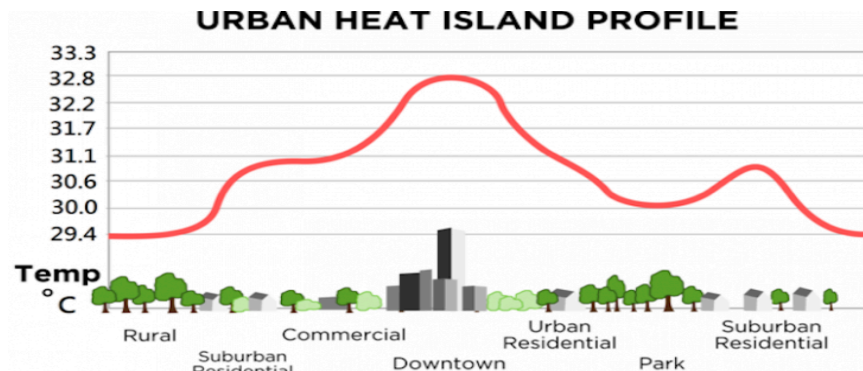
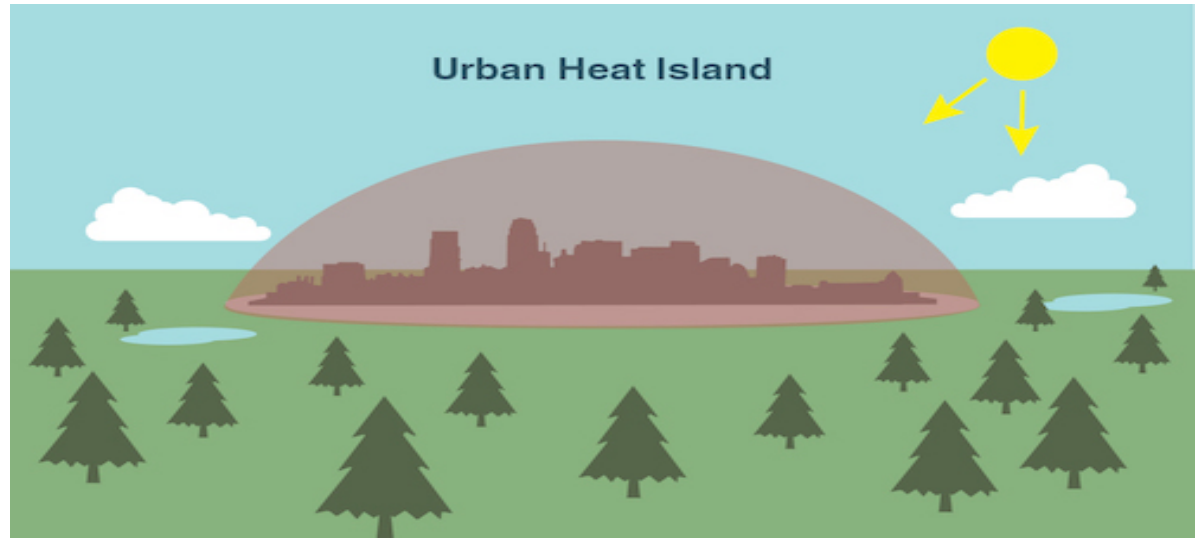




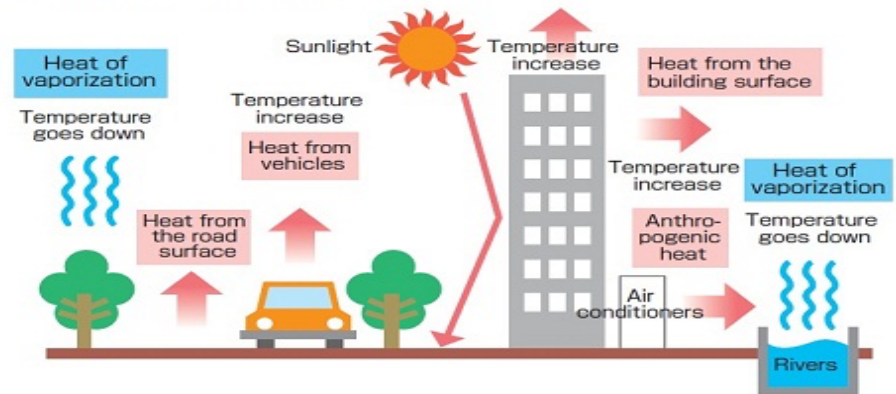


Urban Heat Island and Heat Waves

Urban Heat Island Effect



● How the Heat Island Phenomenon occurs



Taming the City

- ❖ Cities have concentrated and integrated economic activities, highly complex systems of infrastructure and multilayered governance, exponentially magnifying inequity, displacement, isolation, development, pollution, poverty, utility needs, etc.
- ❖ Air pollution = poor health, loss of wages and diminished quality of life.





