

# A Three Pronged Collaborative Approach to Improving Health in an Environmental Justice Community



APHA: Session 4392  
Valuing and leveraging local  
knowledge

October 30, 2012

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Technical Advisory Group



SCHOOL OF PUBLIC HEALTH  
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# Presenter Disclosures

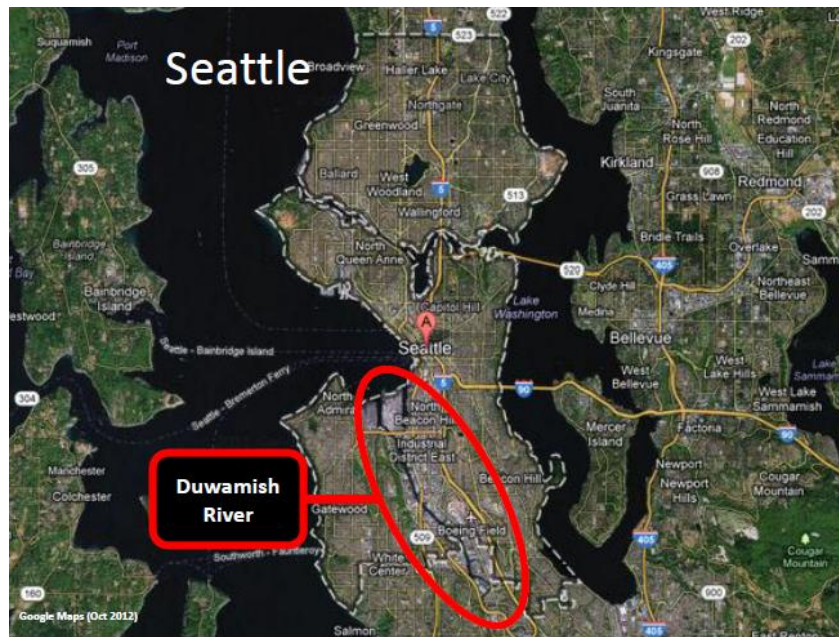
**Linn Gould, Bill Daniell, BJ Cummings**

**The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:**

No relationships to disclose

# Today

1. Community description – Duwamish Valley
2. Three – pronged approach healthy communities approach
3. Successes/Challenges/Recommendations



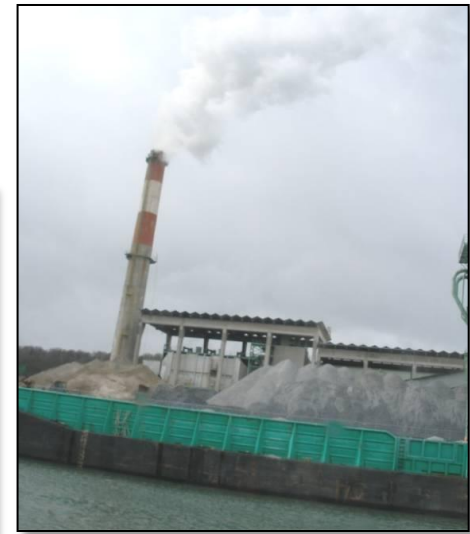
# Seattle, Washington and Duwamish Valley (looking south)



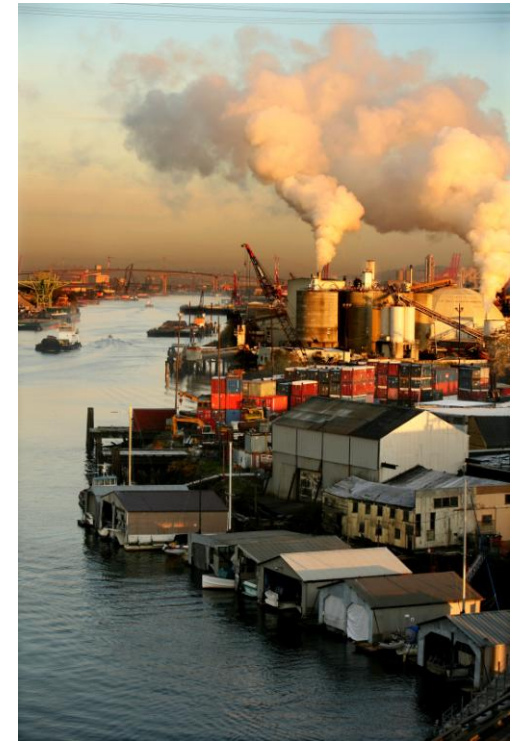


# Duwamish Valley Industrial Base

- 5000 acres zoned industrial
- 80% of Seattle's industrial land base
- 80,000 family wage jobs
- BUT legacy of contamination in soils, ground water, air, surface water, sediments



# Duwamish River declared Superfund Site (2001)



- 5 miles long
- 441 acres
- Contaminants come from:
  - Industry
  - Stormwater runoff
- Chemicals of most concern in mud/sediment



# Pollutants Above WA State Standards in the Duwamish River Sediments

Fecal coliform

Lead

Mercury

**Arsenic**

Cadium

Chromium

Copper

Silver

Zinc

**PCBs**

**Dioxins**

Furans

Phenol

Pyrene

Fluorene

Pentachlorophenol

N-Nitrosodiphenylamine

**Benz(a)anthracene**

**Benzo(a)pyrene**

**Benzo(b,k)flourathenes**

Benzo(ghi)perylene

Benzoic acid

Benzyl Acid

Benyl alcohol

Dibenzofuran

Diethyl phthalate

**Dibenz(a,h)anthracene**

Hexachlorobenzene

Di-n-octyl phthalate

Butybenzyl phthalate

Acenaphthene

Acenaphthylene

1,2,4-trichlorobenzene

1,4-dichlorobenzene

2,4-dimethylphenol

2-methylnaphthalene

**Indeno (1,2,3-cd)pyrene**

**Chrysene**

Phenathrene

Anthracene

Flournthene

Napthalene

**Main contaminants of main concern**

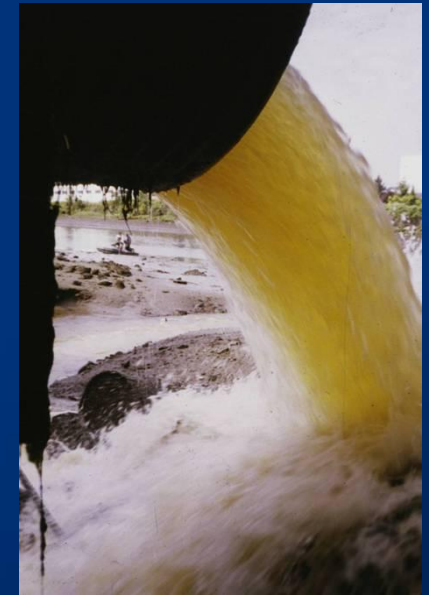
Above safe standards

# Health Advisories

**Do not eat** any crab or resident fish from the Duwamish River

**Limit consumption** of Puget Sound/Duwamish Chinook to one meal per week

Do not **swim** near a sewer/stormwater outfall within 3 days of rain



**WARNING**

Bottom-feeding fish, crab and shellfish may be unsafe to eat due to pollution.

El consumo de pescado del mar, cangrejos y mariscos puede ser peligroso debido a la contaminación.

Có thể không an toàn để ăn cá dưới đáy biển, cua và hải sản vô cùng vì ô nhiễm.

በታላቅ ስርዓተ-ሰሜን ምግብ ላይ ለመጠቀም አዎንታዊ ምርመራዎችን ያድርጉ።

由於污染，底棲魚、螃蟹和有殼水生動物可能食用不安全。

오염으로 인해, 바닥 어류, 게 및 조개를 섭취하는 것이 해가 될 수 있습니다.

В связи с загрязнением среды рыбы, которые обитают на дне, а также крабы, моллюски и ракообразные могут быть небезопасные для употребления в пищу.

