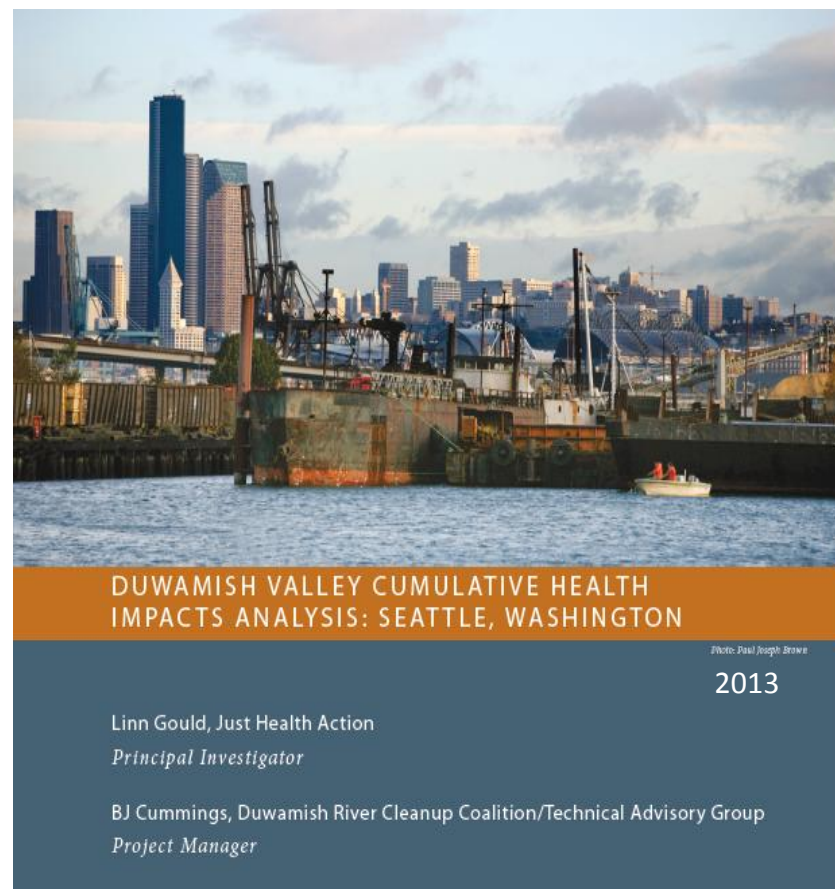


# Duwamish Valley Cumulative Health Impacts Analysis: Continuing to Use Science to Influence Decision Making in Seattle, WA

APHA  
October 31, 2016

Linn Gould, MS, MPH  
Just Health Action

Alberto Rodriguez  
Duwamish River Cleanup Coalition



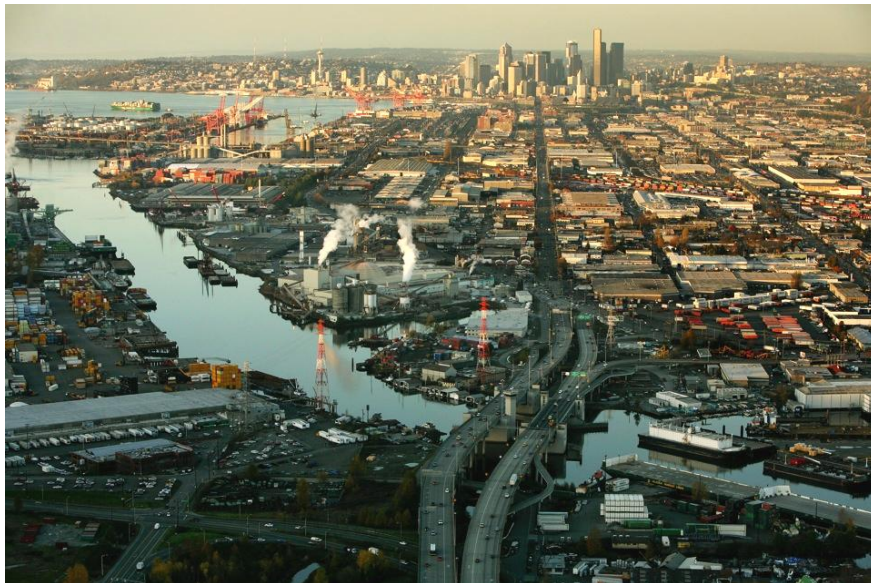
Technical Advisory Group





# Today

- Where is the Duwamish Valley?
- Cumulative impacts analysis
- Influencing decision makers







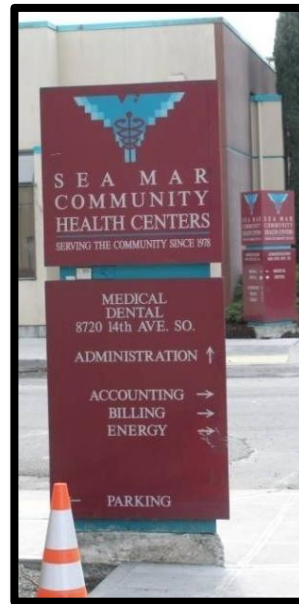
# Community with EJ Concerns: Assets and challenges



Contamination waiting to be cleaned up



Marra Farm



Abandoned housing



SP Community Center









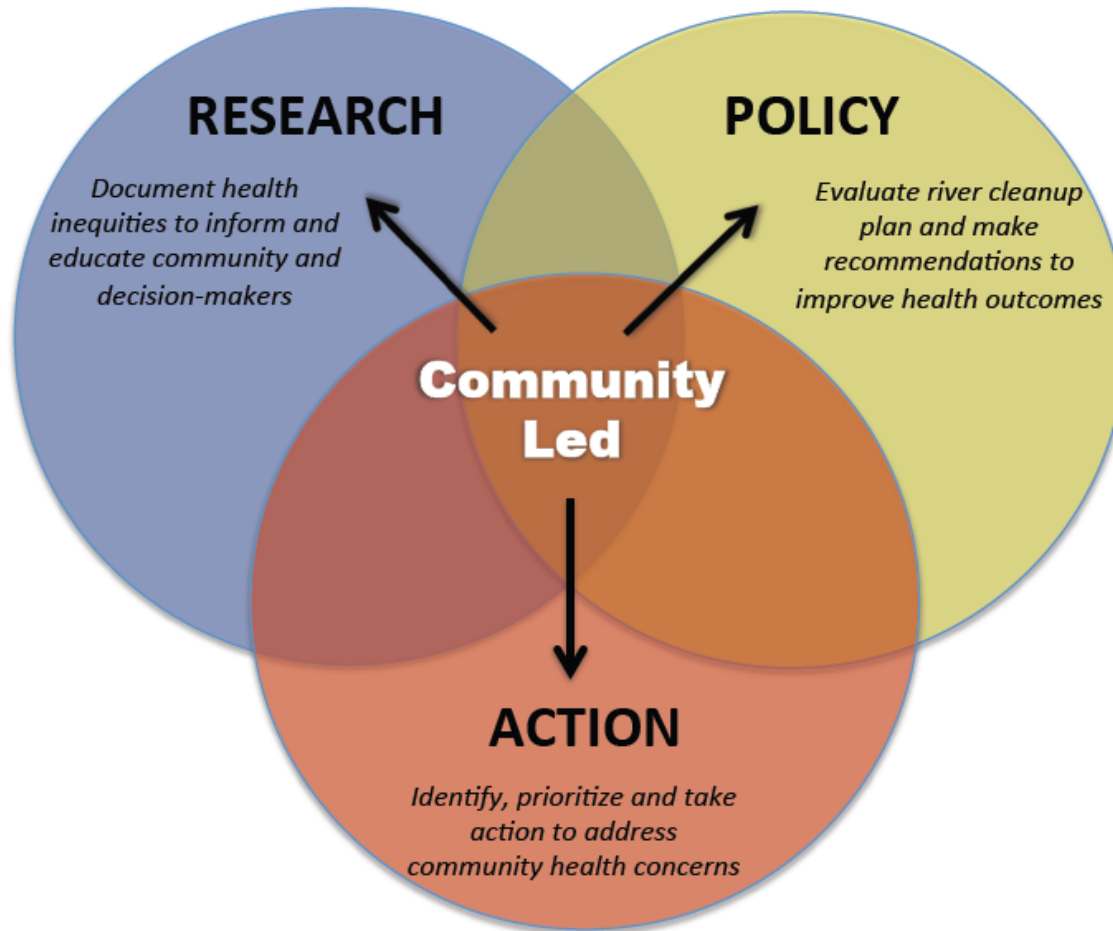
# Duwamish Valley Healthy Communities Project

