



GREEN INFRASTRUCTURE: HOW LOW-INCOME COMMUNITIES BENEFIT FROM NATURE

KAREEM HESHMAT
TEXAS SOUTHERN UNIVERSITY
MICKEY LELAND-BARBARA JORDAN SCHOOL OF PUBLIC AFFAIRS
MASTERS IN URBAN PLANNING AND ENVIRONMENTAL POLICY, 2019

Introduction

- ▶ Issues Endemic to Low-Wealth Communities
- ▶ What is Environmental Justice?
- ▶ How do Cities Accelerate Climate Change?
 - ▶ Urban Planning and Built
- ▶ What is Green Infrastructure?
 - ▶ Health, Economic, Social and Environmental Equity
- ▶ Conclusion



Issues Endemic in Low-Wealth Communities



Little Access to
Green Spaces



Proximity to
Environment Hazards



Infrastructure &
Property Value



Chronic Health
Issues & Disparity



Predatory Business
Practices



³ Poor Quality
Services

Environmental Protection Agency Definition



- ▶ **Environmental justice (EJ)** is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.
- ▶ **Fair treatment** means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies.





Environmental Justice Framework



- ▶ Who gets what, why and how much?
- ▶ Focuses on universal human right to be protected from environmental degradation
- ▶ Prevention as the preferred strategy
- ▶ Burden of proof is on polluters/dischargers
- ▶ Focuses on the effect of actions, rather than “intent”