Weather

Tuesday afternoon feels like temperature

Extreme cold

Frigid

Below Freezing

Freezing

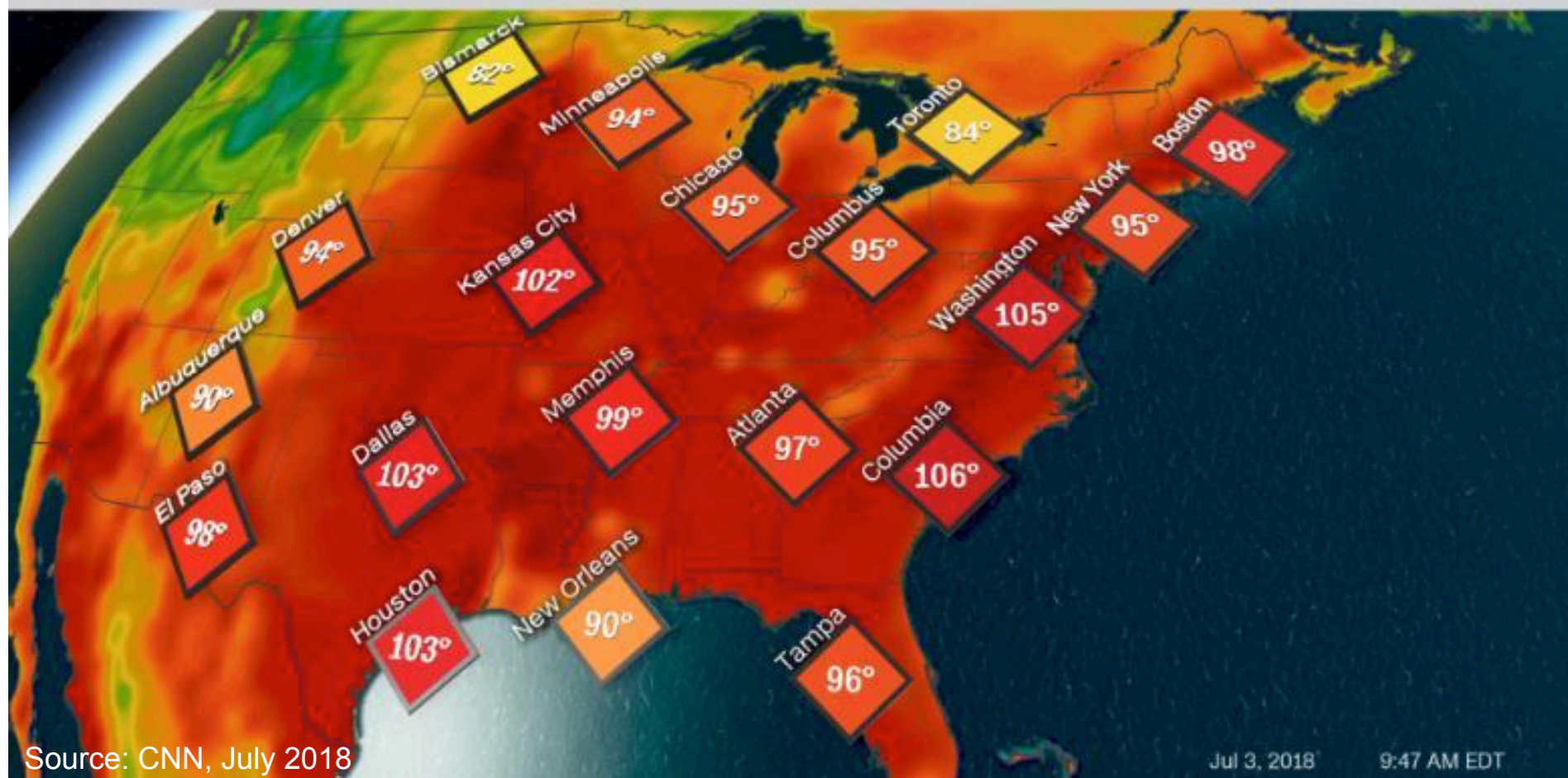
Cold

Mild

Warm

Hot

Extreme Heat



Source: CNN, July 2018

Jul 3, 2018

9:47 AM EDT

Social Issues

‘I don’t want to die’: As the country bakes, studies show poor city neighborhoods are often much hotter than wealthy ones