*Improving environmental and human health through*

- *community-based research* • *promoting protective and equitable policies* • *taking action!*



Cumulative  
Health  
Impacts  
Analysis  
(CHIA, EPA EJ)



Duwamish  
Cleanup  
Health  
Impact  
Assessment  
(HIA,  
Pew/RWJF)

Community Action for Renewed Environment  
(CARE, EPA)



# EPA Environmental Justice Research Grant



## DUWAMISH VALLEY CUMULATIVE HEALTH IMPACTS ANALYSIS: SEATTLE, WASHINGTON

*Photo: Paul Joseph Brown*

Linn Gould, Just Health Action  
*Principal Investigator*

BJ Cummings, Duwamish River Cleanup Coalition/Technical Advisory Group  
*Project Manager*

2013



Technical Advisory Group





# Methodology – CAL/EPA and OEHHA

## CUMULATIVE IMPACTS: BUILDING A SCIENTIFIC FOUNDATION



December 2010

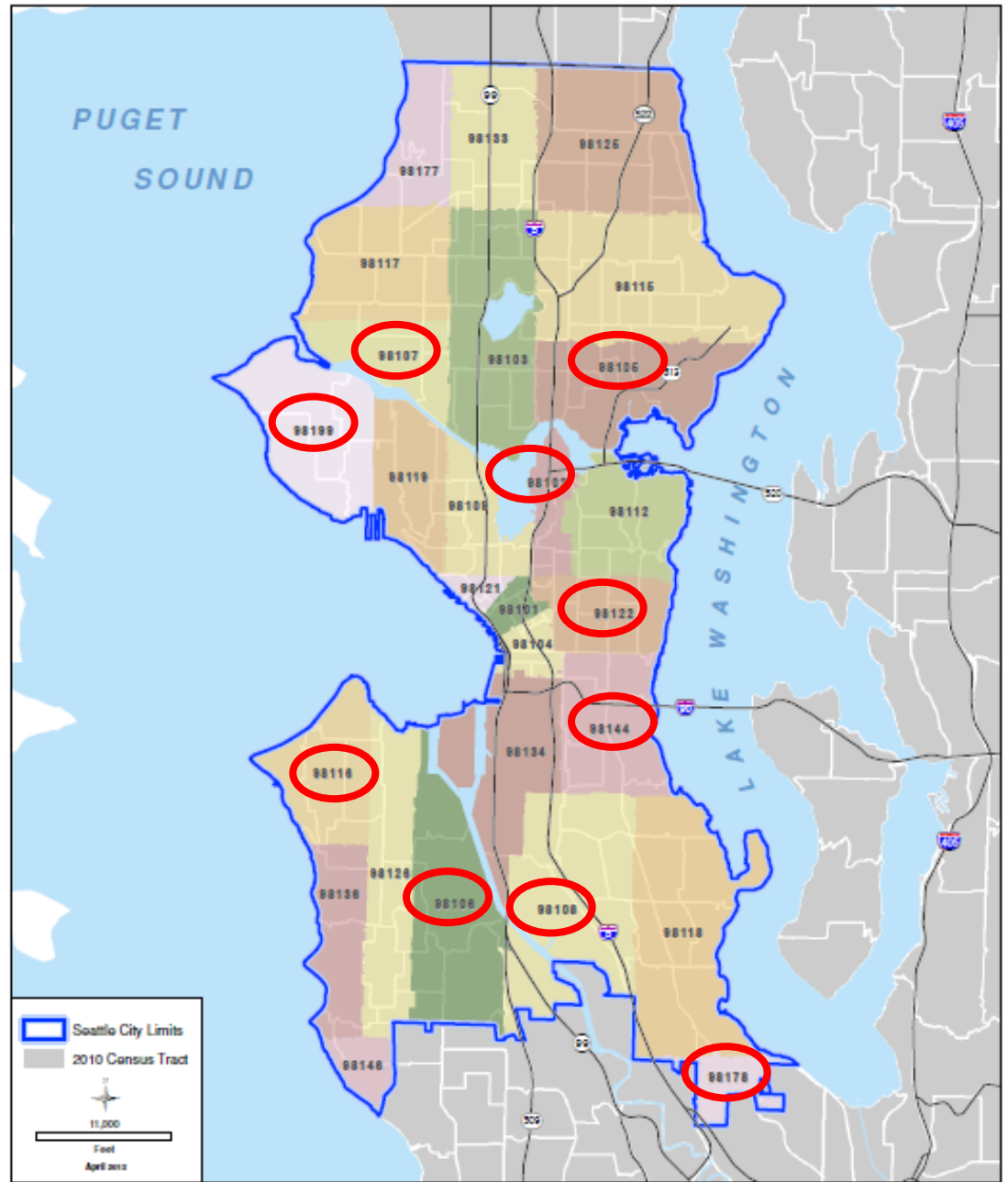
Linda S. Adams, Secretary  
California Environmental Protection Agency

Joan E. Denton, Ph.D., Director  
Office of Environmental Health Hazard Assessment



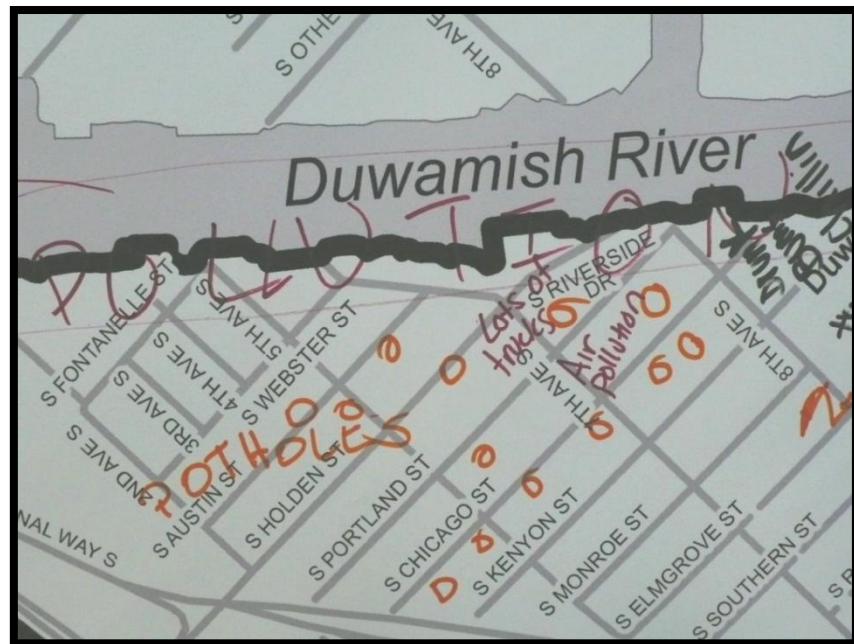
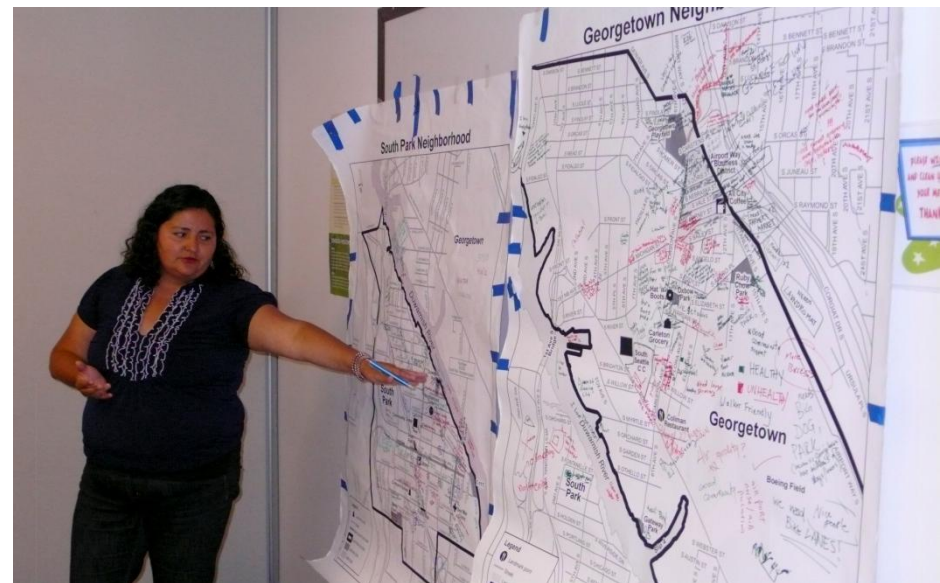
# Geographic level of analysis

- 10 ZIPs
- High, medium, low indicators





# Choosing and Researching Indicators – CBPR



# Community Health Mapping

Where is our neighborhood healthy?

Where is our neighborhood unhealthy?

