



# Green Infrastructure and Environmental Justice in the Duwamish Valley

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Urban Forestry Commission  
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# Today's presentation:

- ❑ Intro to Environmental Justice (EJ)
- ❑ Proving the DV to be an EJ community (CHIA)
- ❑ Green infrastructure (GI) as a community decision
- ❑ Duwamish Tree Canopy Enhancement Project
- ❑ Green Walls in the Duwamish Valley
- ❑ Intersection of GI and EJ
- ❑ Considerations when working in EJ communities



# EPA's Definition of Environmental Justice

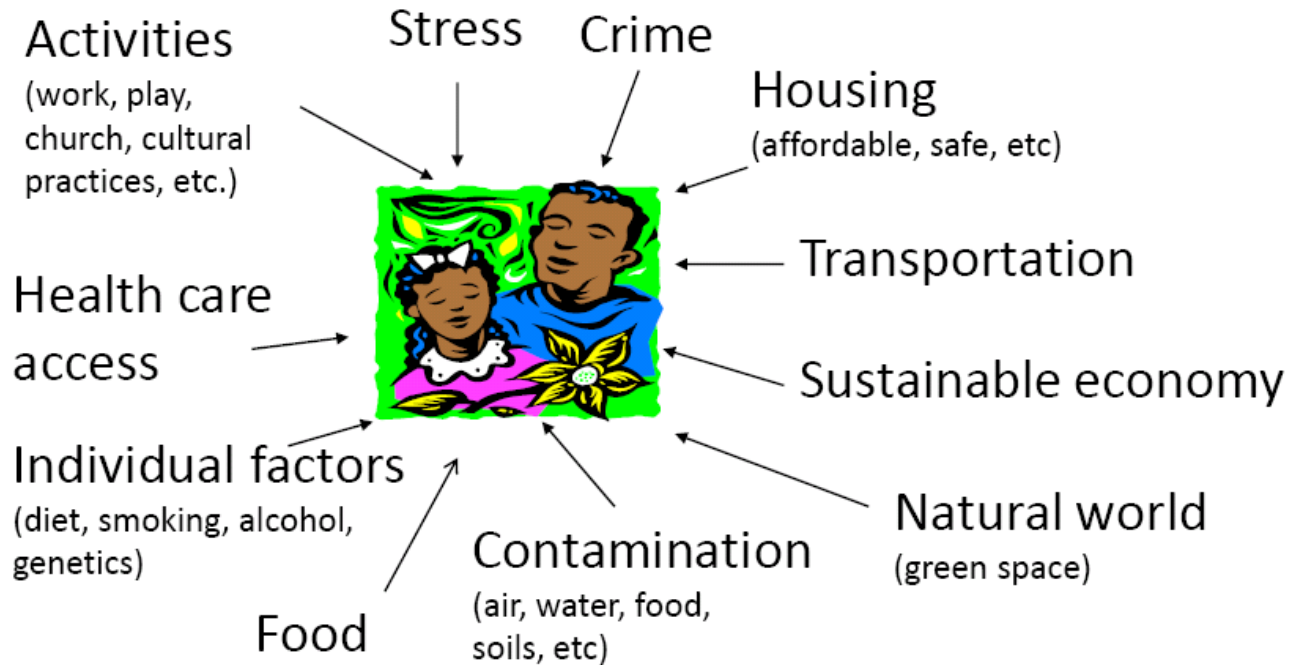
Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

It will be achieved when everyone enjoys:

- ✓ the same degree of protection from environmental and health hazards, and
- ✓ equal access to the decision-making process to have a healthy environment in which to live, learn, and work.