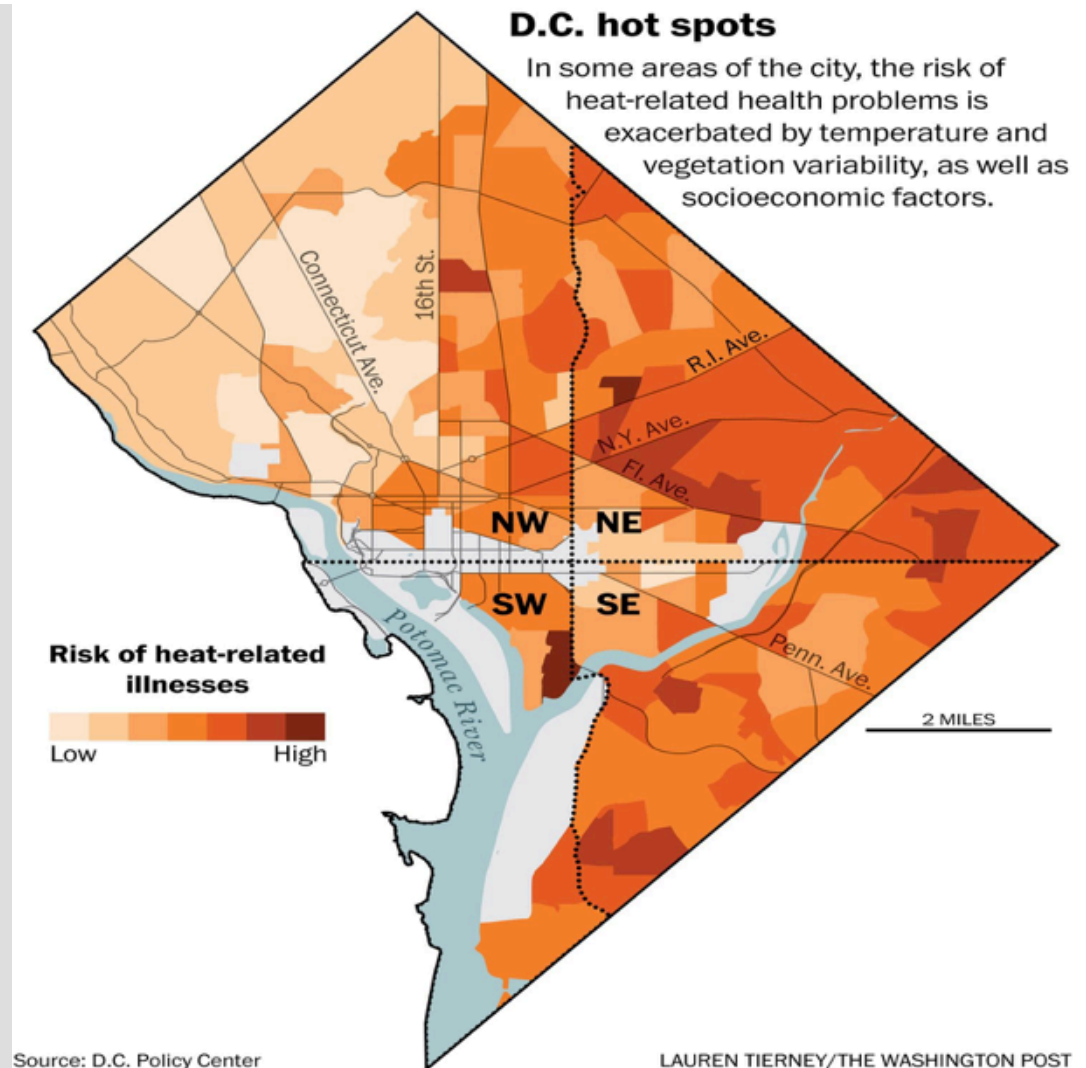
Washington Highlands is one of the neighborhoods deemed most vulnerable to “heat island” effects. Resident Cheryl Johnson is on dialysis and uses a walker, and spending time outside on very hot days is risky for her. (Marvin Joseph/The Washington Post)