For More Information Call Toll-Free Seattle Number 1-800-562-5632  
Fish Advisory Number 1-877-485-7316

Health Contact Local Health Agency at: (206) 246-4637  
[www.doh.wa.gov/ehp/rd/fishadvis.htm](http://www.doh.wa.gov/ehp/rd/fishadvis.htm)  
[www.doh.wa.gov/ehp/sehan/EHA\\_fish\\_advis.htm](http://www.doh.wa.gov/ehp/sehan/EHA_fish_advis.htm)

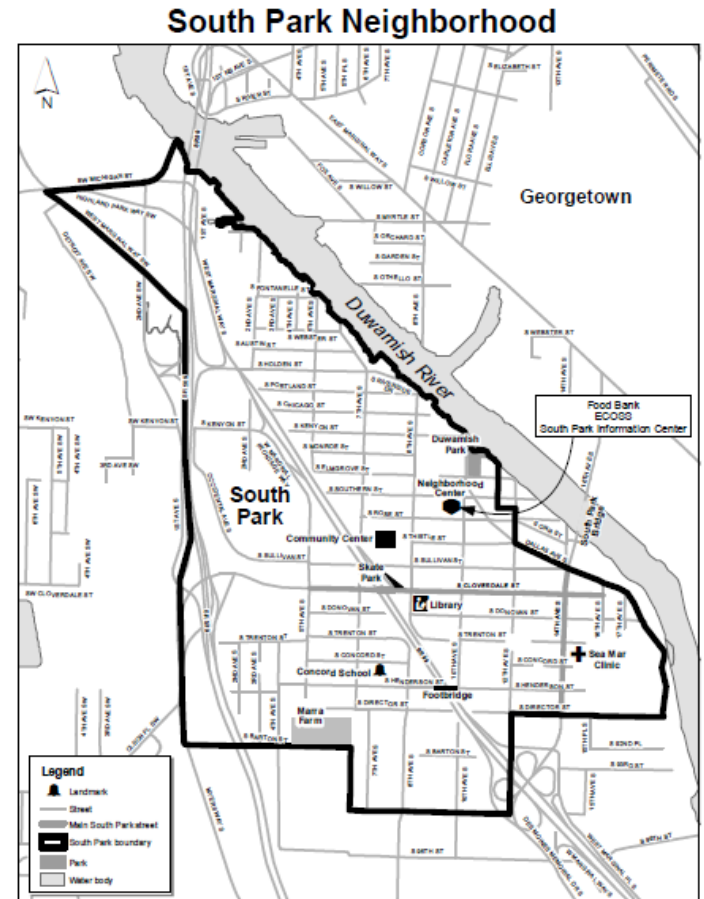
**WARNING**

Possible Sewage Overflows During and Following Heavy Rain

Questions? Call: 206-205-1151 Regarding CSO **KO42**



# South Park residents: Assets and challenges



housing



# Georgetown residents: Assets and challenges



# Duwamish Valley Disparities

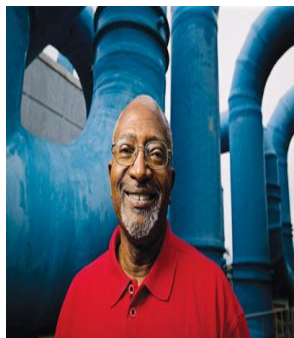
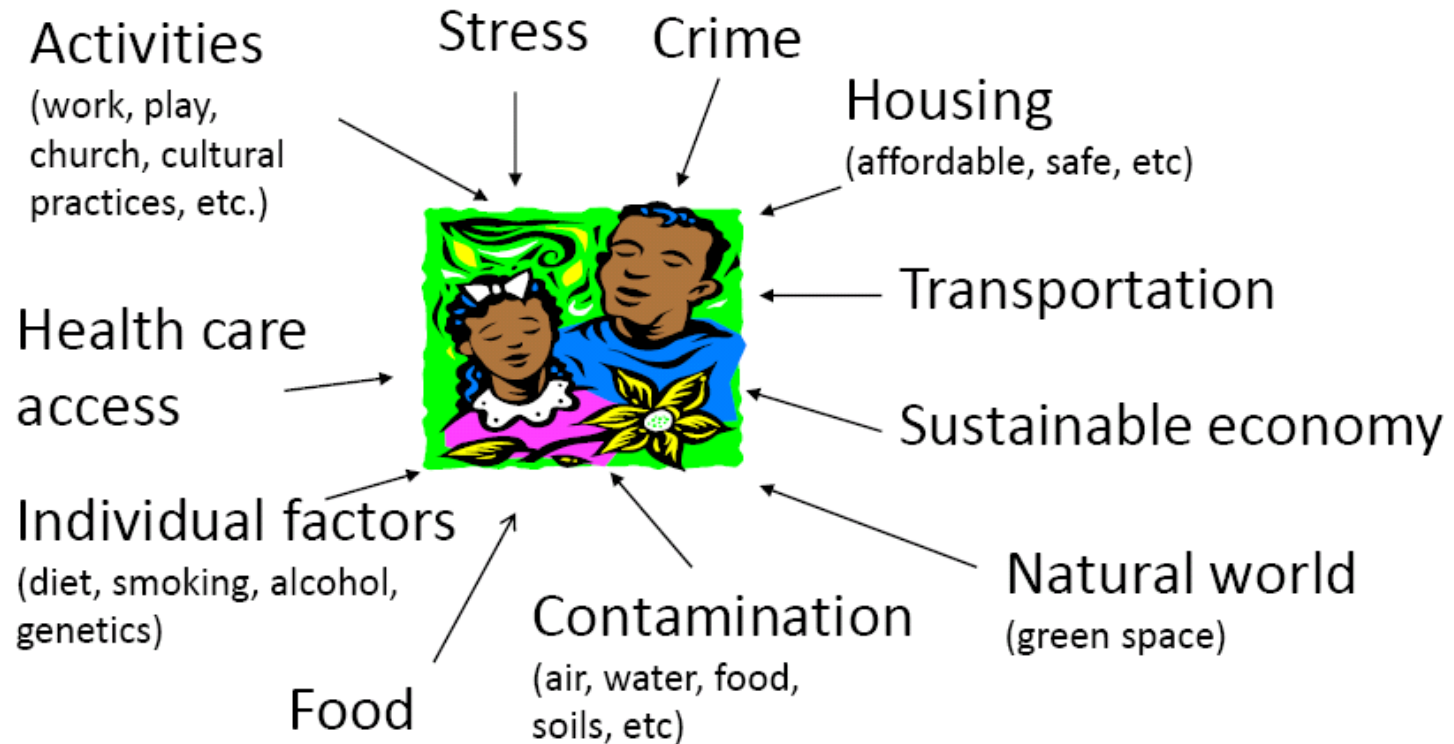
Indicator	Duwamish Valley	King County
Life expectancy*	79.4	81.3
% below poverty**	17.6%	9.7%
Foreign born**	31.9%	19%
No high school degree**	20.2%	8.2%
Uninsured*	20%	13%
Lung cancer*	52.3 per 100,000	41.4 per 100,000
Homicide*	10.5 per 100,000	3.4 per 100,000
Asthma hospitalization*	240.4 per 100,00	143.4 per 100,000
Assault*	70.9 per 100,00	31 per 100,00
Low birth weight*	6.0%	4.9%
No leisure time physical activity*	24%	15%

Source: Public Health Seattle & King County.