# ENVIRONMENTAL JUSTICE



*"The environment is everything: where we live, work, play, go to school, as well as the physical and natural world. And so we can't separate the physical environment from the cultural environment."*

*(Robert Bullard, 1999)*





# Cumulative Effects - Imagine



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OR



+



+



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+

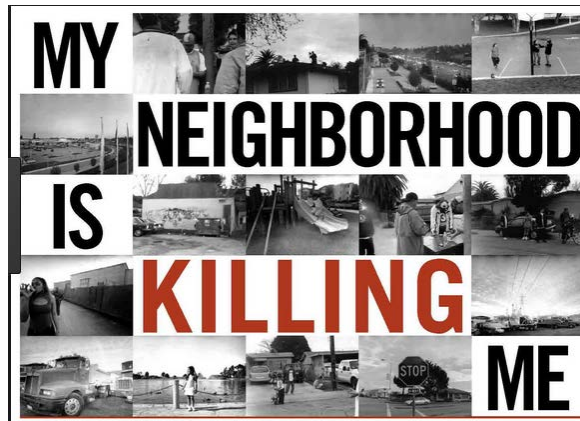


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# Other Factors Create EJ Communities

- ❖ Legacy in U.S. (and other places) of siting polluting industries in communities of color and poor communities
- ❖ Expensive to fight pollution
- ❖ Cheaper to live in contaminated/pollution zones
- ❖ NIMBY





# Duwamish Valley in Context





# Duwamish Valley Contamination - soils, air, ground water, Duwamish River Superfund site

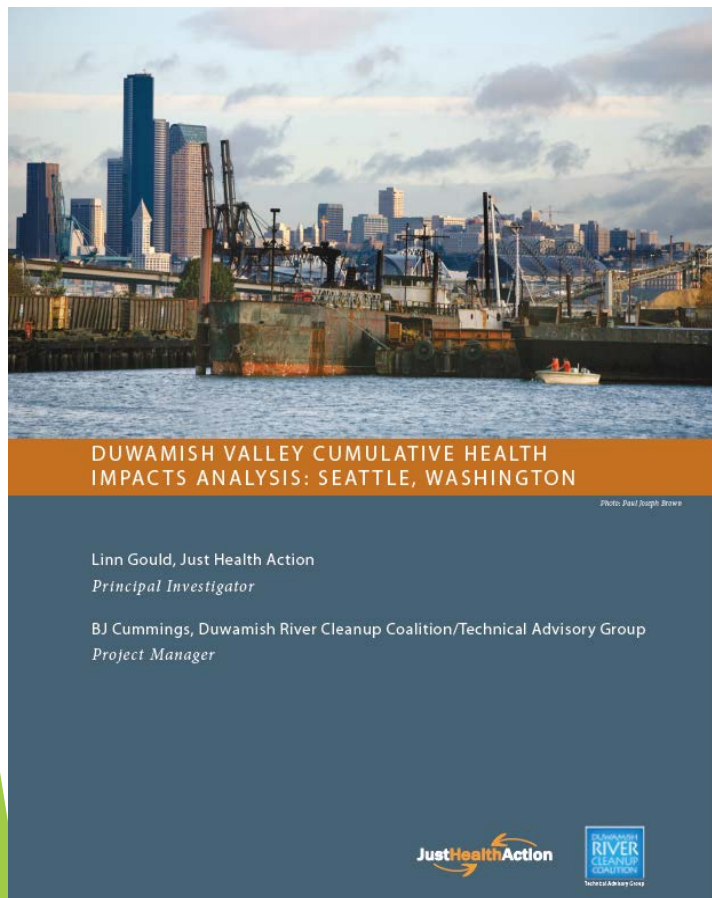


# Assets too!





# EPA Environmental Justice Research Grant



1. DV as an EJ community always anecdotal.
2. We set to prove it to make decision makers *listen*.
3. Used City and County equity initiatives and ordinances to pressure