By **Terrence McCoy**

September 2

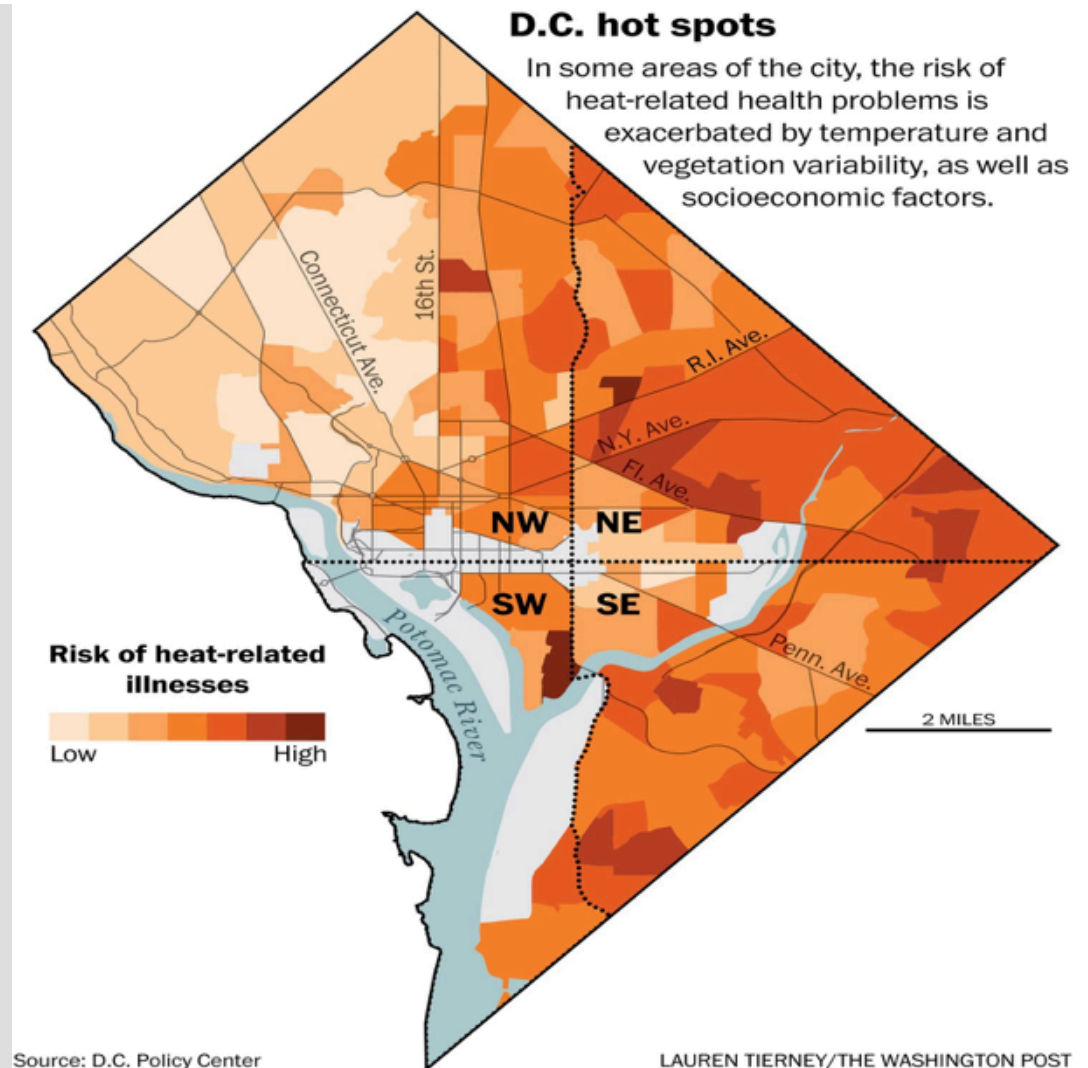
“I Don’t Want to Die”

- ❖ Location dictates intensity AND LETHALITY of heat.
- ❖ Wealthy neighborhoods have more green spaces (thermal mass) than low-wealth.
- ❖ Industrialized “heat islands:” urban places w/o vegetation *and* blocks of impervious surfaces, **absorb heat**.
- ❖ Heat vulnerability index --->



“I Don’t Want to Die”

- ❖ Nearly 40% of Washington residents in low-income communities live in areas with fewer trees and more empty space.
- ❖ Comparatively, 80% of residents in upper-income areas lived in neighborhoods with abundant tree canopy.
- ❖ Renters have less ability to landscape or plant trees, are more at risk of heat-related illnesses.



Setting Expectations Through Citizen Engagement

- ❖ The more severe the problem, the more “grassroots” the solution.
- ❖ Communities with rifted government relationships will not adopt solutions (intergenerational ownership) unless appropriately represented in the decision-making process.
- ❖ Sense of Place, Safety, Inclusion, Speaking



Environmental consortium addressing inequality convenes in Houston on Saturday

Pleasantville gaining expertise of Texas Southern and black college collaborative

By **Cindy George** Updated 6:41 pm CST, Tuesday, January 16, 2018



Cycling & Pedestrian Infrastructure

before



28th Ave & Hoyt Street

Source: Portland Bureau of Transportation, 20s Bike Project, 2016-2018

after





28th Ave & Powell Blvd

Source: Portland Bureau of Transportation, 20s Bike Project, 2016-2018

before



after



30th Ave & E Burnside Street

Source: Portland Bureau of Transportation, 20s Bike Project, 2016-2018

Copenhagen-style cycle paths: protected lanes, narrower roads (traffic calming), pedestrian offsets... plan better to avoid the need for retrofits!