\* p=.05; \*\*p=.10



# ENVIRONMENTAL JUSTICE

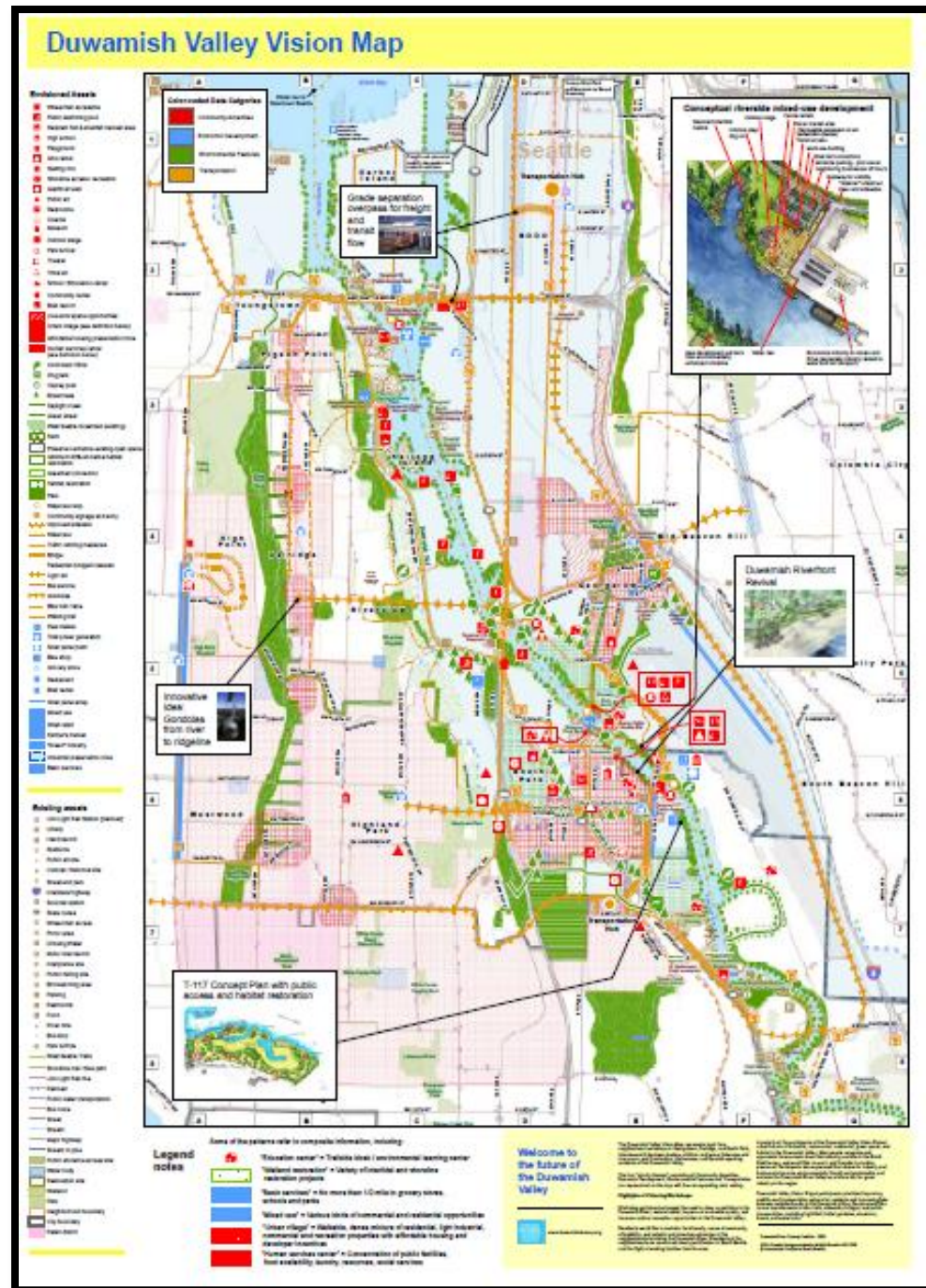
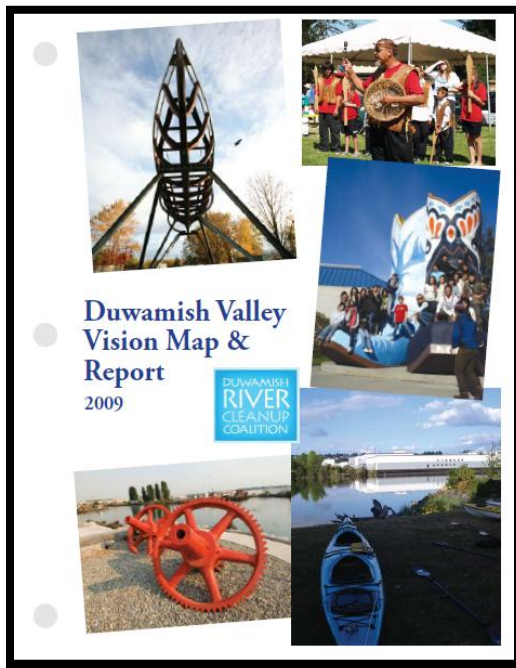


***“The environment is everything: where we live, work, play, go to school, as well as the physical and natural world. And so we can’t separate the physical environment from the cultural environment.”***

*(Robert Bullard, 1999)*

# VISIONING the Duwamish Valley

Health as main outcome

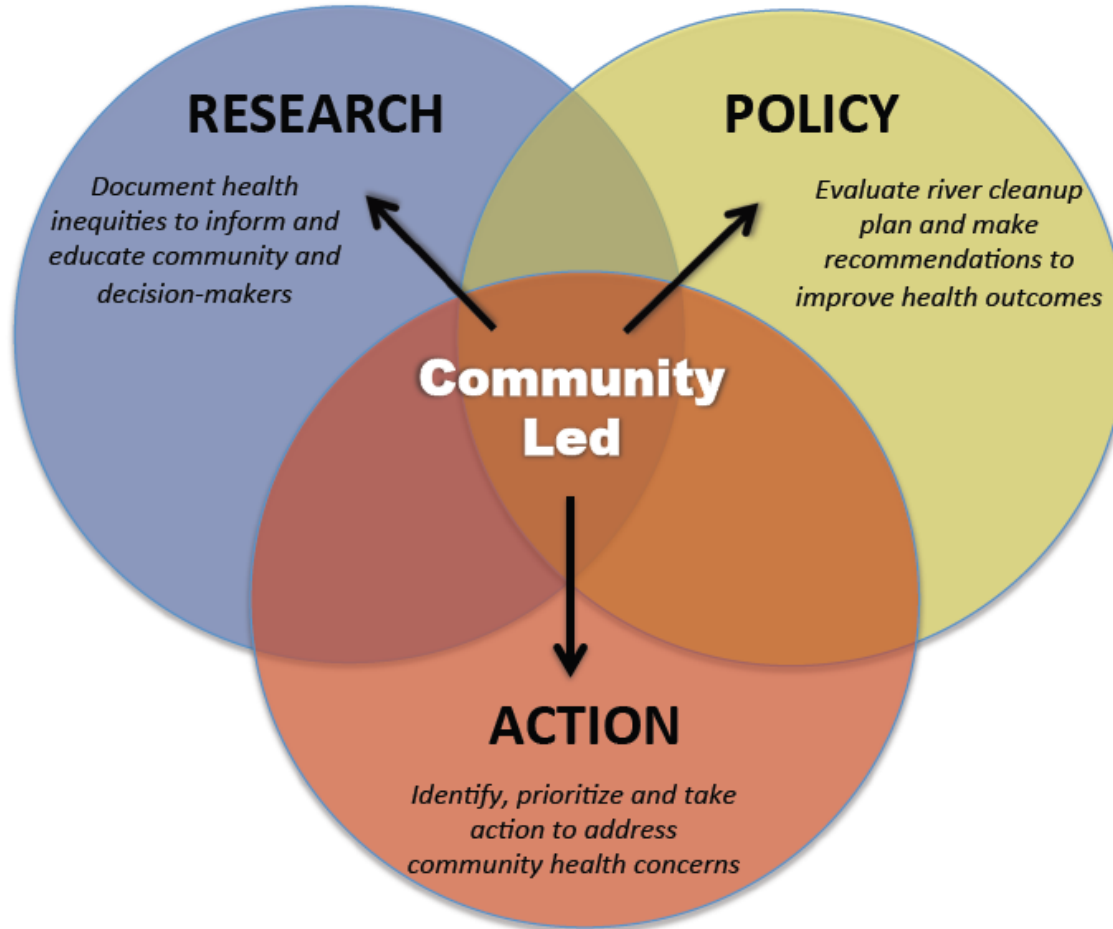


# Duwamish Valley Healthy Communities Project

*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)