**EQUITY & ENVIRONMENT AGENDA**

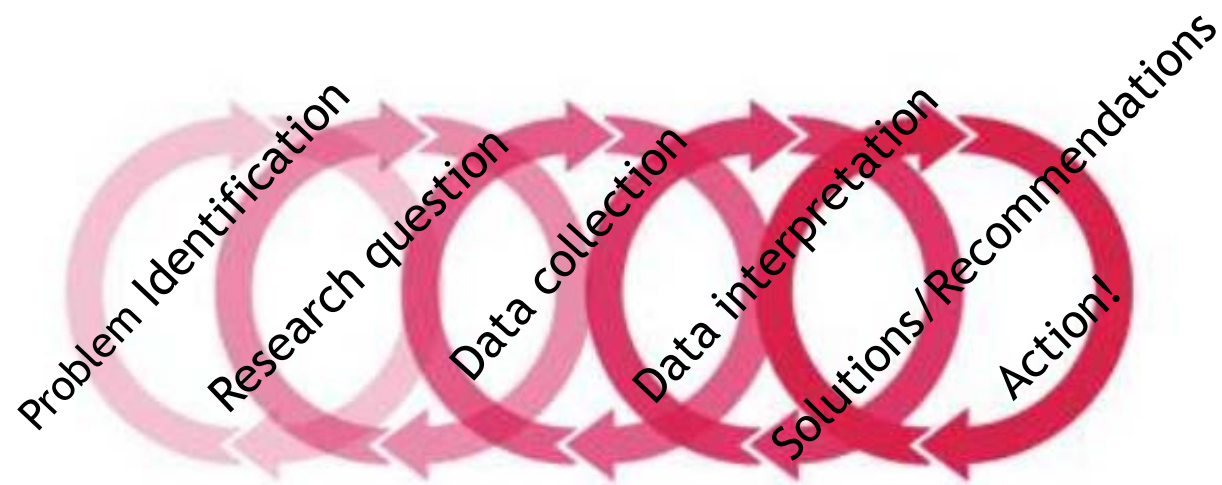


Technical Advisory Group





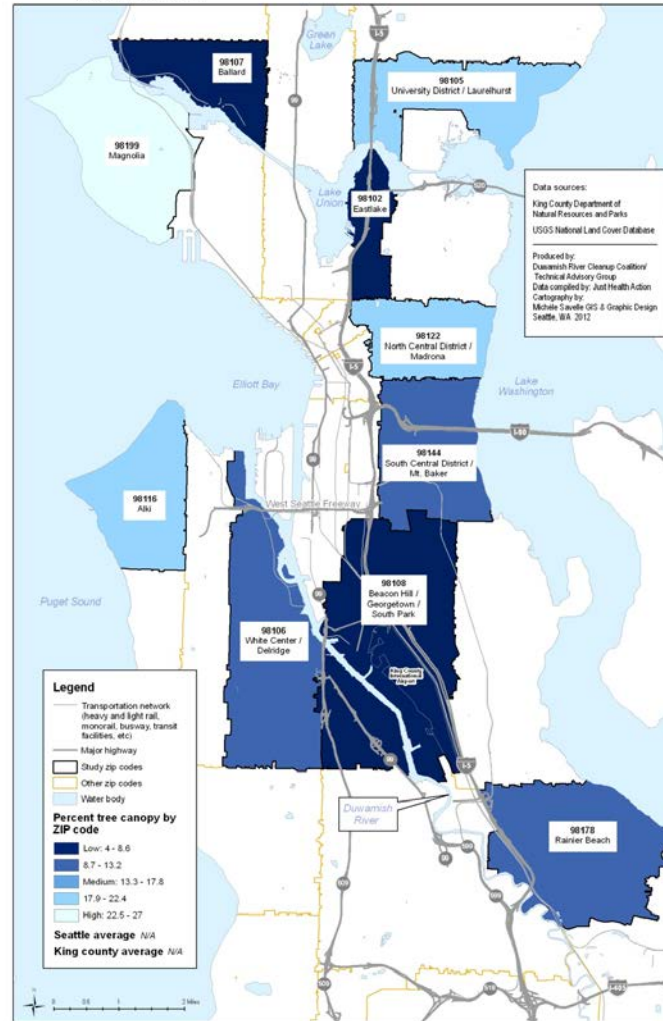
# Community Based Participatory Research - CBPR



