OCEAN VIEW GROWING GROUNDS

Urban Agriculture and Food Disparities: Eliminating Superfund toxicants at the food-water nexus in disadvantaged neighborhoods

Growing community through food

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UC San Diego Superfund Research Center, The Global Action Research Center; and The Bioregional Center for Sustainability Science, Planning and Design
THE PROBLEM: People living in disadvantaged neighborhoods with high levels of obesity, poverty, poor nutrition, health disparities, and exposures to environmental toxicants are subject to "cumulative impacts" that put them at greater risk for illness and cancer.

THE SOLUTION: (1) Promote knowledge and understanding of how cumulative risks (e.g., obesity, poor nutrition and exposure to toxicants) impact human, and (2) Intervene, using this knowledge, to engage residents in transforming their neighborhoods into healthy places.
Ocean View Growing Grounds (OVGG) Community Garden (20,000 sq. ft.)

4540 Ocean View Blvd.
Southeast San Diego, California

Map: Pueblo watershed (blue-grey polygon) within which sits the neighborhoods of Southeast San Diego, City Heights, Golden Hill and Mid-City Eastern (light blue polygons). These neighborhoods contain 810 vacant lots (shown as yellow polygons), one of which is the lot being transformed into the OVGG community garden and food forests. Chollas Creek is shown as a blue line.
San Diego Vacant Lot Survey

University Avenue and 50th Street

Lot size: 0.16 Acres
Owner: City
Topography: Half of the lot is flat, but the other half is concaved down due to the sewage pipes.
Sunlight: Good sunlight can be achieved by trimming the trees in this area.
Soil: Upon our observation, there are rocks everywhere on this lot, showing that the soil underneath is very rough. Also, part of this lot is paved.
Electricity: It is possible to tap into the power of nearby residential buildings.
Visibility: undefined
Maintenance: There is a lot of garbage and there is graffiti on the sewage pipe concrete structure.
Fencing: There is no direct fence around the lot, however, the fences of the nearby buildings provide decent security.
Vehicle Access: The nearby street is wide enough for trucks to deliver necessary material for a garden.
Parking: There is space for parking on the residential street; however, we have to take into account the parking spaces available for both residents and community members.
Overall Rating: Fair
SB 535 “disadvantaged communities” : disproportionately affected by pollution
77% Hispanic community of approximately 60,000 people
Median income of less than $21,000.
38% live below the federal poverty level.
52% of the families with children under five live in poverty.
27%-34% of the children in the area are obese; Classified as a food desert;
Heather Henry, Program Administrator, Health Sciences Administrator, Morrisville, NC

Michelle Heacock, Superfund Research Program, Morrisville, NC, mheacock@atsdr.cdc.gov

Who We Are

Our Brownfields and Reuse Opportunity Working Network (BROWN) is composed of experts from these agencies and fields:

- Agency for Toxic Substances and Disease Registry
- U.S. Environmental Protection Agency
- State Health Agencies
- Local Health Agencies
- Academia
- Agriculture/Urban Agriculture
- American Planning Association
- Brownfields Redevelopment
- Community Outreach and Education
- Economic Development
- Educational Film/Video
- Food Systems/Food Policy
- National Association of County and City Health Officials
- Smart Growth/Built Environment
- Technical Assistance to Brownfields
- Urban Planning

Heather studied plant-based environmental remediation (phytoremediation) and ecological restoration.

The Brownfields & Reuse Opportunity Working Network (BROWN) is a coalition of stakeholders with a wide range of expertise in redevelopment. These ATSDR partners help our National Brownfields/Land Reuse Health Initiative reach out to more communities to integrate health in redevelopment.
Phase I Environmental Site Assessment

Ocean View Property
4540 Ocean View Boulevard
San Diego, California

Prepared for:
University of California, San Diego
Superfund Research Center
Community Engagement Core
Research Translation Core

Prepared by:
Rincon Consultants, Inc.
November 8, 2013

Ocean View Growing Grounds
Downtown San Diego
Table 1. Classification, List and Project use of Superfund toxicants to be used in studies by the UCSD SRP