What makes Georgetown **healthy** and **unhealthy**?



# Research on 24 Indicators in 5 categories

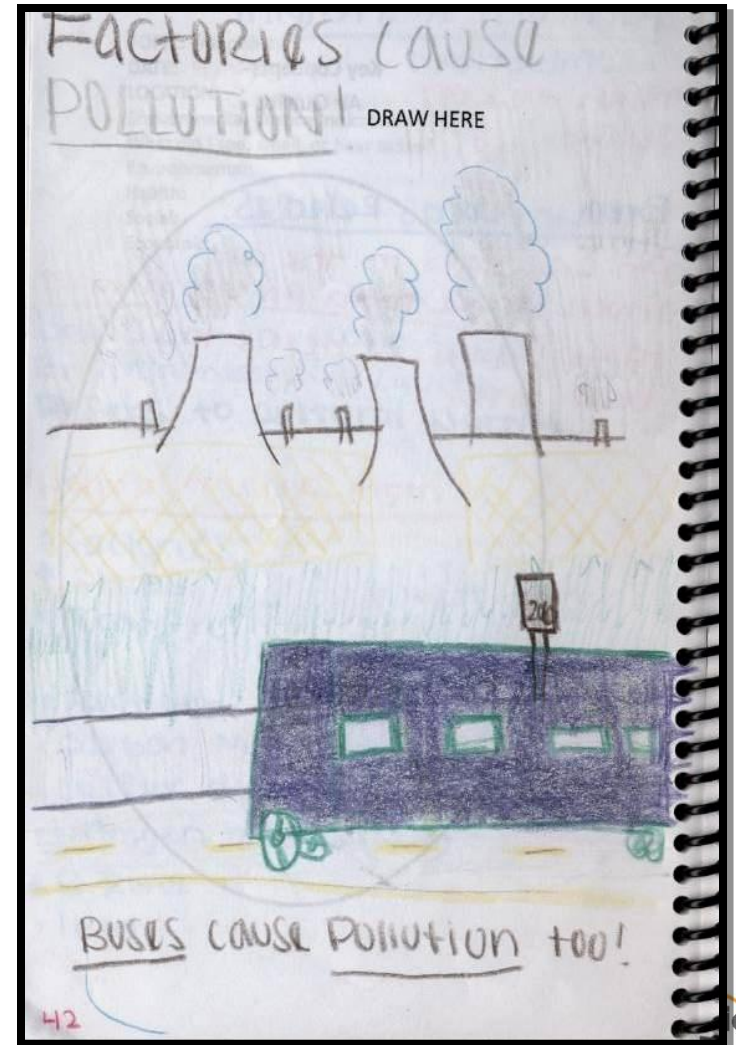
Component	Definition
Socioeconomic factors	Community characteristics that result in increased vulnerability to pollutants
Sensitive populations	Populations with traits that may magnify the effects of pollutant exposures
Environmental exposures	Contact with pollution
Environmental effects	Adverse built environment conditions
Public health effects	Disease and other health conditions



# Information sources



- The community!
- U.S. Census
- Public Health Seattle King County
- King County Department of Natural Resources
- Environmental Protection Agency TRI and C-FERST
- WA State Department of Ecology data base



# CHIA: Range of scores for each component

Component	Range of Possible Scores	Map Color
Socioeconomic factors	1-3	BROWN
Sensitive populations factors	1-3	GREEN
Environmental exposures factors	1-10	BLUE
Environmental effects factors	1-5	PURPLE
Public Health effects factors	1-5	PINK
Cumulative Impact Score	6-120	ORANGE

Source: Cal/ EPA Cumulative Impacts: Building a Scientific Foundation

Figure 3. Percent Below 200% Poverty Level, by ZIP Code  
Seattle, Washington, 5-year Average 2006-2010

# Socioeconomic factor component (rank 1-3): Percent Below 200% Poverty Level by ZIP code

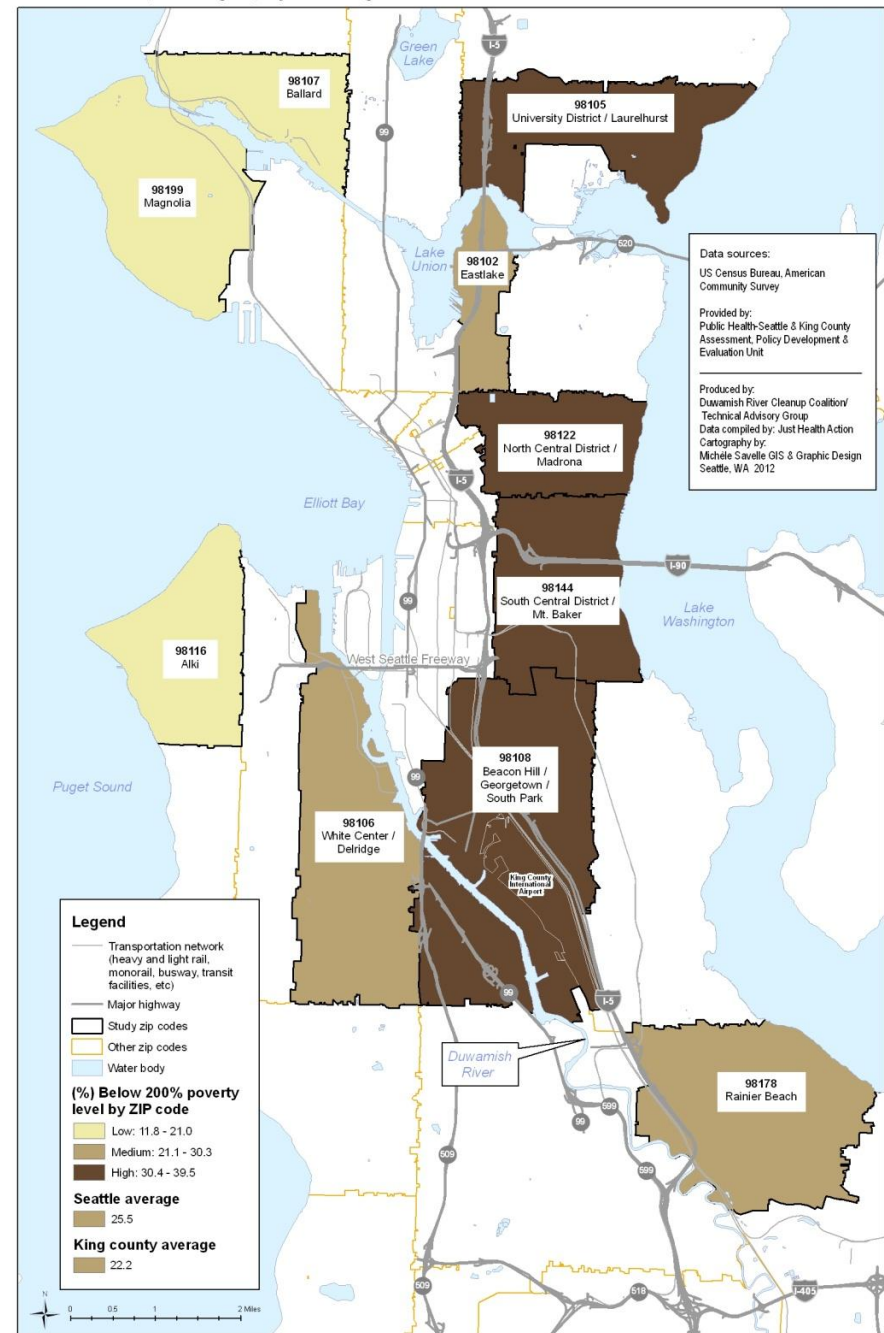
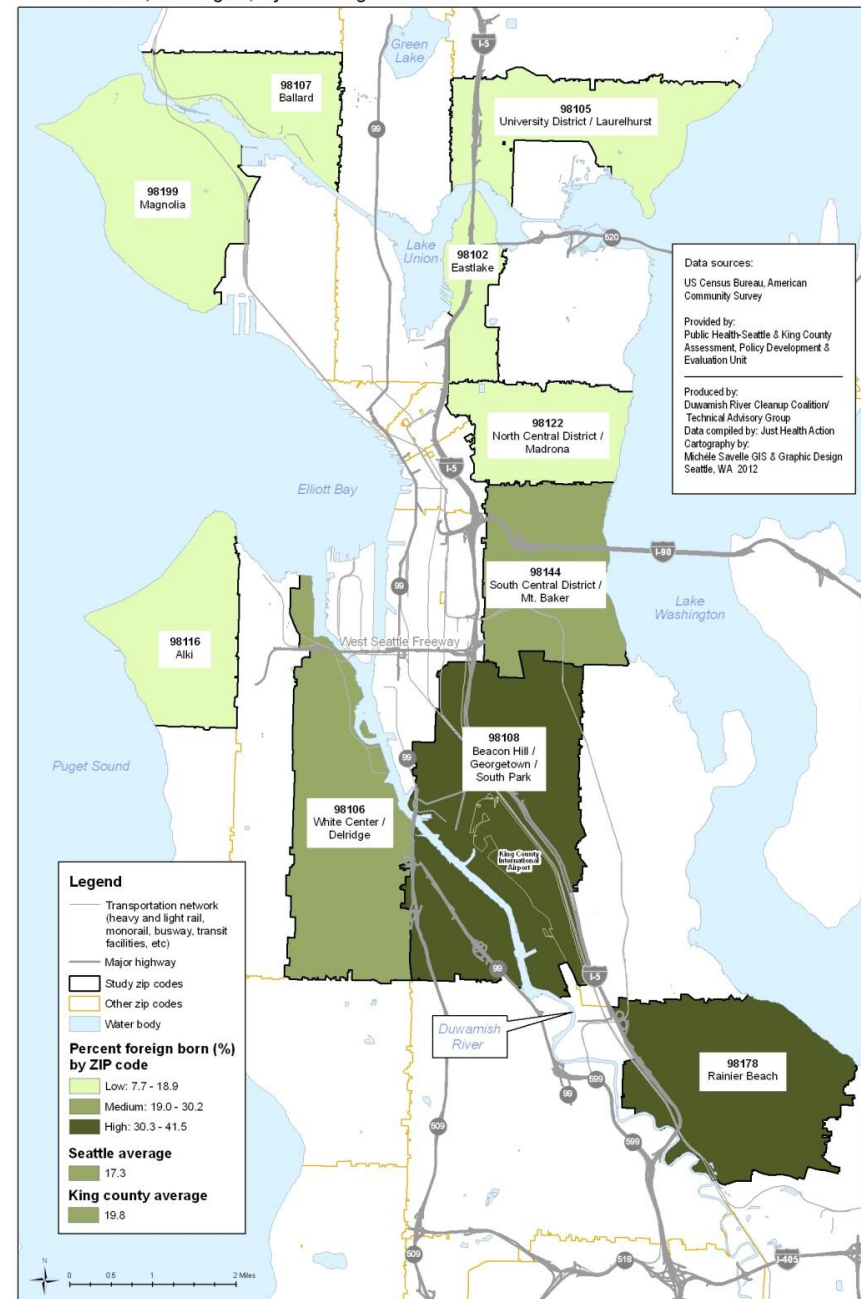




