Miramar Water Project
Today We'll Discuss

- Miramar's Water Shortage
- Miramar Water Project
- Local Project in Philadelphia
The Community

- Roughly 200 villagers displaced during El Salvadorian Civil War
- 35 households with around $10 a day income
- 2 public and 10 private hand-dug wells
The Need

- Water Shortage
- Water Contamination
- Poor Water Management
- Education
Project Goals

- Eliminate use of contaminated water
- Provide supplemental water during both rainy and dry seasons
Bio-Sand Filtration

- Concrete filters based on CAWST design
- To be built in country with help from community
- Costs $2 per household
Rainwater Catchment System

- Goal: catch and store rainwater during rainy season for supply during dry season
- Gutter system attached to roofs of houses
- First flush system into tank
Work So Far

- Direct contact with community and nearby entities
- Designs for bio-sand filter and catchment system
- Steel mold to practice construction of filters
- Filtration tests using Schuylkill River water
### Filtration Results

<table>
<thead>
<tr>
<th></th>
<th>ECP</th>
<th>RCCP</th>
<th>CCP</th>
<th>HSCCP</th>
<th>AC</th>
<th>EC/CCP</th>
<th>ELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Filtration</td>
<td>11</td>
<td>7</td>
<td>4</td>
<td>28</td>
<td>132</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>After Filtration</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

ECP: Enterobacteriaceae  
RCCP: Rapid Coliform  
CCP: Coliform  
HSCCP: High Sensitivity Coliform  
AC: Aerobic Bacteria  
EC/CCP: E. Coli  
ELP: Environmental Listeria

Also tested: Nitrates, Nitrites, Chlorine
June 2014 Trip

- Gather information needed for filtration and catchment system
- Establish personal connection with community
- Establish relationship with nearby city mayor
  - Procurement of materials for implementation
- Educate community
June 2015 Trip

- Fully build 5 filters
- Educate community
- Gather information for rain catchment systems
Urban Tree Connection

- Organization that runs network of urban gardens and farms, mostly on formerly vacant land
- Providing supplementary/easier/less costly/etc. Water supply for gardens
- Design and construct catchment structures to attach to rain barrels
- Project #1: Sickels St Garden
Urban Tree Connection
Thank You

- Questions?