<table>
<thead>
<tr>
<th>Chemical Classes</th>
<th>Superfund Chemicals</th>
<th>Project Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Metal</td>
<td>As, Cd, Ni, Zn, Cr, Cu, Pb, Hg</td>
<td>1, 2, 3, 4, 5, 6, 7, 8</td>
</tr>
<tr>
<td>Nitrosamines</td>
<td>DEN</td>
<td>1, 4, 5</td>
</tr>
<tr>
<td>Organochlorides</td>
<td>CCl₄, CHCl₃, C₂HCl₃, C₂Cl₄, Chlordane</td>
<td>1, 3, 4, 5</td>
</tr>
<tr>
<td>Polycylics</td>
<td>PAHs, PBDEs, PCBs</td>
<td>1, 3, 6, 8</td>
</tr>
<tr>
<td>Dioxins</td>
<td>TCDD and derivatives</td>
<td>8</td>
</tr>
<tr>
<td>Organophosphates</td>
<td>Dieldrin, chlorpyrifos and congeners</td>
<td>3, 6</td>
</tr>
</tbody>
</table>

Common sources of soil contaminants

<table>
<thead>
<tr>
<th>Category</th>
<th>Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paint (before 1978):</td>
<td>lead</td>
</tr>
<tr>
<td>High traffic areas:</td>
<td>lead, zinc, PAHs</td>
</tr>
<tr>
<td>Treated lumber:</td>
<td>arsenic, chromium, copper</td>
</tr>
<tr>
<td>Burning wastes:</td>
<td>PAHs, dioxins</td>
</tr>
<tr>
<td>Manure:</td>
<td>copper, zinc</td>
</tr>
<tr>
<td>Coal ash:</td>
<td>molybdenum, sulfur</td>
</tr>
<tr>
<td>Sewage sludge:</td>
<td>cadmium, copper, zinc, lead, PBTs</td>
</tr>
<tr>
<td>Petroleum spills:</td>
<td>PAHs, benzene, toluene, xylene</td>
</tr>
<tr>
<td>Commercial / industrial site use:</td>
<td>PAHs, petroleum products, solvents, lead, other heavy metals</td>
</tr>
<tr>
<td>Pesticides:</td>
<td>lead, arsenic, mercury (historical use), chlordane and other chlorinated pesticides</td>
</tr>
</tbody>
</table>
FOCUS

Urban Gardening
Managing the Risks of Contaminated Soil
Disadvantaged Neighborhoods: Food Forests and the Water-Climate-Infrastructure Nexus

Food Forest Installation, 2014, Southeast San Diego
Pollution Burden:
- Ozone concentrations
- PM2.5 concentrations
- Diesel PM emissions
- Pesticide use
- Drinking water contaminants
- Toxic releases from facilities
- Traffic density
- Cleanup sites
- Groundwater threats
- Hazardous waste
- Impaired water bodies
- Solid waste sites and facilities

Population Characteristics:
- Children and elderly
- Low birth-weight births
- Asthma emergency department visits
- Educational attainment
- Linguistic isolation
- Poverty
- Unemployment

SB 535 Disadvantaged Communities in San Diego
Healthy Places
Healthy People
Healthy Communities
Community Engagement

Our community engagement activities give residents a voice in decision making regarding their personal health, their family’s health and the environmental public health of their community.
Global Action Research Center

Approach

The Global ARC approach to Community Engagement involves:

- Canvassing the neighborhood and identifying “Weavers”
- Listening to the resident’s issues and concerns
- Providing additional information/education on the issues that they are concerned about (e.g. Type of Toxicants in the soil)
- Providing leadership development training to the Weavers
- Support the creation of a governance structure necessary for sustaining the resident engagement (usually some sort of a neighborhood association)
- Facilitate a community planning process leading to the implementation of an intervention strategy.
Global Action Research Center Approach

This approach would also include:

- Ensuring that youth are included in the leadership development and community planning
- Ensuring that this group of neighborhood residents are networked with available resources outside of their neighborhood (university scientists, faculty and students; public officials; businesses; community-based organizations; similar efforts across the country; etc.)
Global Action Research Center Approach

This approach would also include:

- Ensuring that a bi-directional learning system has been established that makes sure that the science is communicated in a manner that the residents can understand and act upon it in a productive manner, and also captures the knowledge and innovation generated by the residents and that it is shared with the scientists and researchers.
Community Engagement for Health

In order to effectively address the serious challenges we face to creating healthy places, people and communities – we must establish partnerships with engaged residents, young and old.