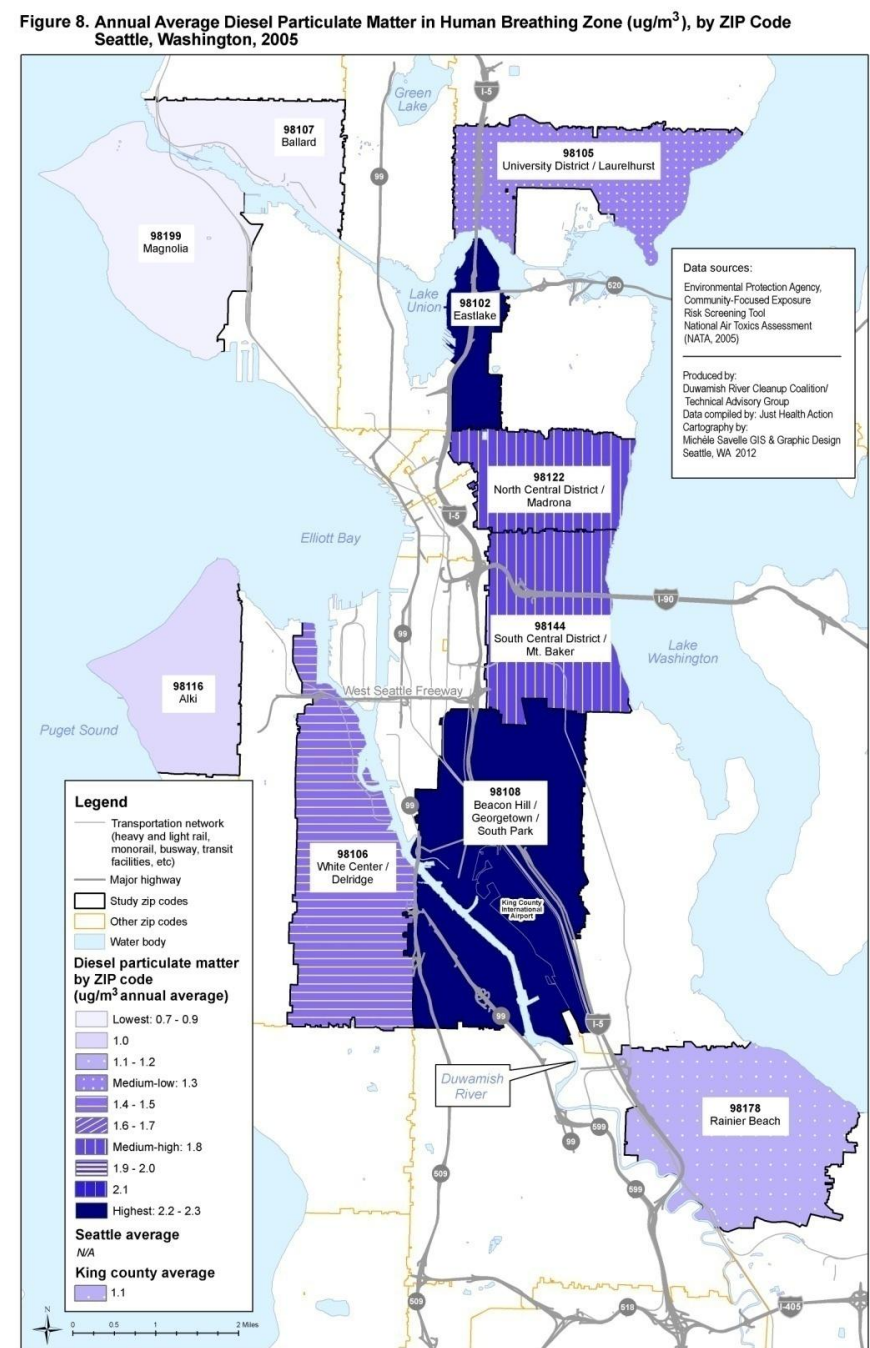
Figure 7. Percent Foreign-Born by ZIP Code  
Seattle, Washington, 5-year Average 2006-2010

# Sensitive populations component (rank 1-3): Percent Foreign Born by ZIP code



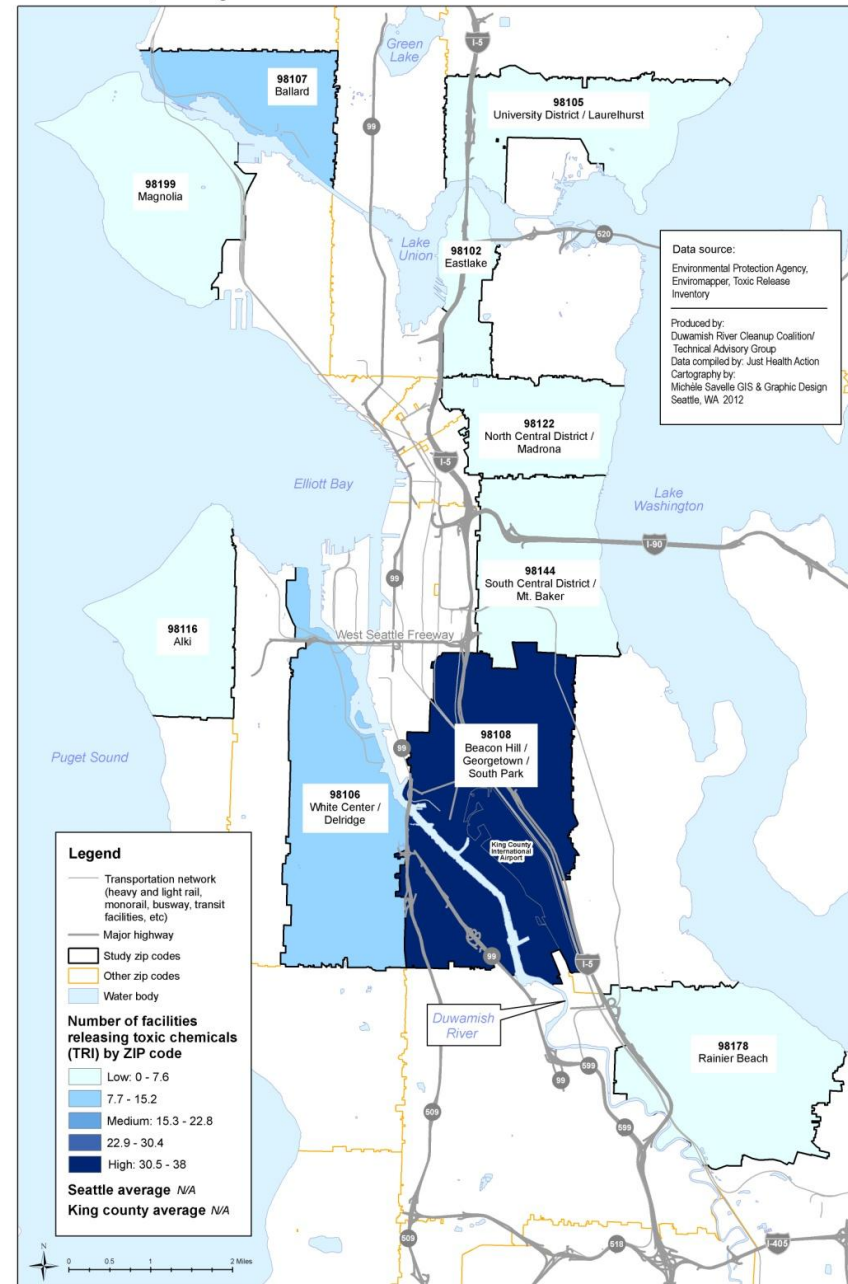
# Environmental exposures component (Rank 1-10):