**CBPR involves a cyclical and iterative process.**

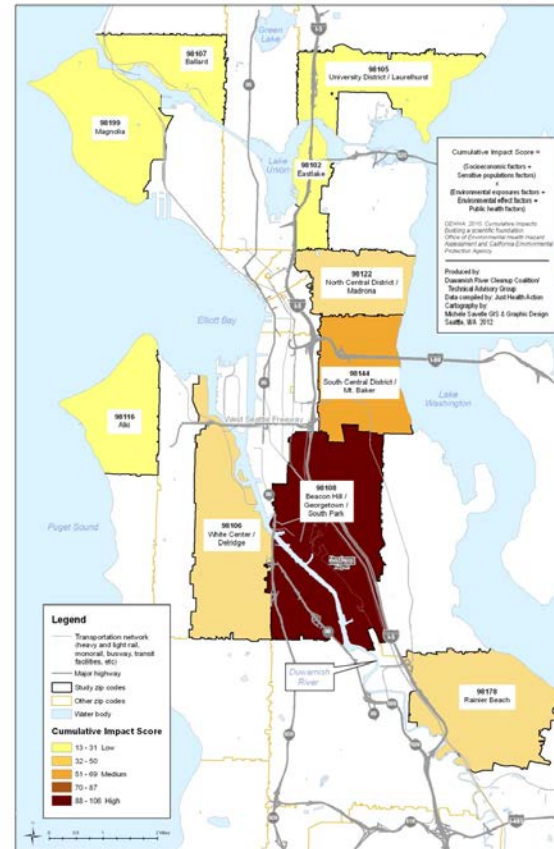
# Environment factors component (Rank 1-5): Percent Tree Canopy by ZIP code

Figure 11. Percent Tree Canopy, by ZIP Code  
Seattle, Washington



# Seattle Cumulative Health Impact Analysis Results (CHIA)

Figure 17. Cumulative Impact Score by ZIP Code, Seattle, Washington



Component	98108 Beacon Hill Georgetown South Park	98144 South Central District Mt Baker	98178 Rainier Beach	98106 White Center Delridge	98122 North Central District Madrona	98102 Eastlake	98107 Ballard	98105 University District Laurelhurst	98116 Alki	98199 Magnolia
<b>CUMULATIVE IMPACT SCORE</b>	<b>106</b>	66	50	46	43	30	28	21	19	13



# Georgetown/South Park Disparities

Indicator	Georgetown/ South Park Census tracts 109 and 112	Laurelhurst Census tracts 4100 and 4200	Seattle	King County
Life expectancy at birth (years)	73.3*	86.4*	81.5	81.5
Heart disease death rate per 100,000	202.9#	89.6*	138.4	137.8

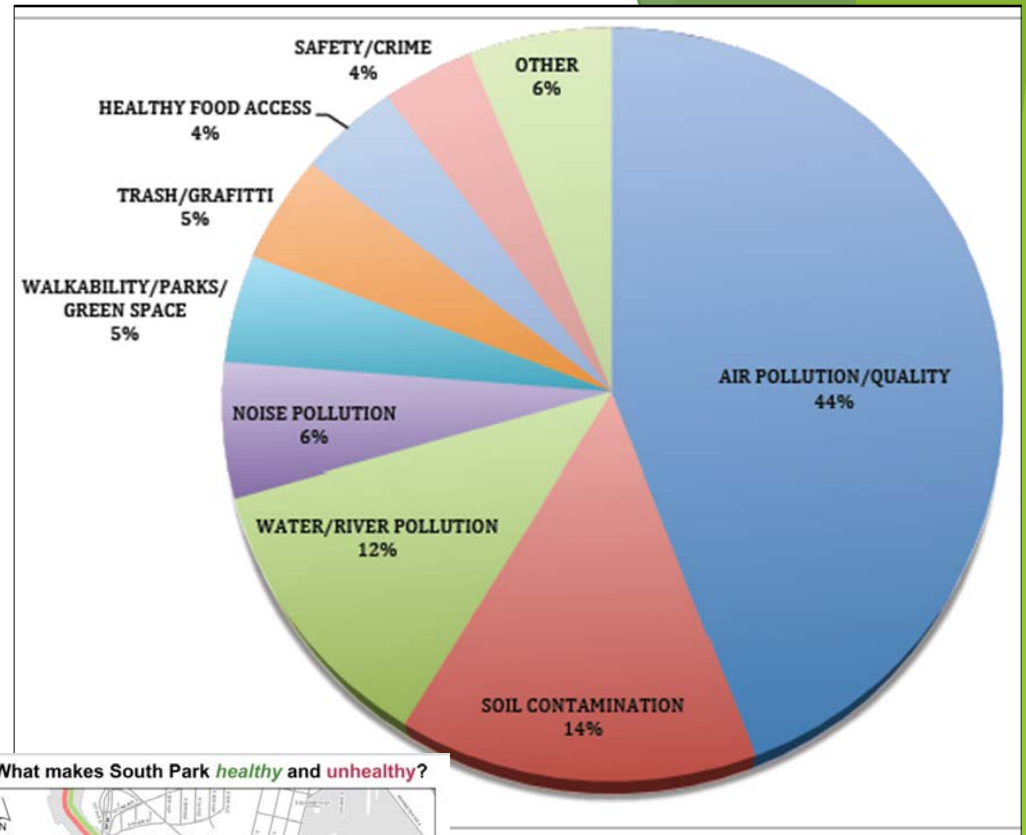
Source: Public Health Seattle & King County