# Who is involved in the 3 prongs?



BJ Cummings



Linn Gould



SCHOOL OF PUBLIC HEALTH  
UNIVERSITY of WASHINGTON

Bill Daniell

## RESEARCH PRONG:

EPA *Environmental Justice Research Grant*

## ACTION PRONG:

EPA *Community Action for Renewed Environment*

## POLICY PRONG:

Pew Charitable Trust/Robert Wood Johnson Foundation  
*Health Impact Assessment*





# Research - CHIA

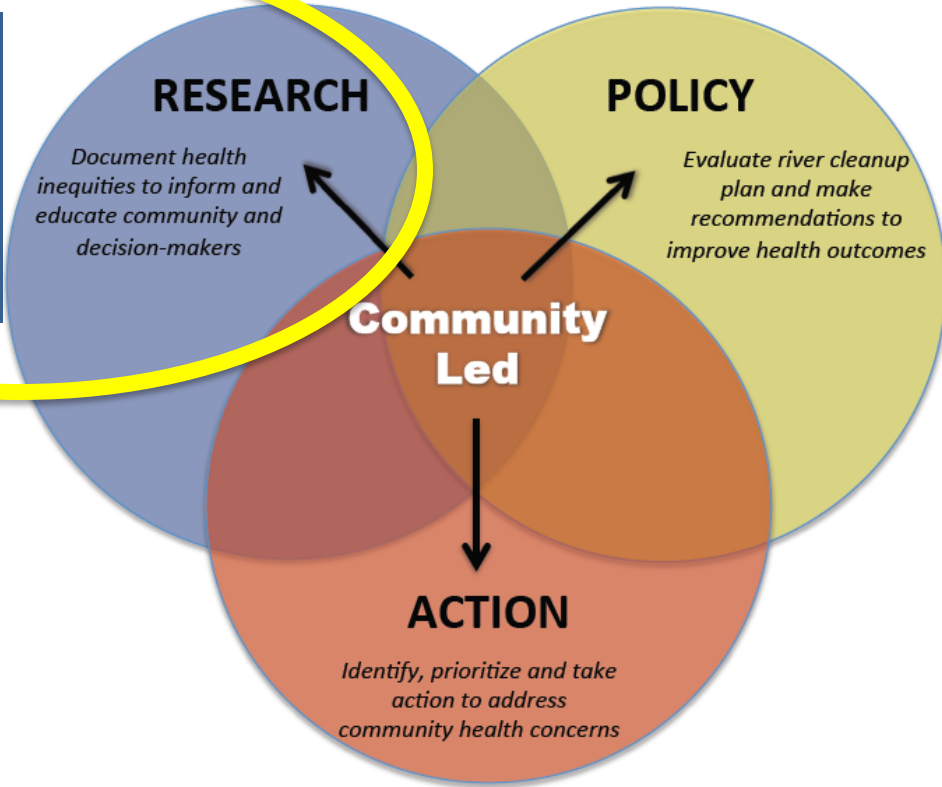


## Duwamish Valley Healthy Communities Project

*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)

# Research: Seattle Cumulative Health Impacts Analysis (CHIA)

*Any exposures, public health or environmental effects from the **combined** emission and discharges in a geographic area, including environmental pollution from all sources, whether a single or multi-media, routinely, accidentally, or otherwise released*

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



# Community Based Participatory Research: What are community health issues?



1. Community survey
2. Community mapping

Where is our  
community  
healthy?  
Unhealthy?

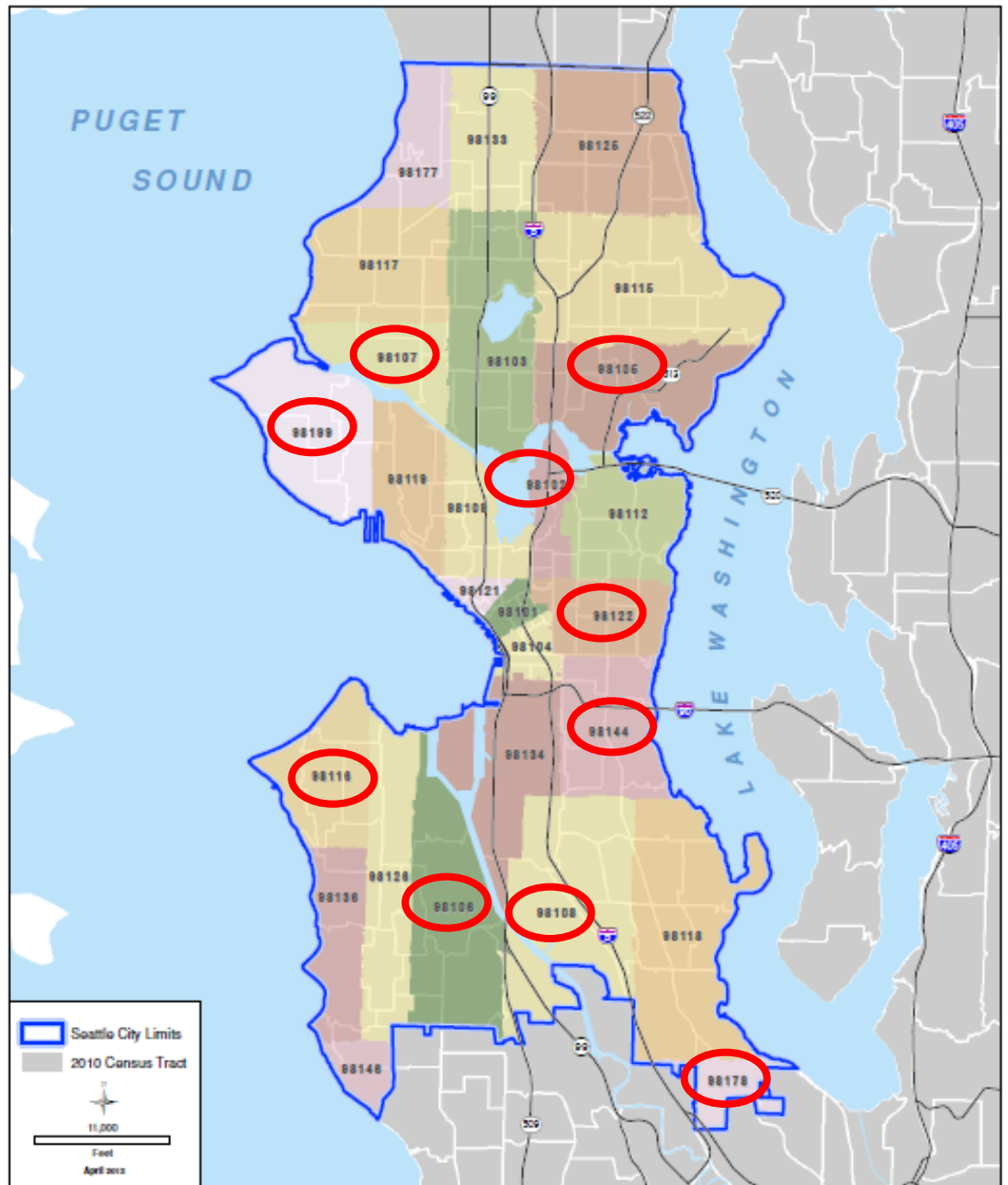


# CHIA Research:

Geographic unit of analysis – 10 ZIPs

Ranges of:

- Income
  - Minority
  - Pollution
- 
- Indicators from CBPR surveys



# Research CHIA

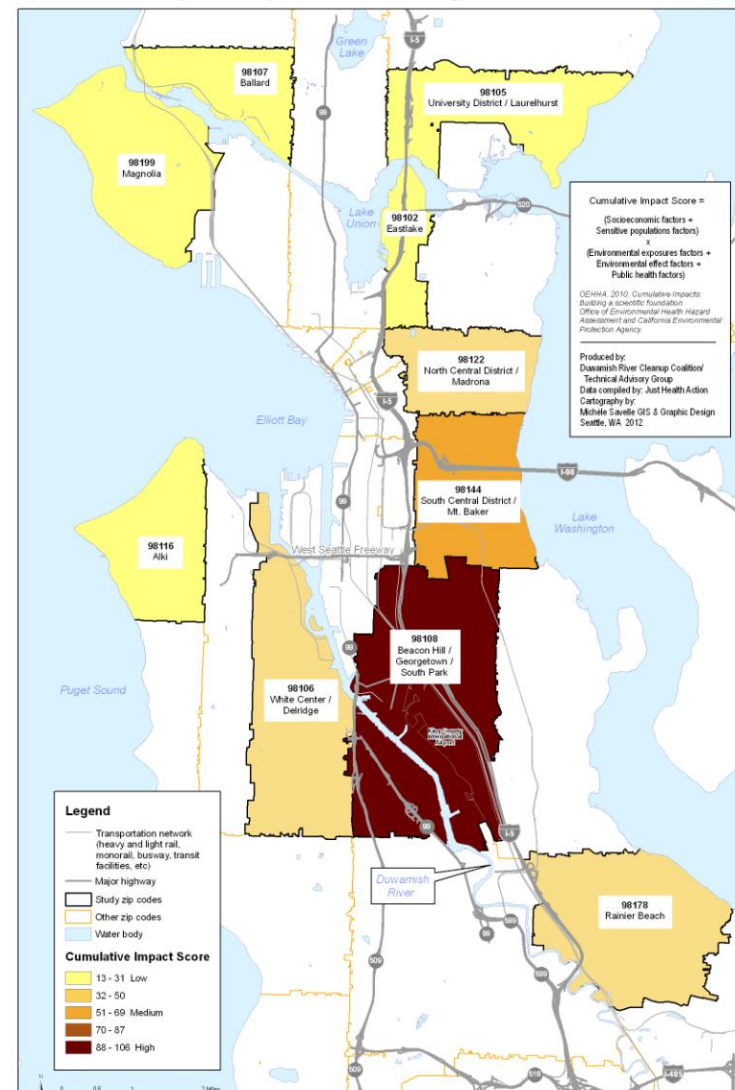
Component	Indicators	Range of Possible Scores
Socioeconomic factors	Poverty, education, minority	1-3
Sensitive populations factors	Age (<5, >65), foreign born	1-3
Environmental exposures factors	Air contamination (PM, Benzene), Contaminated site ranking	1-10
Environmental effects factors	Park area, tree canopy, # of Toxic Release Inventory sites	1-5
Public Health effects factors	Heart disease, childhood asthma, lung cancer	1-5
<b>Cumulative Impact Score</b>		<b>6-120</b>

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

# Research: Seattle Cumulative Impact Analysis Results

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

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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>

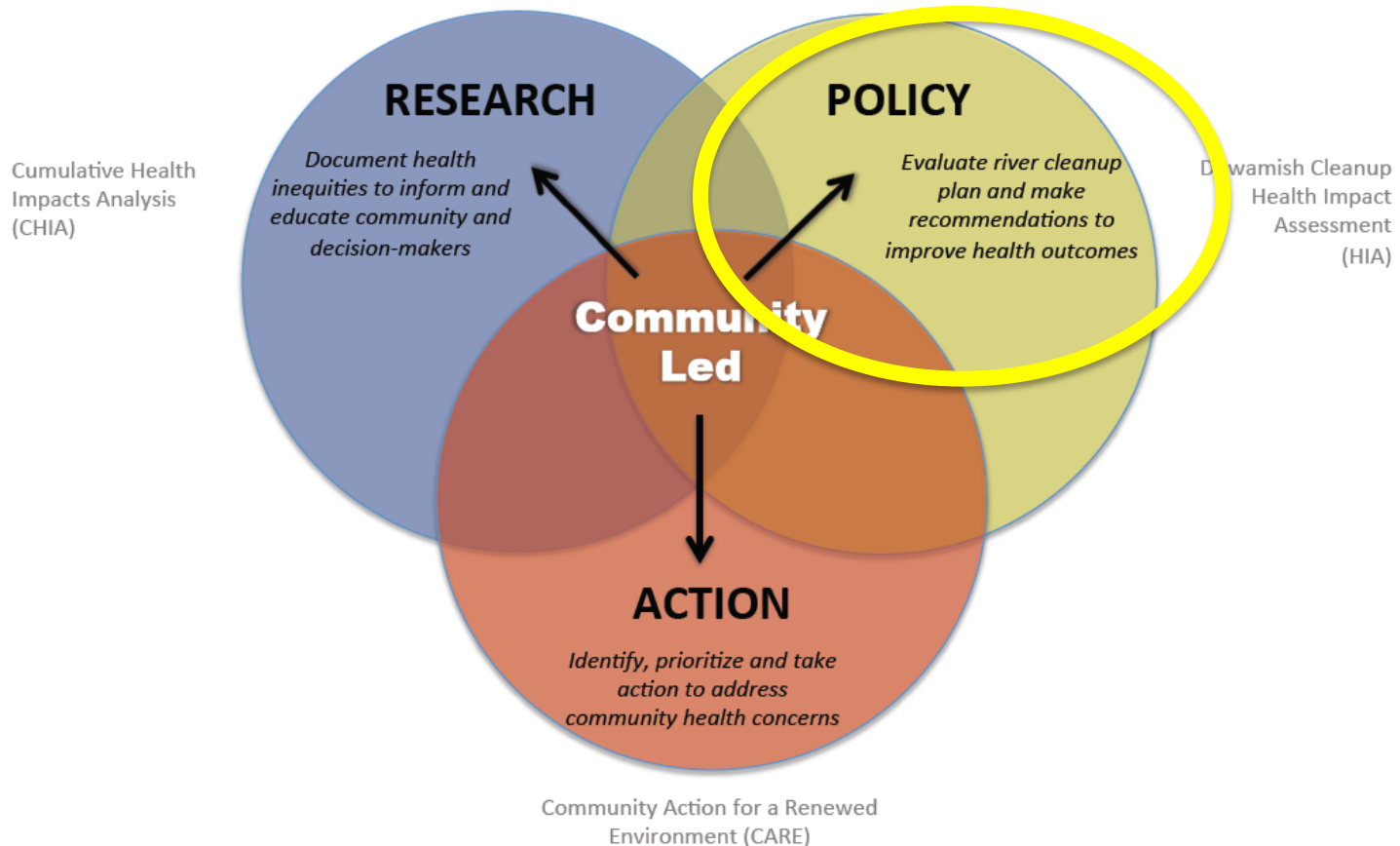


# Policy – Health Impact Assessment

## Duwamish Valley Healthy Communities Project

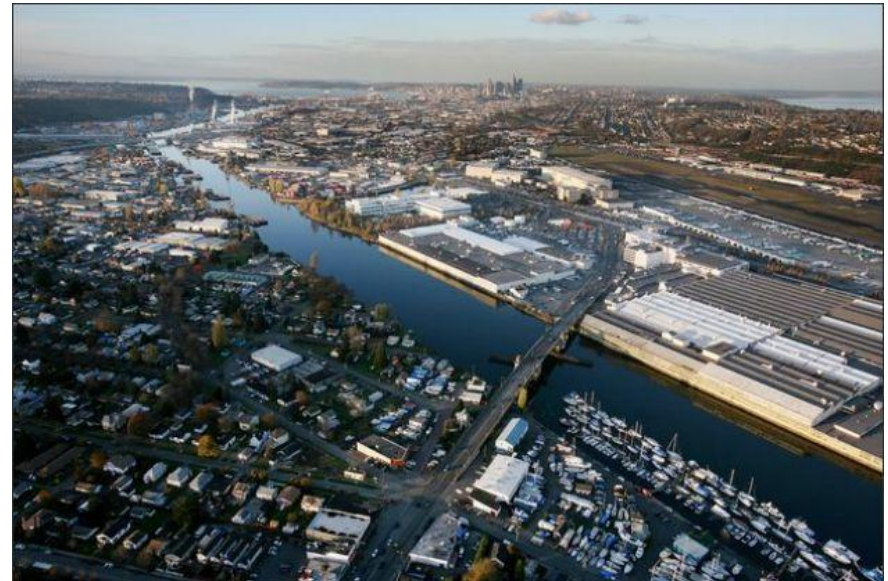
*Improving environmental and human health through*