Annual Average Diesel  
Particulate Matter in  
human breathing zone  
( $\mu\text{g}/\text{m}^3$ ), by ZIP code



# Environmental effects component (Rank 1-5): Number of Toxic Release Inventory Sites, by ZIP code

Figure 13. Number of Toxic Release Inventory Sites, by ZIP Code  
Seattle, Washington



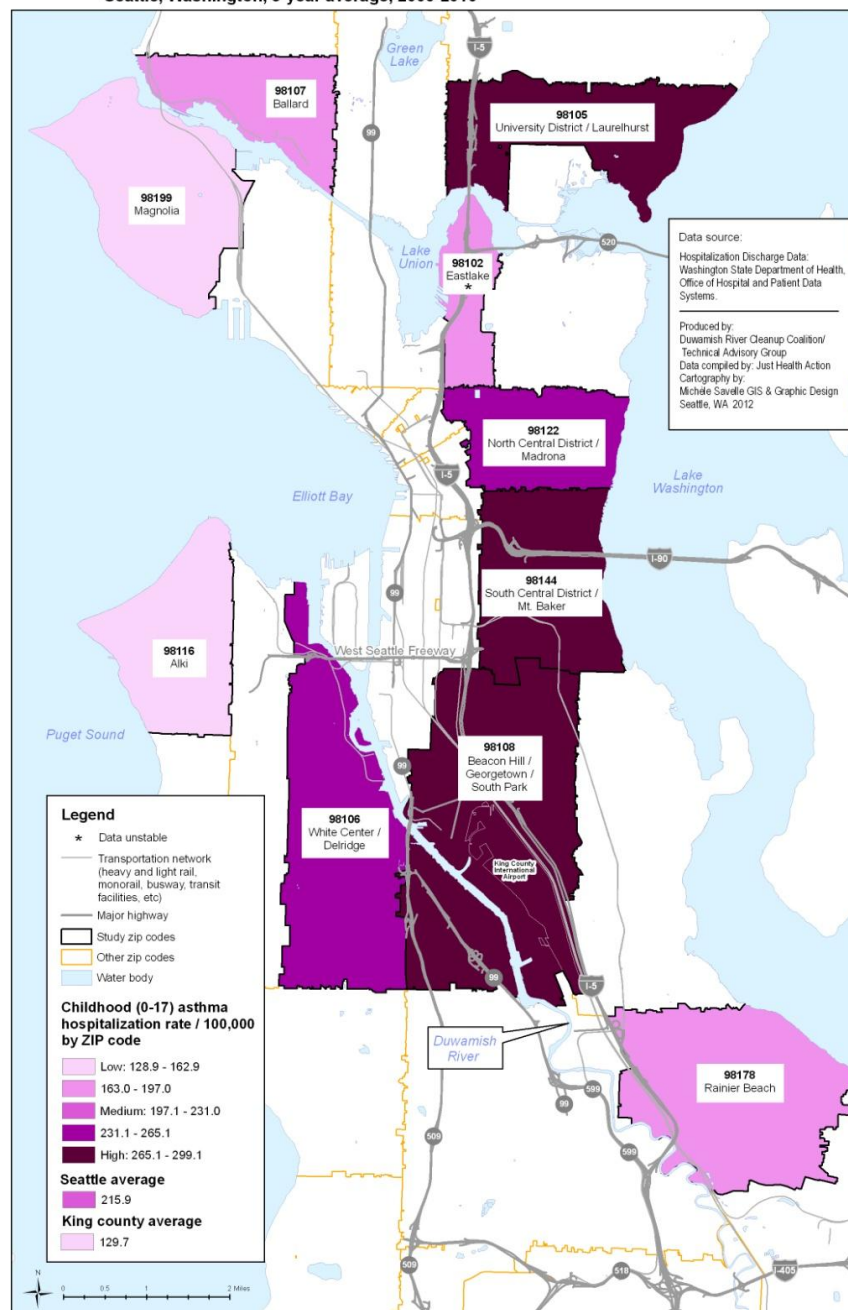


**Figure 11. Percent Tree Canopy, by ZIP Code  
Seattle, Washington**



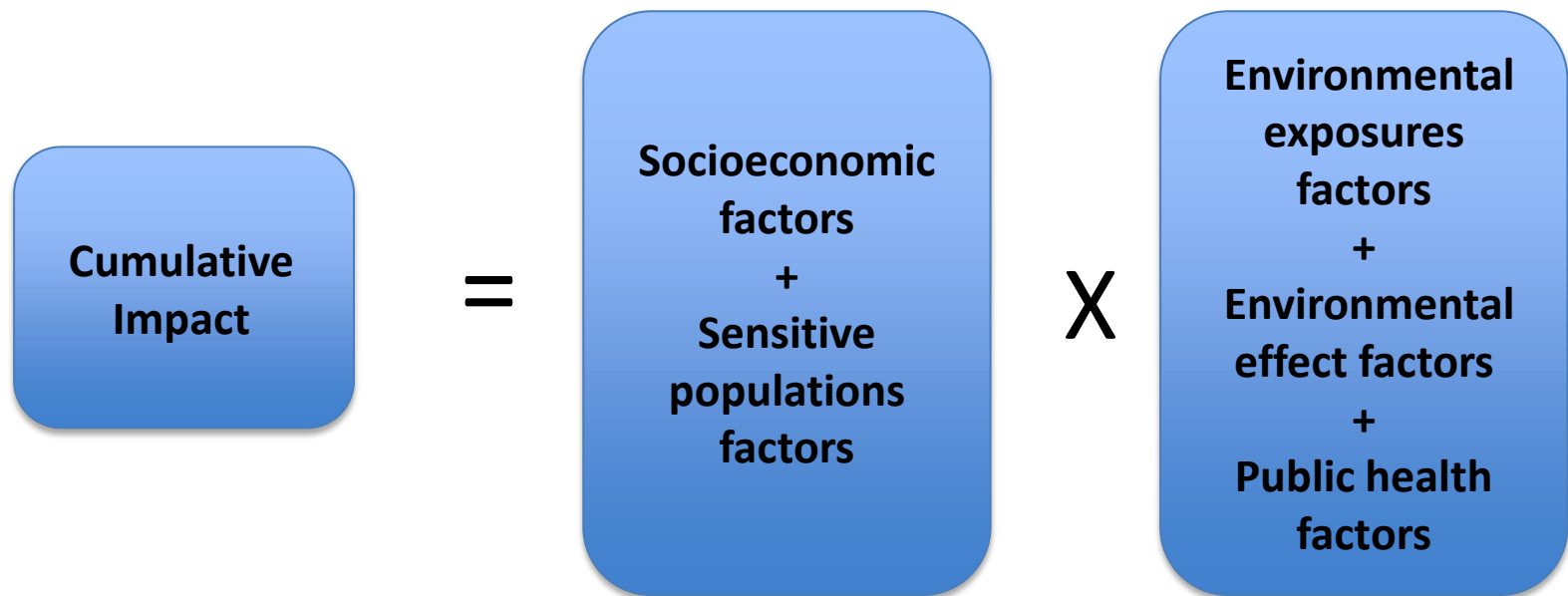
# Public health factors component (Rank 1-5): Childhood asthma hospitalization rate per 100,000 by ZIP code