Source: The Press, New Zealand, 2018

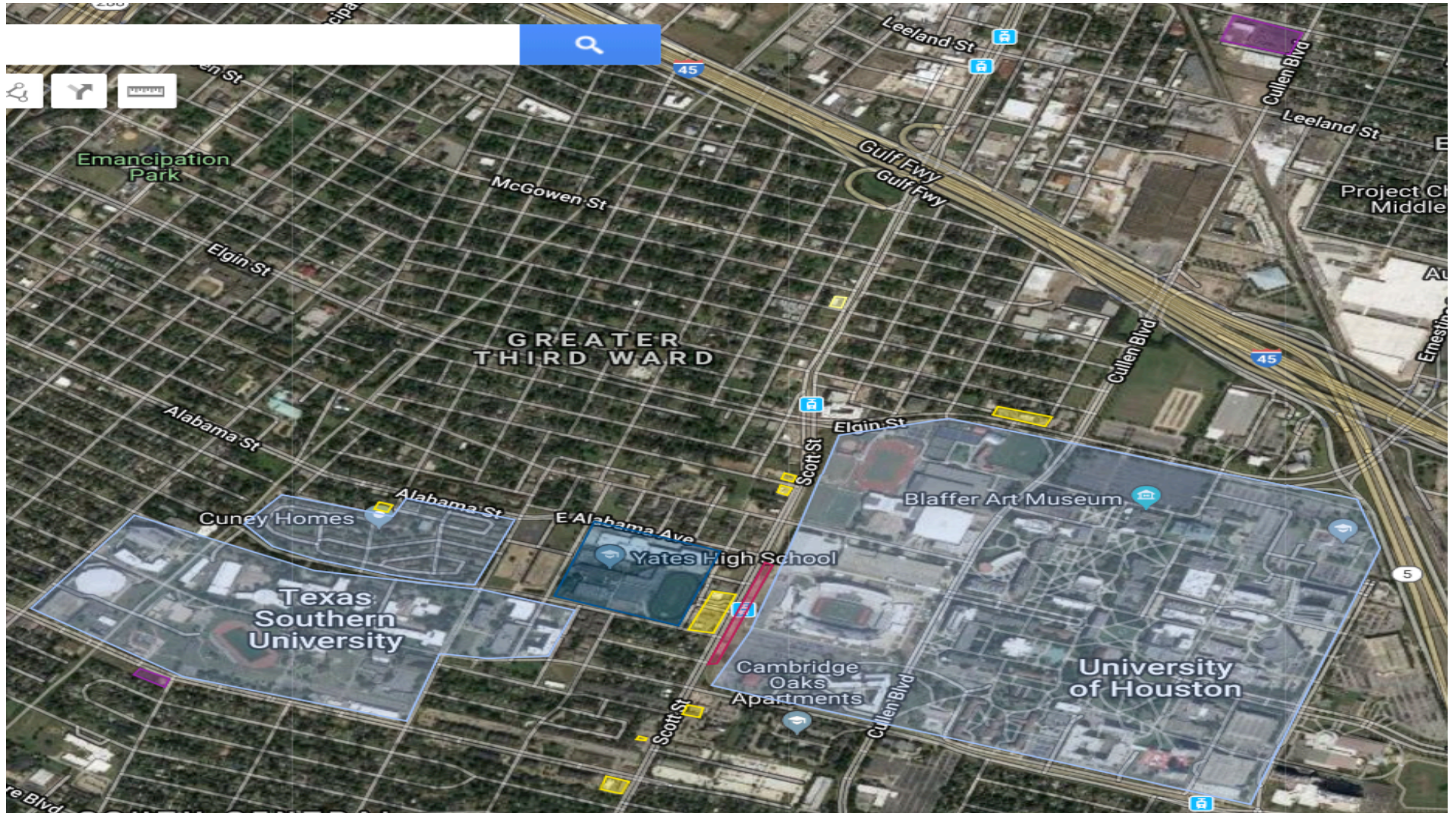


Source: Houston Chronicle, Google Maps, Dowling Street 3rd Ward, Houston, TX, January 2018



Source: Google Maps,
Downtown Lafayette, Louisiana

Food Oasis / Food Desert

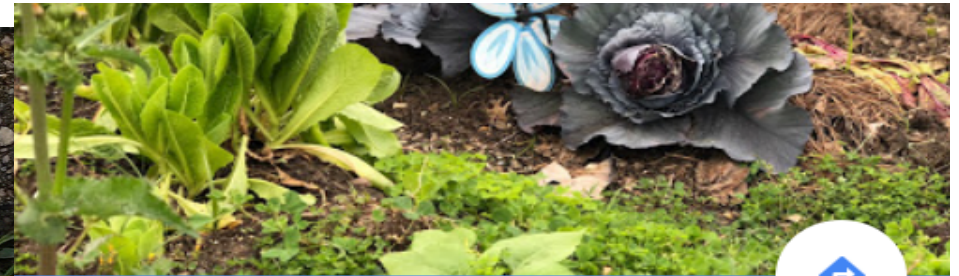




BLODGETT URBAN GARDENS

Grown in the Community for the Community

www.blodgetturbangardens.org



Blodgett Urban Gardens

5.0 ★★★★★ · 2 reviews

Farm



Directions



Alma [redacted]

1 review



★★★★★ 2 months ago

Community friendly, healthy and nutritious environment for promoting our good health.