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

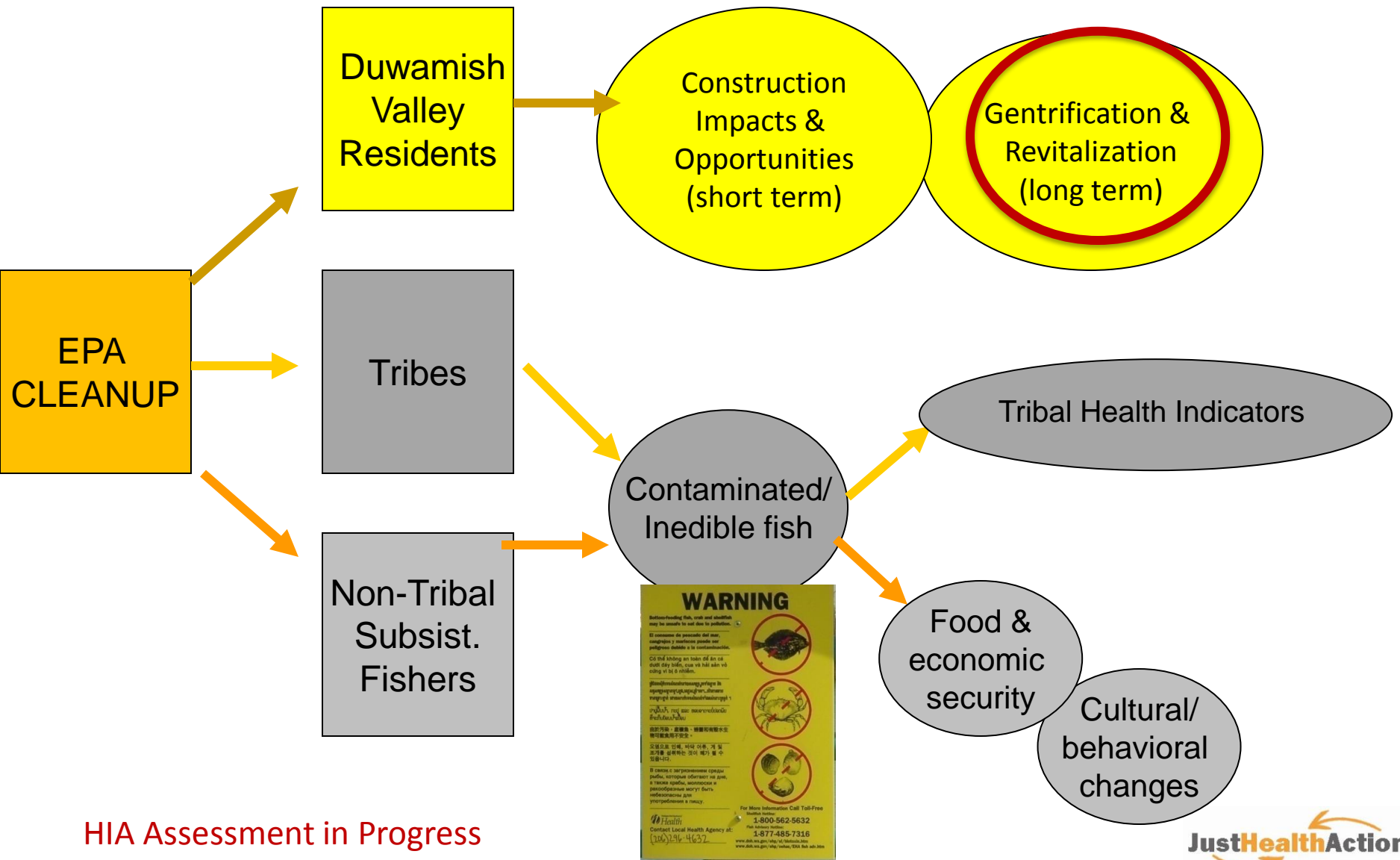


# Policy: Duwamish Superfund HIA

- ❖ Assessment:
  - Examine unintended health consequences of the cleanup of the Superfund Site.
  
- ❖ Recommendations:
  - Maximize benefits
  - Minimize undesirable, unintended impacts
  - Reduce inequities