Figure A8. Childhood (0-17) Asthma Hospitalization Rate per 100,000, by ZIP Code  
Seattle, Washington, 5-year average, 2006-2010



# Cumulative Health Impacts Formula:

Input 3 indicators from each component



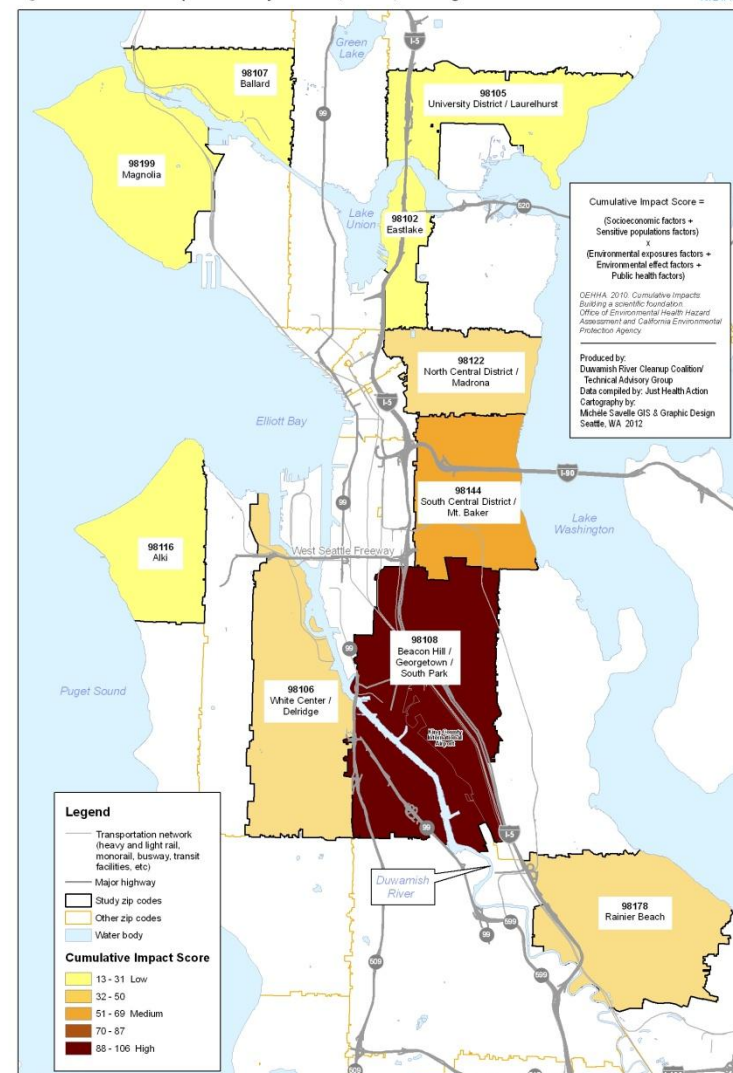
Source: Cal/ EPA Cumulative Impacts: Building a Scientific Foundation, 2010



# Seattle Cumulative Impact Analysis Results

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

DRAFT FINAL v2  
10/24/12



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>	<b>66</b>	<b>50</b>	<b>46</b>	<b>43</b>	<b>30</b>	<b>28</b>	<b>21</b>	<b>19</b>	<b>13</b>

# Georgetown/South Park disparities

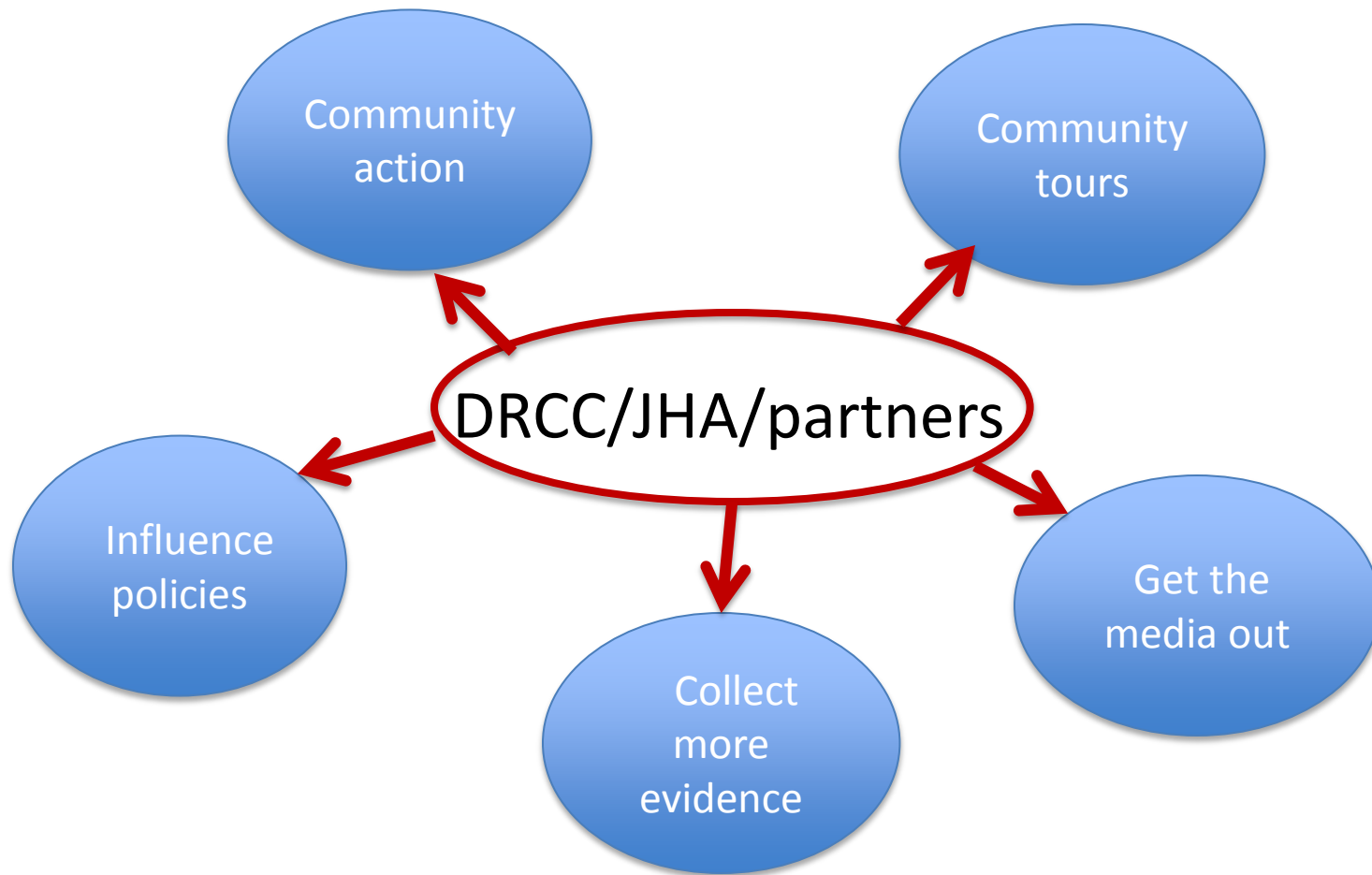
Indicator	Georgetown/ South Park Census tracts 109 and 112	Laurelhurst Census tracts 4100 and 4200	Seattle	King County
Life expectancy at birth (years)	73.3*	86.4*	81.5	81.5
Heart disease death rate per 100,000	202.9#	89.6*	138.4	137.8

Source: Public Health Seattle & King County

\*p=0.05 from both KC and Seattle average

#p= 0.05 for KC average only

# Strategies used to influence decision makers





# Community tours



DRCC coordinator: James Rasmussen



EPA OWOW Director Benita Best-Wong and South Park resident Paulina Lopez



Duwamish River tour



# Media



**Macklemore**



**SEATTLEWEEKLY**



**King County**

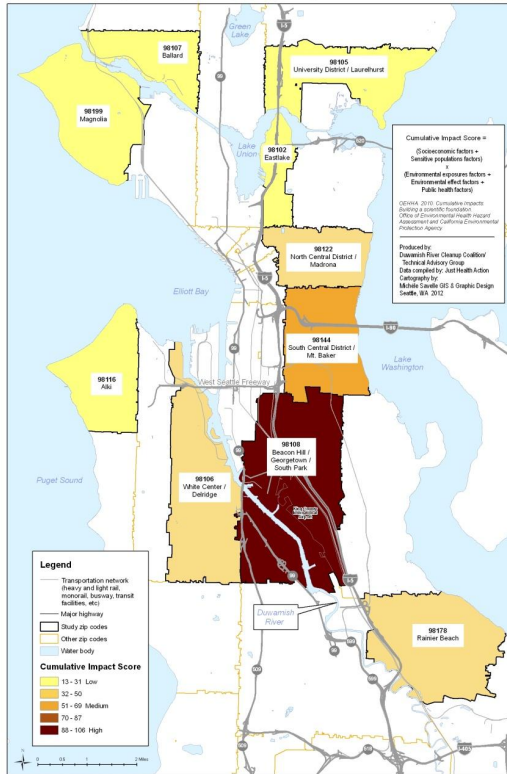
KC Communications specialist and KC  
Deputy Executive Director Fred Jarrett