Briana [redacted]

Local Guide · 106 reviews · 856 photos



★★★★★ 5 months ago

I love this urban community garden!









Dunbar High School, Washington, D.C.

Paul Lawrence Dunbar High School in D.C



- ❖ Originally built in 1870, oldest African-American serving HS in the country
 - ❖ Several iterations, structural remediation not possible
- ❖ Rebuilt in 2013 as a LEED Platinum Building, highest rating possible
- ❖ Exceeded local construction standards; \$57M+ in contracts awarded to certified local, small and disadvantaged businesses.
- ❖ Built by Smoot/Gilbane, a joint venture, and EEK Architects and Engineers (now Perkins Eastman).
- ❖ Features include geothermal wells under the football field, photovoltaic panels (1,750) mounted on the new roof, two 20,000-gallon cisterns for storm water reclamation, low-VOC materials, plus recycling detritus from the 1978 building in off-site projects.



Source: Ghosts of D.C..org, Dunbar High School (1977), 2013



Source: Gilbane Construction, Dunbar High School, Washington, D.C., 2013

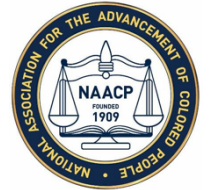


Source: Gilbane Construction, Dunbar High School, Washington, D.C., 2013



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Summer 2018 NAACP Fellowship



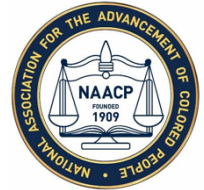
Mission and Scope of Project Research

Ensure that we establish a universal commitment to advance sustainable buildings for all - commercial, residential, public facilities, etc.

We will emerge from this working meeting with mutual accountability to a blueprint with action steps to shift policy, practices and programming to **establish equity as the foundational criteria for green infrastructure.**



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Mission and Scope of Project Research

Completed:

- ❖ Analysis of Existing Equity Measures in Sustainable Building Standards
- ❖ Equity Recommendations to Improve Green Building Rating Standards
- ❖ **Review of Green Projects** That Have Integrated Equity Measures
- ❖ Detailed review of policy measures (legislation, regulations, building codes, etc. at local, state, and national levels)...

Preliminary:

- ❖ Detailed review of **corporate social responsibility measures** that would support integration of equity in the green buildings field of practice.
- ❖ Detailed review of potential **partner organizations/companies...**
- ❖ List of organizations that do advocacy/policy analysis in the sustainable buildings sector.

Join us!