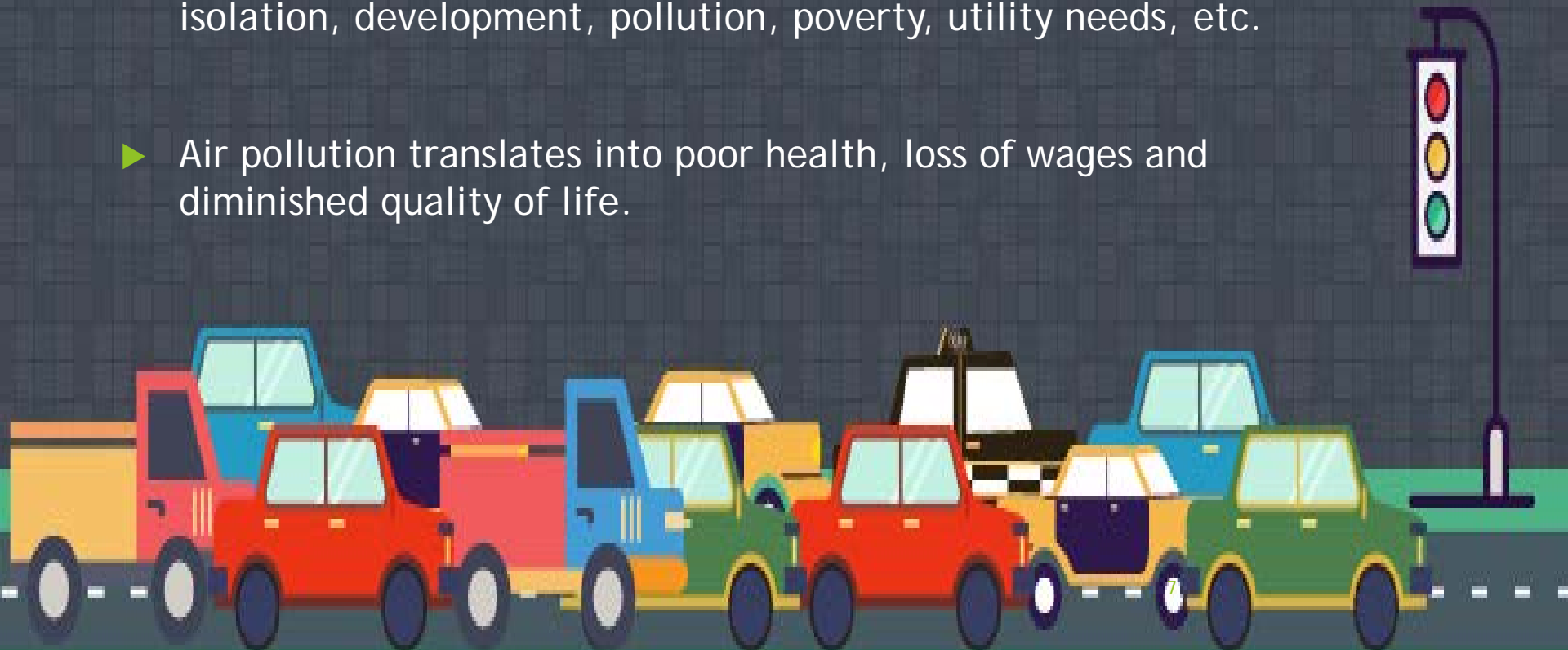
Eco-Racism

- ▶ NIMBY-ism (not in my backyard!) insulated white communities from localized environmental impacts of waste facilities while providing the benefits of waste disposal...
 - ▶ perpetuating privilege at the expense of people of color.
- ▶ Communities that mobilize political influence win.
- ▶ The issues raised by environmental justice advocates challenges the very core of privilege in our society.
 - ▶ Some communities are spared environmental assaults because of industrial siting practices of LULUs in communities with little or no political power and limited resources.
- ▶ Dr. Robert Bullard, *Dumping in Dixie: Race, Class and Environmental Quality*, 1990.