\*p=0.05 from both KC and Seattle average

#p= 0.05 for KC average only



# Community Prioritization Workshops



What makes South Park *healthy* and *unhealthy*?



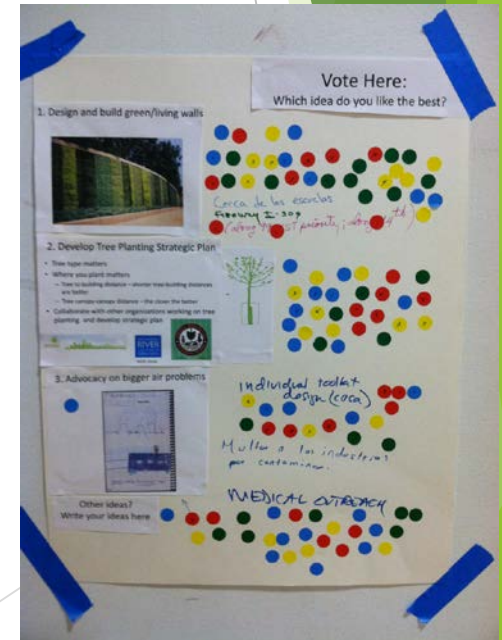
# Community Workshops: Opportunity for Information Exchange

We highlighted how pollution affects their health, including...

- ❖ High asthma rates
- ❖ High lung disease rates
- ❖ 13 year shorter life span than other places in Seattle

Community told us:

- ❖ Green walls are favorite action option
- ❖ Medical outreach for asthma also important
- ❖ “Indoor plants would be cool too” (DVYC youth)
- ❖ How do we build residential green walls?





# Duwamish Tree Canopy Enhancement Project



- ❖ Free trees for residents around the Duwamish Valley:
  - ❖ South Park
  - ❖ Georgetown
  - ❖ South Beacon Hill
  - ❖ Delridge
  - ❖ Highland Park
- ❖ Giveaway events October - March
- ❖ Multilingual staff
- ❖ Multiple types of trees available
- ❖ Planting help and follow up provided
- ❖ Program run by DIRT Corps
- ❖ Partnership with Duwamish Valley Youth Corps
- ❖ Funded by Seattle Parks Foundation



# Growing the Trees

- ★ Get trees from:
  - ★ KCD bare root plant sale
  - ★ WA and OR nurseries
- ★ Depot at City Soil Farm on KC Wastewater Treatment Plant Renton
- ★ Trees potted in GroCo soil mix
- ★ Watered with reclaimed water
- ★ High survival rate - around 85%
- ★ Rapid growth
- ★ DIRT Corps staff maintain the trees



# Types of trees offered:



- Have a variety of trees including:
  - Fruit trees - apples, pears, plums, cherries, persimmons, figs, quince
  - Conifers - cedar, spruce, pine, fir, hemlock
  - Deciduous trees - alder, maple, cascara, hazelnut, oak, ash, birch, aspen
  - Native shrubs - red twig dogwood, serviceberry, crabapple, myrtle, elderberry, twinberry, ninebark, Indian plum