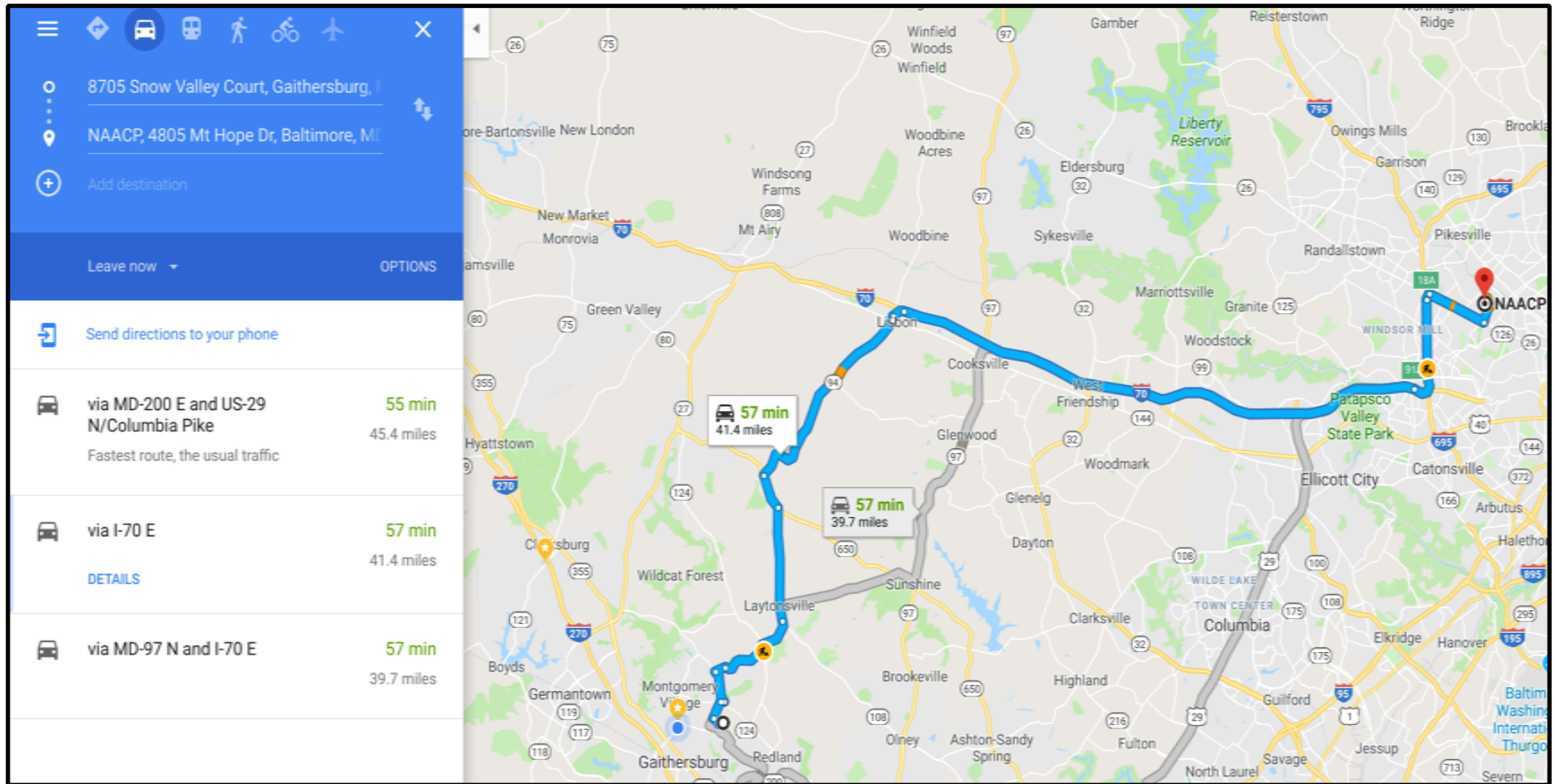
**CENTERING EQUITY IN
THE SUSTAINABLE
BUILDINGS SECTOR
2-DAY SUMMIT
AUGUST 7&8, 2018**

9AM - 5PM Daily
Phipps Conservatory
One Schenley Park, Pittsburgh, PA 15213



Transit: 4 connections, 3 hours total travel ONE WAY; 6 hours round trip

Transit: 4 connections, 3 hours total travel ONE WAY; 6 hours round trip



Driving: 1 hour to drive ~45 miles; 2 hours round trip to drive ~90 miles; easy route that cuts through two rural areas - Olney and Laytonsville or I can take Route 200 Toll Road to arrive a few minutes earlier.



Mini Mart & Carry Out

Baltimore, Maryland

Beauty Supply, Fried Chicken, Lake Trout

“We accept Food Stamps”

No Shoot Zone, #50



NAACP National Headquarters ARCHITECTURAL DESIGN COMPETITION



*Will Your Architecture Team Be the One to Bring Our Vision of An
Equity Based, Regenerative Workspace and Community Hub to Life?*

THE VISION

In actualizing our commitment to ground our operations in the principles and practices of our environmental and climate justice platform, the NAACP will establish its headquarters, currently based in Baltimore, MD, as an exemplar for an Equitable Living Building Project. Standards we will follow include The Living Building Challenge, the LEED Platinum Certification, the WELL Building Standard, and more! Through this effort, we will develop a replicable model of ensuring the centering of equity in all aspects of sustainable buildings, including access; affordability; cultural resonance; as well as inclusive decision-making, financing, service provision, procurement, contracting, employment, communications, monitoring and evaluation, and so much more.

Our aim as the nation's oldest and largest civil rights organization is to be a beacon of inspiration and transformation in centering equity in the sustainable building sector. In doing so, we can catalyze the building of a bigger, broader tent for the sustainable building movement, towards the betterment of the building users, the communities, the economy, and the planet.