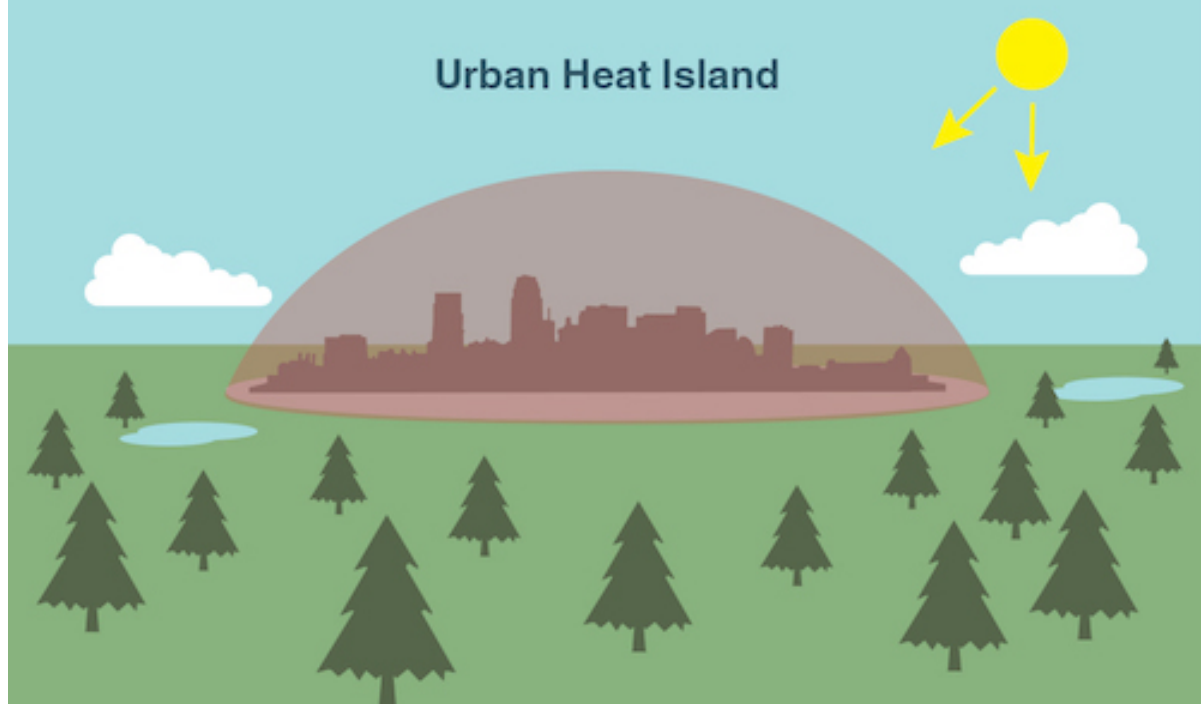


Taming the City Beast

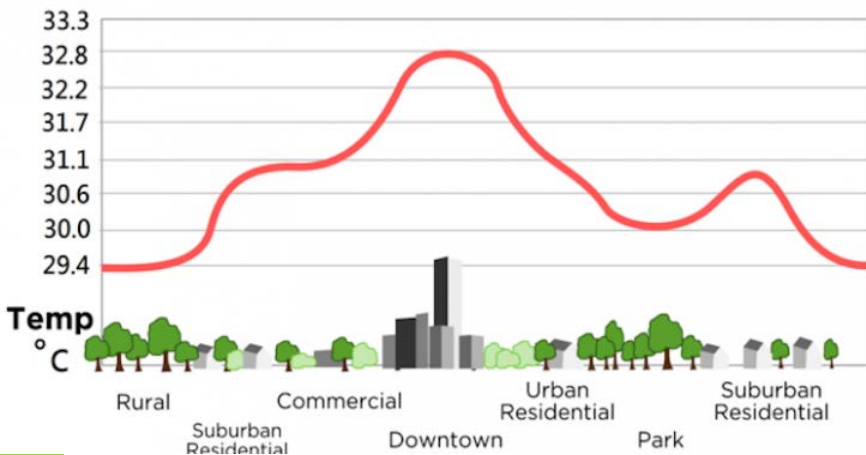
- ▶ Cities have concentrated and integrated economic activities, highly complex systems of infrastructure and multilayered governance, exponentially magnifying inequity, displacement, isolation, development, pollution, poverty, utility needs, etc.
- ▶ Air pollution translates into poor health, loss of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