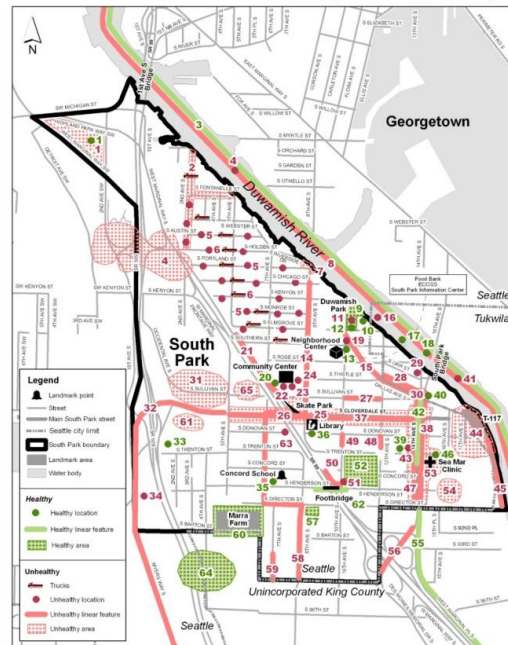


# Community Prioritization Workshops

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



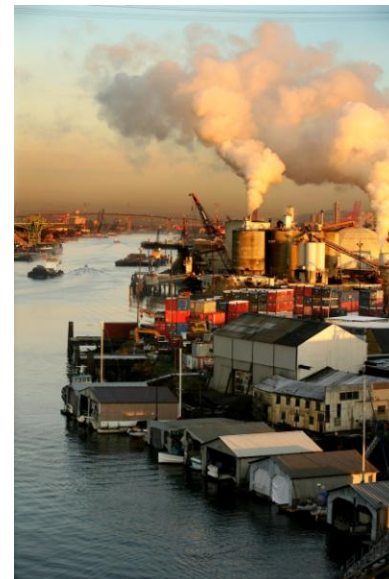
## What makes South Park *healthy* and *unhealthy*?



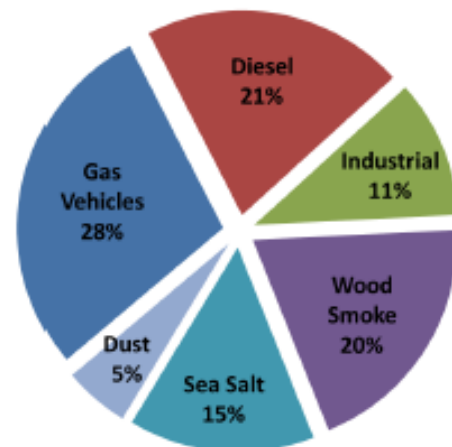


# Evidence:

## DRCC “Clean Air” grant (EPA EJ Collaborative Problem Solving Grant)



Seattle E Marginal Way S & S Idaho St



Adapted from Kotchenruther (2013)

**Figure 2.** The sources of pollution in the Duwamish Valley at two (2) different locations

# Community green jobs



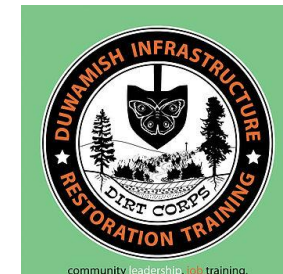
Duwamish Valley Youth Corps with King 5's anchor woman Joyce Taylor



Technical Advisory  
Group



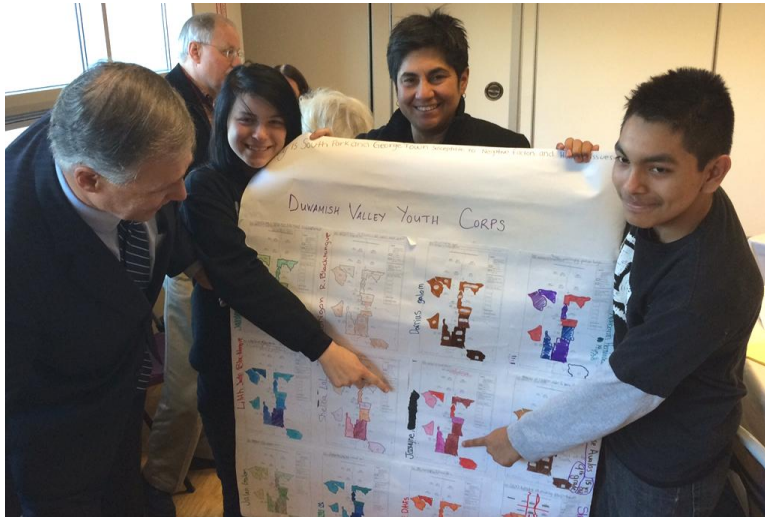
DIRT Corps



JustHealthAction



# Youth Voice with Decision Makers



Governor Jay Inslee with DRCC  
Duwamish Valley Youth Corps:  
*"I thought everyone had asthma"*



Technical Advisory Group



Seattle Mayor Ed Murray with DRCC  
Duwamish Valley Youth Corps





# Community Action for Clean Air!



Building air filters to reduce in door air pollution



DV tree canopy enhancement project

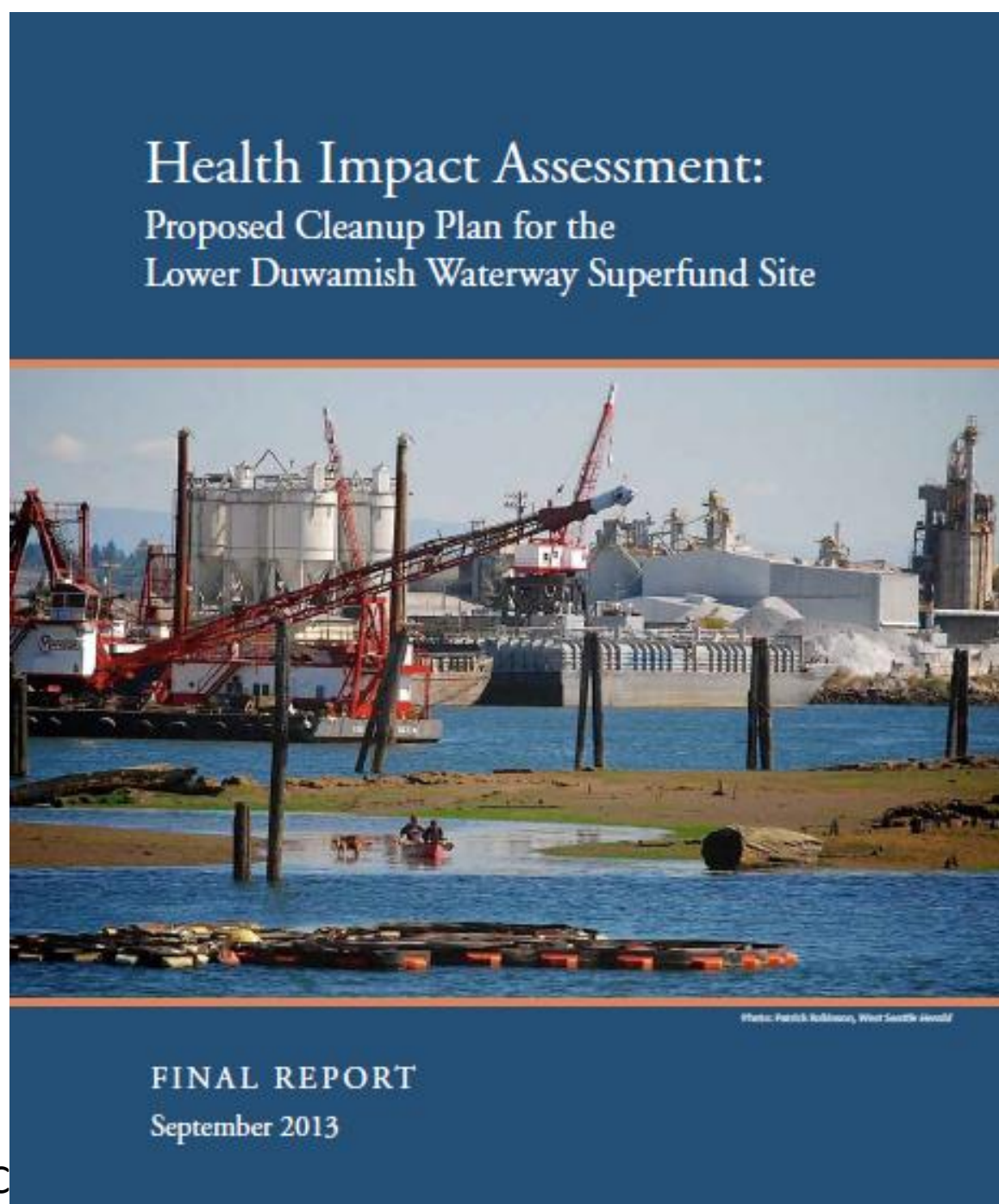


Building green walls to mitigate **JustHealthAction** air pollution

# Continuing to collect evidence

What are  
unintended  
consequences  
of a cleanup?