From our survey of our building occupants/users, combined with focus groups we've conducted, some of the values/attributes we want to embody in the NAACP Living Headquarters are as follows:

- I. Healthy and Health Promoting
- II. Safe
- III. Beautiful
- IV. Welcoming
- V. Accommodating for All
- VI. In Harmony with Nature/Regenerative
- VII. Fostering Happiness
- VIII. Supporting Productivity
- IX. Community Centered
- X. Culturally and Historically Rooted

Components users/occupants are seeking in the NAACP Living Headquarters Project include the following:

1. Community Room
2. Staff Break Room and Lunch Room and Full, Operational Kitchen
3. Exercise Room as well as Walking/jogging Path and Bike Rack
4. Electric Vehicle Charging Station
5. Dedicated Car Pool Parking Spaces
6. Lactation/Breastfeeding Room
7. Natural Sunlight for All
8. Gendered and Gender-Neutral Bathrooms
9. Thriving Plant Life Indoors and Outdoors
10. Food Garden—Done in Partnership with Local Food Projects
11. Solar—Rooftop/Canopy
12. Rainwater Capture/Water Reuse
13. Meditation, Prayer, and Reflection Space
14. AND MORE.....

THE PROCESS

- I. **Registration**
 - i. All groups intending to submit must register via [this link](#).
- II. **Submission Guidelines ****
 - i. Submissions should include: plans, sections, elevations, 3D views, design concepts, and construction budget estimate. A 500-700 word essay should be included to describe the most important concepts of the design project.
 - ii. Electronic Submissions should be uploaded via Dropbox and the link should be sent to jpatterson@naacpnet.org. File sizes should not exceed 15mb.
 - iii. Thirty-Minute (including Q&A) Design Presentations will be given to the panel of judges via webinar
- III. **Judging**
 - i. Judges Panel will consist of NAACP board members, staff, and state and local leadership, as well as community members and advisors.
- IV. **Schedule**
 - i. 9/6 **Design Competition Launched**
 - ii. 9/14, 10/1, 11/1 Informational Webinars for Registered Contenders
 - iii. 11/9 **Deadline for Registration of Intent to Compete via [this link](#)**
 - iv. 9/6-11/30 Information Gathering (surveys, focus groups, charrettes)
 - v. 11/30 **Electronic Submissions DUE**
 - vi. 12/3-12/7 Committee Will Review Electronic Packages and Determine Semi-Finalists
 - vii. 12/10 **Semi-Finalists Notified and Invited to Present Via Webinar**
 - viii. 12/10-12/17 Webinar Presentation Preparation by Semi-Finalists
 - ix. 12/18-12/21 **Design Presentations via Webinar will be presented**
 - x. 12/23 Finalists will be notified—Champion, 2nd Place, 3rd Place
 - xi. February 2019 **Awards Ceremony: Presentations by the Champion, 2nd, and 3rd Place awardees**
- V. **Presentation**
 - i. All three finalists will present their designs at the Award Reception and the awardees will be declared.

****No minimum education requirements. With our commitment to advancing equity in architecture, individuals/groups who are in underrepresented categories are strongly encouraged to apply. ****

THE PRIZES

- ❖ Grand Prize \$15,000*
- ❖ Second Place \$10,000*
- ❖ Third Place \$ 5,000*

*Plus travel costs for one presenter to represent each group at the awards reception.

QUESTIONS? Please email Jacqueline Patterson jpatterson@naacpnet.org

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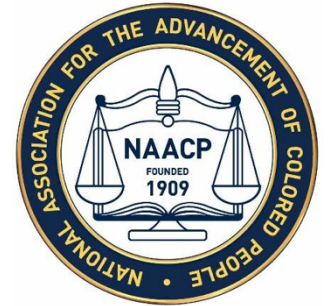


References

- ❖ Dr. Robert Bullard, *Dumping in Dixie: Race, Class and Environmental Quality*, 1990.
- ❖ Dr. Glenn Johnson and Dr. Shirley Rainey, Environmental Equity and Natural Disasters
 - ❖ In G. S. Johnson, S. A. Rainey, R. D. Gragg (Eds.), *Environmental Justice Reader II: A Survey and Review of Critical Issues in Disenfranchised and Vulnerable Communities in the Twenty-First Century* (pp. 159-166). Ronkonkoma: Linus Publications.
- ❖ Arnstein, Sherry R. (1969) 'A Ladder Of Citizen Participation', *Journal of the American Planning Association*, 35: 4, 216 — 224

Acknowledgements

- ❖ Dr. Robert Bullard, Dr. Glenn Johnson, Dr. Denae King, Dr. Earthea Nance, Dr. Beverly Wright and Texas Southern University for cultivating environmental advocates;
- ❖ Jacqueline Patterson, Jane English and the Environmental and Climate team at the NAACP for a wonderful summer fellowship in Baltimore, MD;
- ❖ Dr. Dorceta Taylor, Molly Lutton and the 2018 Environmental Fellows Cohort at University of Michigan School for Environment and Sustainability;
- ❖ Funding provided by W.K. Kellogg Foundation and The JPB Foundation.



SCHOOL FOR ENVIRONMENT AND SUSTAINABILITY
Environmental Fellows Program
UNIVERSITY OF MICHIGAN