# Events in neighborhoods

- ▶ Two events per neighborhood Oct-March
- ▶ Saturdays, usually 10am-2pm
- ▶ Advertise beforehand
  - ▶ Flyers at local businesses/community centers
  - ▶ Online forums
  - ▶ Local newspapers (Georgetown Gazette)
  - ▶ Announce at community meetings
- ▶ Partner with local groups like SPL and ECOSS
- ▶ DIRT brings ~80 trees to each event
- ▶ Residents pick their own trees
- ▶ Multilingual staff
- ▶ Planting and delivery help offered during event



# Support at events

- Binders with 1 page fact sheet for each tree
- Staff available to discuss right tree/right place
- Planting and delivery support available
- Planting instructions handout
- Watering instructions handout
- Resource list handout
- Watering bags provided
- Paperwork in multiple languages



# Involving Local Youth

- ▶ Duwamish Valley Youth Corps (DVYC) is a project partner
- ▶ Youth learn about:
  - ▶ Environmental Justice
  - ▶ Why plant trees?
  - ▶ Tree planting and care
  - ▶ Actions they can take to improve their neighborhood
- ▶ Do door-to-door outreach
- ▶ Assist with delivery and planting
- ▶ Help staff events in South Park





# Follow-up Support and Survivorship Study

- ☀ Trees are tagged with ID# and our contact info
- ☀ Visit houses in summer
- ☀ Provide consultations
- ☀ Track each tree for 3 years
- ☀ Home deliveries available
- ☀ Reminder postcard sent out in summer



# Canopy Program Results

- ✓ Local job training programs learn about trees and planting (DIRT Corps and DVYC)
- ✓ Planted ~1000 trees in Duwamish Valley
- ✓ ~300 residences planted trees
- ✓ Increased tree education
- ✓ Made tree planting and care convenient and accessible
- ✓ Increased food security
- ✓ Increased tree canopy
- ✓ Looking to expand to other neighborhoods/cities



# Georgetown Green Wall

- ▶ 126' long x 13' tall 3-D panels
- ▶ 75 vines planted
- ▶ Green walls can go where trees can't
- ▶ Will act as giant air filter
- ▶ Community decided location
- ▶ Community had input on design
- ▶ Community helped plant vegetation
- ▶ Publicity helped community get \$ for more projects





# Community Reactions to the Project

- ✱ Happy project took only one year - action
- ✱ Appreciated their concerns, ideas, needs were considered
- ✱ Gave more input because their input had an impact
- ✱ Liked regular progress updates
- ✱ Residents want residential green wall workshops
- ✱ Grateful we addressed a high community concern (air pollution)
- ✱ More screens please!



# South Park Green Wall

- ▶ SPGW is small, art focused to match site and needs
- ▶ Panels fabricated by local welder
- ▶ DVYC youth participated in panel fabrication
- ▶ Installed in April 2017
- ▶ Plants planted by youth
- ▶ Community invited to inauguration day





# Home Green Walls Workshops

- ▶ JHA will teach DVYC youth how to build
- ▶ JHA will teach DVYC youth how to teach
- ▶ DVYC youth will teach workshops to communities
- ▶ Applied to DROF grant for funding
- ▶ Start workshops for DVYC youth in winter 2018





# Ways GSI is a tool for Environmental Justice

- ! Gives communities power to take action
- ! Beautifies environments that often need it
- ! Built quickly for speedy impact
- ! Opportunities for real community involvement
- ! Community/resident ownership
- ! Job training and opportunities
- ! Lower cost



# Key Points for Working in EJ Communities



1. Never assume you know best, or what the community wants/needs
2. Pay attention to other battles the community is fighting
3. Listen to what the community says directly and indirectly
4. Be precise and brief with your information and requests
5. Partner with community members and groups, compensate them for their time
6. Celebrate community expertise
7. Be conscious and respectful of the cultures of the community
8. Actions must show you've listened to community input
9. Let the feedback you hear drive your next projects



# Questions to Ask Yourself

- ? What is the intention of the project?
- ? Is this what the community wants?
- ? Are you reaching the whole community?
- ? How does it directly benefit community?
- ? How does it empower community?
- ? Will it become a burden?
- ? Are you compensating the residents?
- ? What/who are you teaching?
- ? What resources can you offer?





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