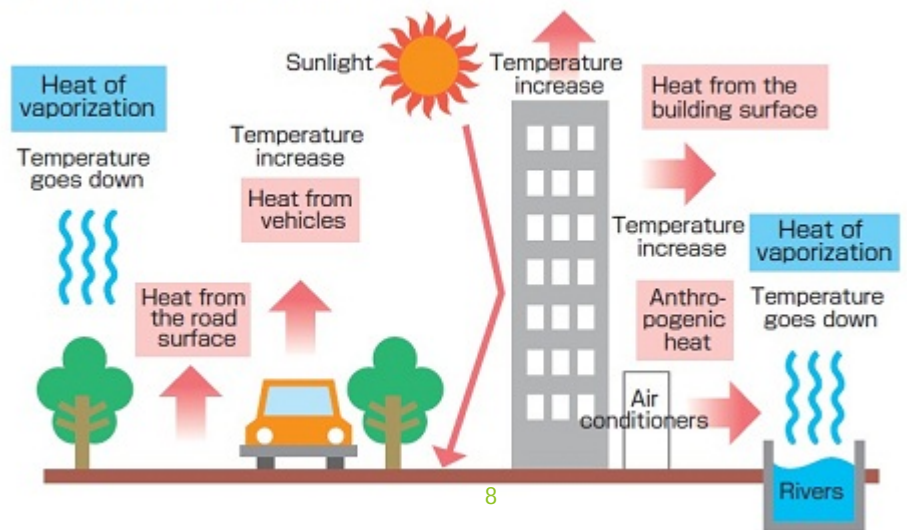
Urban Heat Island Effect



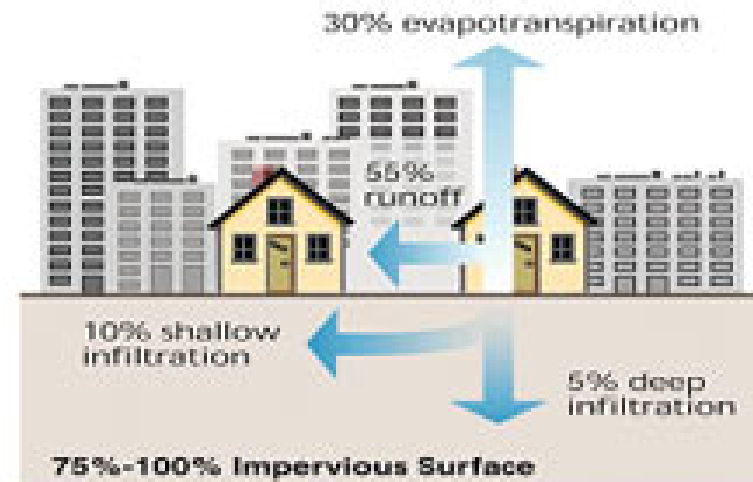
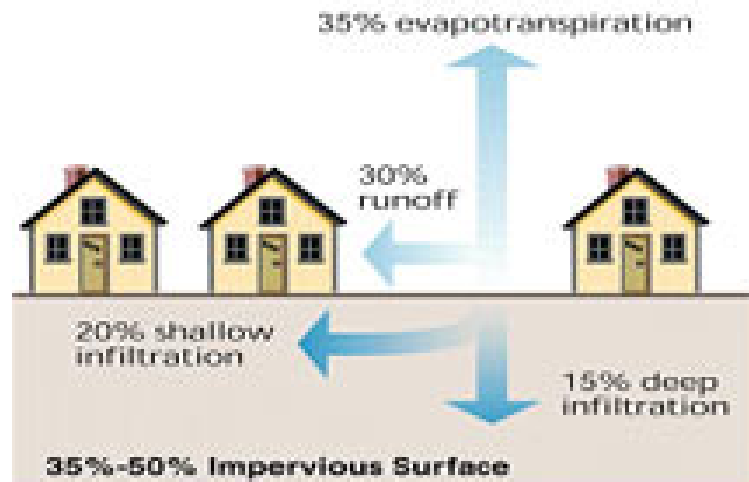
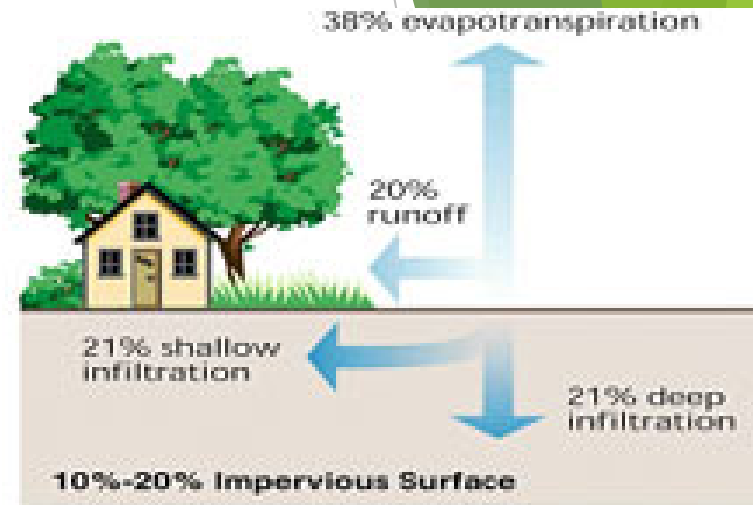
URBAN HEAT ISLAND PROFILE



● How the Heat Island Phenomenon occurs



Water Infiltration



Development increases the volume and rate of runoff from a site, and reduces groundwater recharge and evapotranspiration.



What is **Green** Infrastructure?



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

Examples





Solar Panels in Puerto Rico

Viabile Alternative



Protected Intersections – People First!





Planning Matters: Auto vs. Pedestrian



Dowling Street 3rd
Ward, Houston, TX

Lafayette, Louisiana



Portland, OR

- ▶ Walkable city
- ▶ Very pedestrian friendly
- ▶ Cycling
- ▶ Aesthetic





Benefits

► Environmental

- Cleaner Air
- Pure Water – sediment acts as a natural filter
- Less utility use + cost
- 1oz prevention vs. 1lb cure

► Economic

- Increased Home Value
- Business Revenue
- Foot Traffic

► Equity

- Low-wealth communities are proven to have less access
- Excluded from benefits
- Higher mortality rates
- Noise & Env. Pollution
- Exposure to hazards

► Social Engagement

- Promotes ownership
- Traffic Calming



Leadership in Energy and Environmental Design (LEED)



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LEED Credit Categories



Dunbar High School, Washington, D.C.



Dunbar High School, Washington, D.C.



Dunbar High School, Washington, D.C.





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Conclusion

- ▶ Save time and money - go green!
- ▶ Incorporate sustainable designs, think long term! 50+yrs
- ▶ 0% energy from renewable sources is still 0%..do something!
- ▶ EJ will not erode civil rights or economic development in urban core neighborhoods
- ▶ People of color form a potent voting bloc.
- ▶ The mountain does not chase the wind
 - ▶ *Juliana vs. United States*





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).
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- ▶ Arnstein, Sherry R. (1969) 'A Ladder Of Citizen Participation', *Journal of the American Planning Association*, 35: 4, 216 — 224

Acknowledgements

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 - ▶ Texas Southern University, Houston, TX
 - ▶ K.heshmat2937@student.tsu.edu



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BARBARA JORDAN-MICKEY LELAND
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