Pew Charitable Trusts grant to  
University of Washington, JHA, DRCC





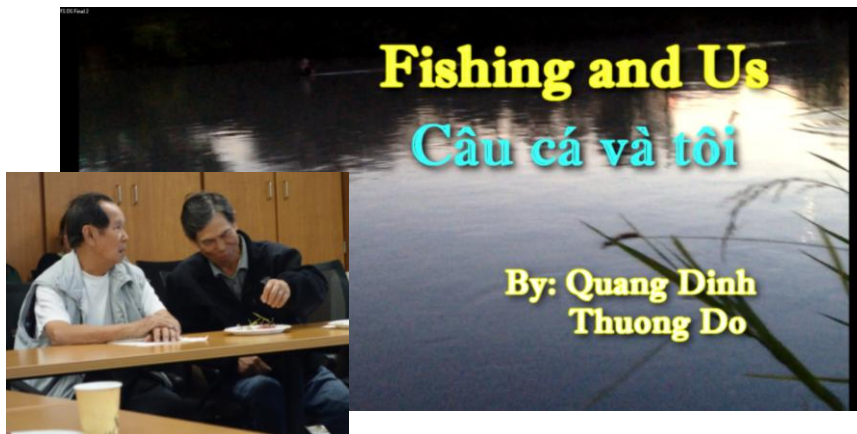
# Community Action for Clean Water and Climate Change Resilience



Installing cisterns and rain gardens



Protecting immigrant fishers



<https://www.youtube.com/watch?v=NDmkoBJpKYU>

# Our next challenge: Community Empowerment- Increasing community capacity to talk to decision makers



Duwamish River Opportunity Fund:  
Immigrant Fisher Community  
Health Advocates (*Promotores*)

Built into  
proposal  
and  
contract

## 1. INFORMATION:

What do promotores want to learn from experts?



## 2. TRAINING: Co-develop peer training model



## 3. OUTREACH:

Develop skills; Design outreach plans; collect stories



## 4. ADVOCACY:

- Learn skills to present to decision makers
- Presenting





# Policy Changes in Seattle and King County

CITY OF SEATTLE  
RESOLUTION 31567

A RESOLUTION related to the Duwamish Waterway Cleanup and the health of communities adjacent to the Lower Duwamish Waterway.

## KING COUNTY

### PRO-EQUITY POLICY AGENDA



FOR THE EQUITY  
AND SOCIAL JUSTICE  
STRATEGIC PLAN

## CITY OF SEATTLE

### RACE & SOCIAL JUSTICE INITIATIVE



### EQUITY & ENVIRONMENT AGENDA



## CITY OF SEATTLE

# Successes

- More grants and new partnerships
  - City, County, U.S. Forest Service, Seattle Parks Foundation, Seattle Foundation, etc
- Equity & Environment Initiative
  - First-in-the-nation
  - Specific commitments to Duwamish Valley
- Creation of a City of Seattle Duwamish Valley Advisor
  - Place based focus



## EQUITY & ENVIRONMENT AGENDA



Earth Day, 2015



Alberto Rodriguez

# Questions?

## Contact:

**Linn Gould**

[gouldjha@gmail.com](mailto:gouldjha@gmail.com)

[www.justhealthaction.org](http://www.justhealthaction.org)

(206) 324-0297

**James Rasmussen**

[james@dumwamishcleanup.org](mailto:james@dumwamishcleanup.org)

[Duwamishcleanup.org](http://Duwamishcleanup.org)

(206) 954-0218

# ACKNOWLEDGEMENTS

- Paulina Lopez – Community expert
- BJ Cummings – Co-author



Technical Advisory  
Group



SCHOOL OF PUBLIC HEALTH  
UNIVERSITY of WASHINGTON



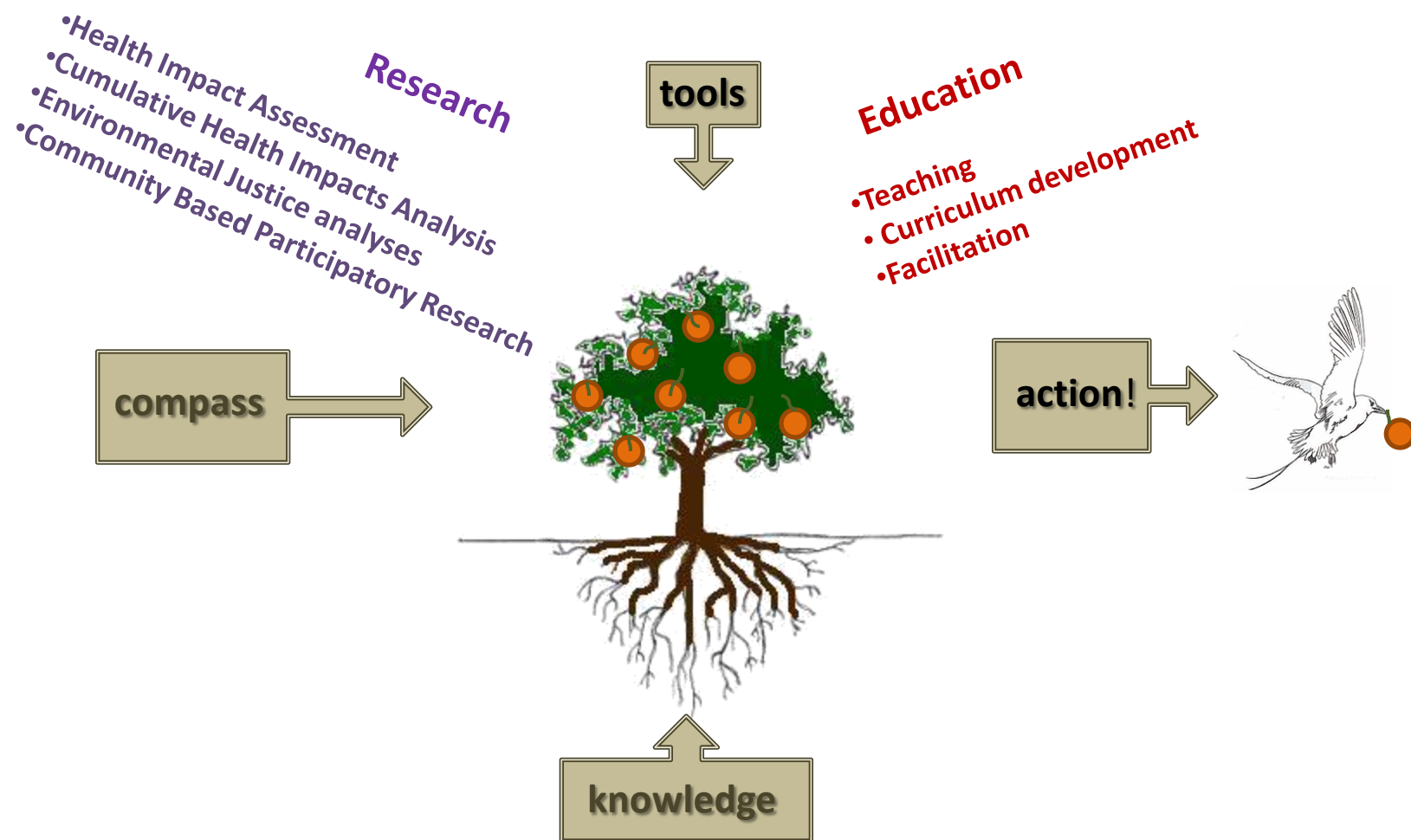


# Addressing seafood contamination for subsistence fishers: Community participatory learning & action



APHA  
November 2, 2016  
Linn Gould, MS, MPH

# JHA: working towards health equity



# ACTION: Community cleanup



Safe needle dispensation