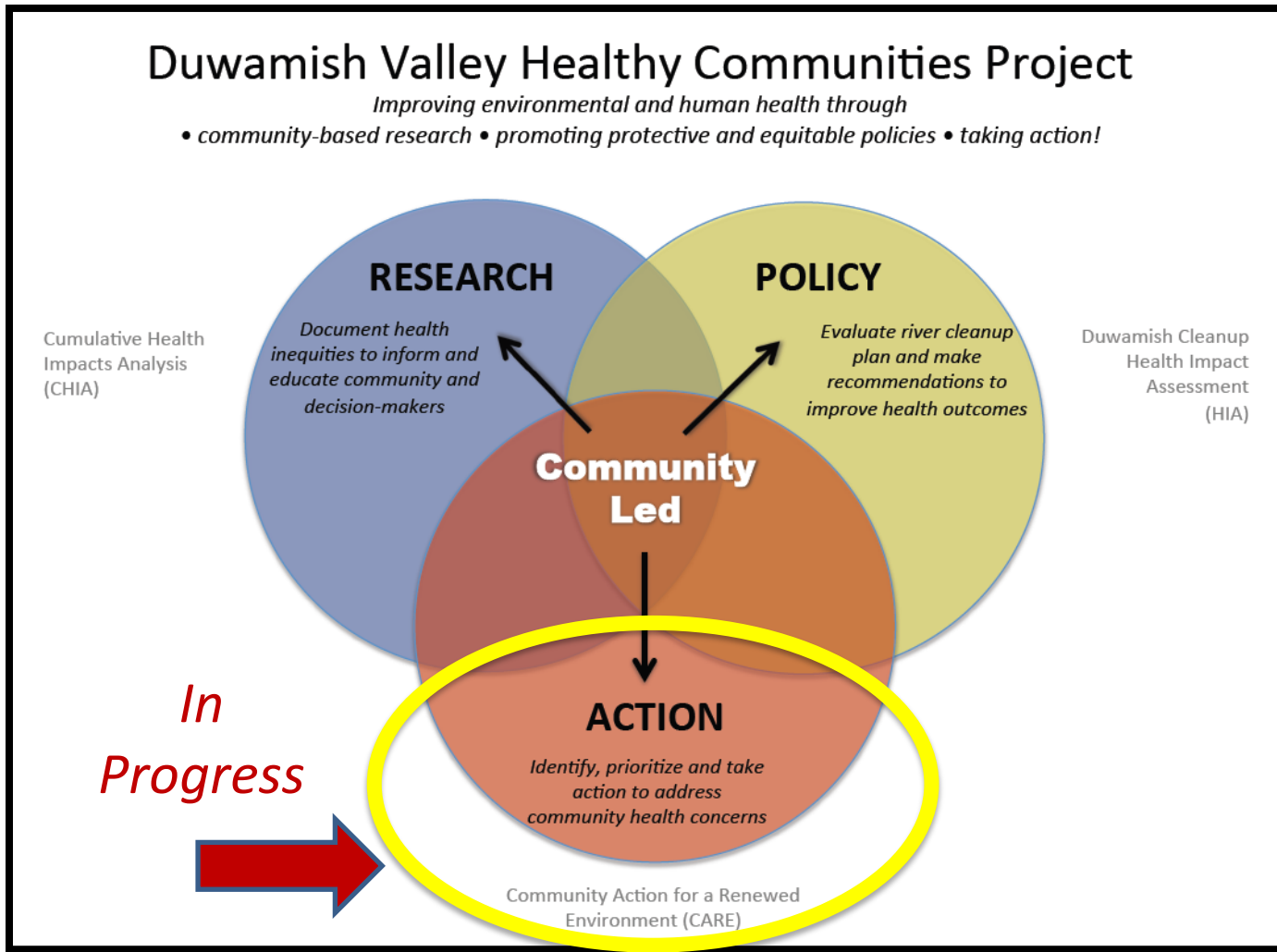


# Policy: HIA –Unintended health concerns NOT in the Superfund Risk Assessment



HIA Assessment in Progress

# Action – Community Action for Renewed Environment (EPA CARE)

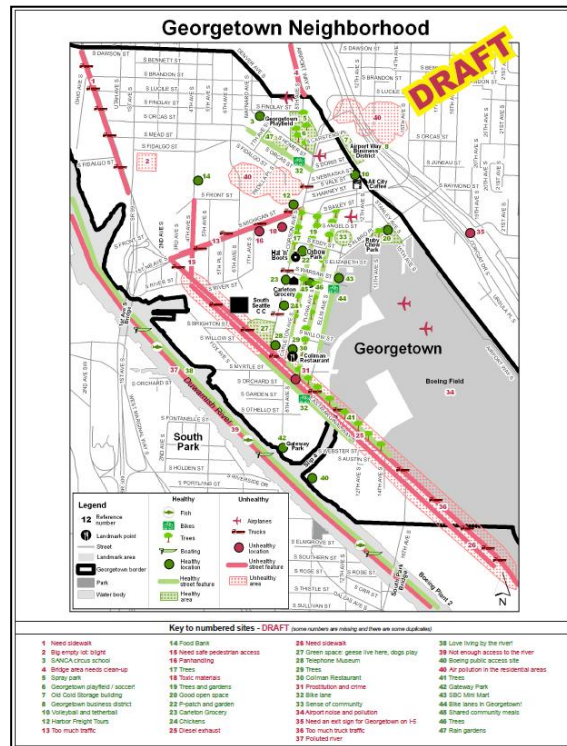




**WE GLADLY ACCEPT DUWAMISH DOLLARS**

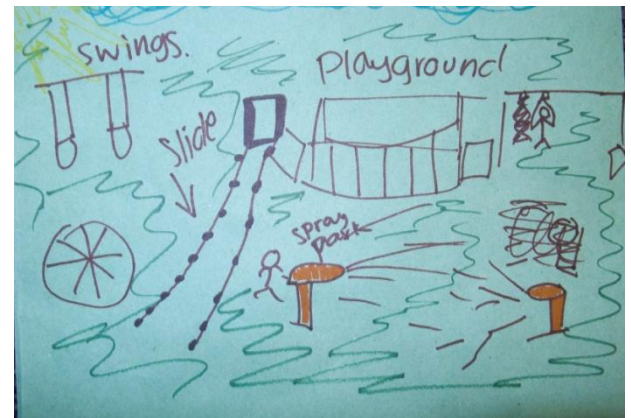


# CARE Prioritization Workshops



# UPCOMING: CARE Community Action

- RFP out to local community organizations
- Use prioritization workshops to develop action ideas
- \$50,000 (was \$250,000 but Congress cut funding)
- Implement within 12 months



# Taking Action Upstream



Government  
Academic  
Businesses  
Community/Non-Profits

# Success/challenges/recommendations

	Three pronged Approach
Success	Synergistic – share work, share resources, reduce repetition, reduce competition between non-profits
Challenge	Some work not shared which caused repetition (schedule, permission to share not granted)
Recommendation	Trust building – EJ definition

## Duwamish Valley Healthy Communities Project

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# Success/Challenges/Recommendations

	Communication between “projects”
Success	Communicate multiple pieces of information in fewer community settings reduces community fatigue
Challenge	Other projects outside of our 3 pronged approach caused confusion (community surveys)
Recommendation	<ul style="list-style-type: none"><li>•Build in meeting times with other projects</li><li>•Collaborative agreements</li><li>•Helps to have local government as partner</li></ul>

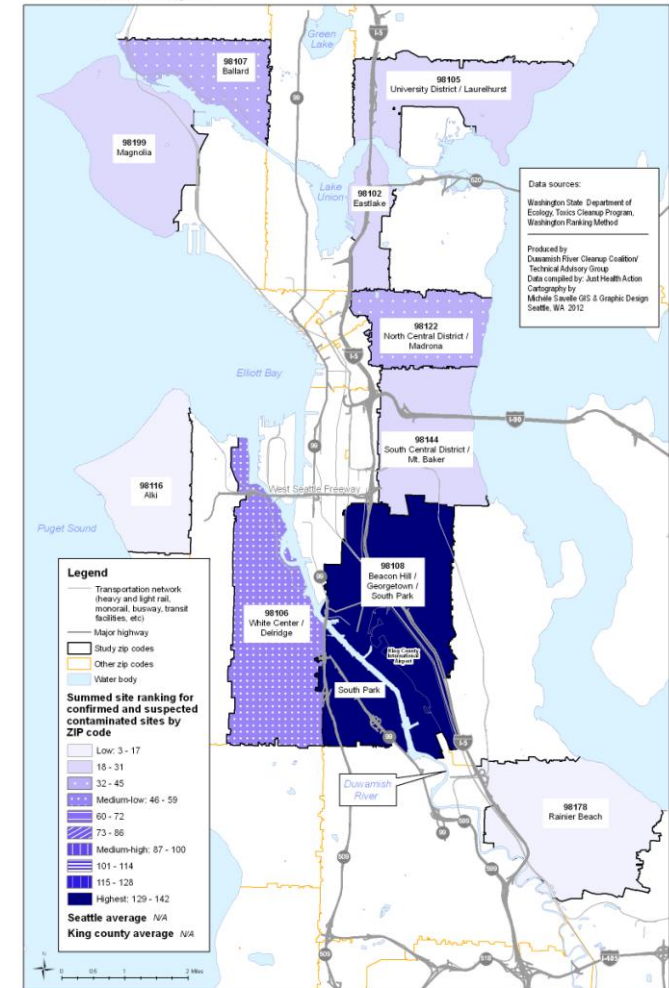


# Successes/Challenges/Recommendations

	Communication of health information
Success	<ul style="list-style-type: none"> <li>•Combine community expertise with research to obtain data that community wants.</li> </ul>
Challenge	Information is depressing
Recommendation	<ul style="list-style-type: none"> <li>•Community assets are important to discuss</li> <li>•Assure that action will take place</li> </ul>



Figure 10. Summed Site Ranking for Confirmed and Suspected Contaminated Sites, by ZIP Code Seattle, Washington



# Success/Challenges/Recommendations

	Community Based Participatory Research (CBPR)
Success	<ul style="list-style-type: none"><li>•Exciting new methods developed/adapted</li><li>•Powerful information presented in culturally competent ways</li><li>•Money/jobs to the community</li><li>•Increases capacity, pride, empowerment to action</li></ul>
Challenge	<ul style="list-style-type: none"><li>•Time consuming and needs to have a follow up</li><li>•Categorizing information can be a little frustrating</li></ul>
Recommendation	<ul style="list-style-type: none"><li>•Mentors important</li><li>•Build it in!</li></ul>



# Thank You!

## Contact:

Linn Gould

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

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



BJ Cummings

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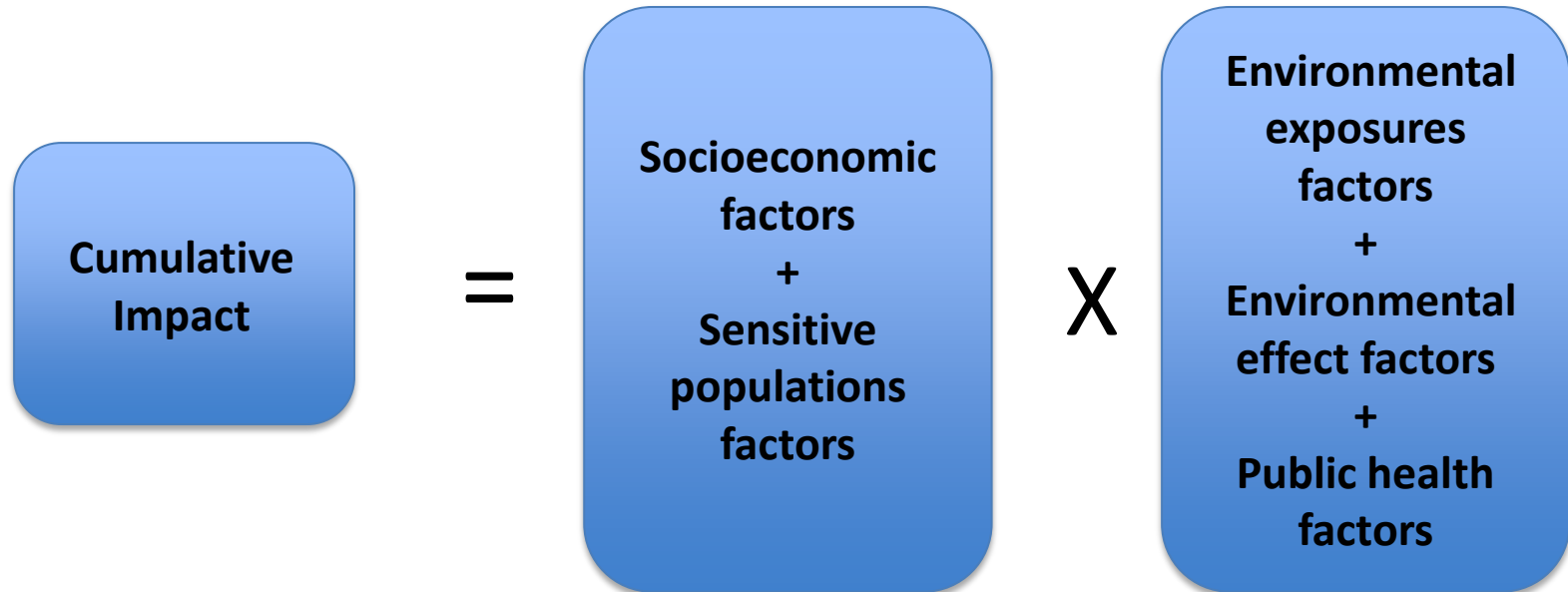




# Acknowledgements

- Paulina Lopez
- Alberto Rodriguez
- Alicia Moreno
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- Amber Lenhart
- Jonathan Childers
- Antioch University
- Youth in Focus

# Research: Seattle Cumulative Health Impacts Analysis (CHIA)

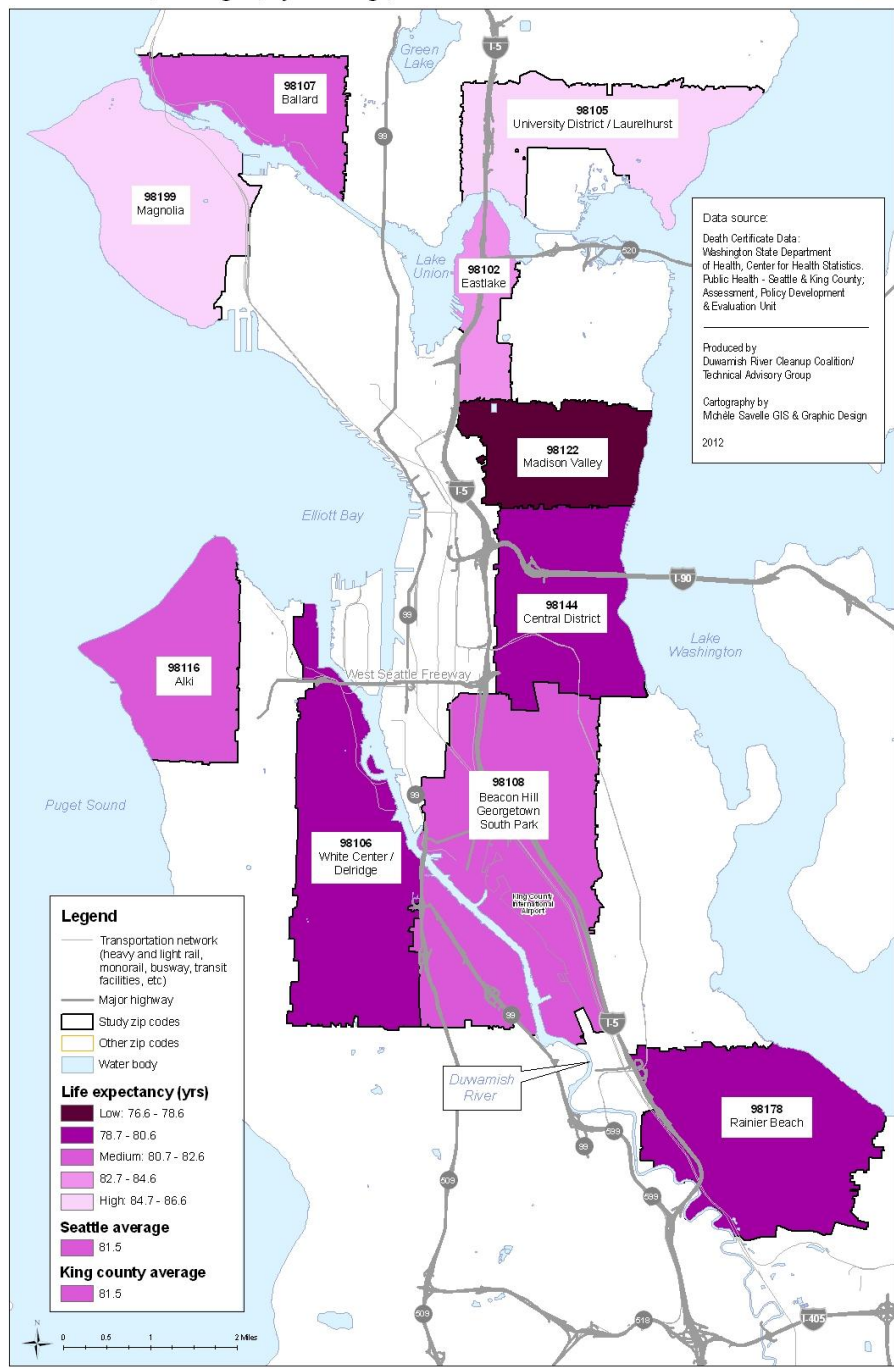


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Source: Cal/ EPA Cumulative Impacts: Building a Scientific Foundation, 2010

Figure A6. Life Expectancy at Birth in Years, by Zip Code  
Seattle, Washington, 5 year average, 2005-2009

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10/4/12



# Seattle CHIA ZIPS

98122      98105  
76.6      86.6

Your **ZIP code**  
shouldn't determine  
**how long you'll**  
**live**

