Urban Agriculture Overlay District

Health Impact Assessment
UAO HIA Team Members

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Goal: Address the issues at multiple levels. Everyone has a role to play. We must “drill down” to get from policy to actual neighborhood transformation - “culture change and measurable outcomes”
HIA Definition

• A combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, program or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects.

International Association for Impact Assessment, 2006
How does the proposed project, plan, policy lead to health outcomes?
Through HIA report and communications
Judge health effects of a proposed project, plan or policy
Highlight health disparities
Provide recommendations
Raise awareness among decision makers and the public
Make health impacts more explicit

Through the HIA process
Engage & empower community
Recognize lived experience
Build relationships & collaborations
Improve the evidence
Improve transparency in decision making
<table>
<thead>
<tr>
<th>HIA Principle</th>
<th>An HIA should . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democracy</td>
<td>Involve and engage the public, and inform and influence decision-makers</td>
</tr>
<tr>
<td>Equity</td>
<td>Consider distribution of health impacts, pay attention to vulnerable groups and recommend ways to improve proposed decisions for affected groups</td>
</tr>
<tr>
<td>Sustainable Development</td>
<td>Judge short- and long-term impacts of a proposal</td>
</tr>
<tr>
<td>Ethical Use of Evidence</td>
<td>Use evidence to judge impacts and inform recommendations, not set to support or refute a proposal; be rigorous and transparent</td>
</tr>
<tr>
<td>Comprehensive Approach to Health</td>
<td>Be guided by the wider determinants of health</td>
</tr>
</tbody>
</table>
The HIA Algorithm

**Development phase for proposed plan, program, or policy**
- **Screening**
  - Quickly establish health relevance of the policy or project. Is HIA required?
- **Scoping**
  - Identify key health issues and public concerns.
- **Analysis**
  - Perform rapid or in-depth assessment of health impacts using available evidence and resources.
- **Reporting**
  - Make recommendations to ease negative and enhance positive health impacts.
- **Evaluation/monitoring**
  - Take action where appropriate, evaluate impact, and monitor implementation.

**Policy-implementation phase**
**Screening:**

- Establish health relevance of the project
- Determines the value of an HIA
Cuyahoga County will allow for the creation of a district that will permit intense urban agriculture uses in an urban environment:

- chickens
- bees
- livestock
- urban farm
- market gardens

Provide increased access to fresh produce for Cleveland residents. Particularly, low income minority residents in areas where access is currently limited.
Some neighborhood residents and City Council members have concerns about potential positive & negative impacts of potential agricultural uses.

Table: Potential Positives & Negatives
Goals of the UAO District HIA

1. Facilitate decision makers in determining most appropriate locations for the application of the UAO District legislation.
2. Elevate health and equity considerations by identifying key health determinants that can be addressed by the UAO legislation.
3. Inform the current legislation by identifying adverse health impacts and recommending mitigation strategies to alter identified impacts.
Scoping:
- Identify key health issues and public concerns
Common Health issues
Potential Health Determinants UAO HIA

- Employment
- Environmental Hazards
- Education
- Community Cohesion
- Quality Nutrition
- Preservation of Openspace
- Safety
- Noise, Odors, Waste
- Air Quality
- Soil Quality
- Empowerment
- Food Access

Cuyahoga County
UAO District Determinant Focus?
Analysis:

• Assess health effects.
• Provides an evaluation of potential health impacts.
Urban Agriculture Overlay (UAO) District

- Community Gardens, Green Houses, Hoop houses established
- Urban Farms established
- Market Gardens established
- Farm Animals/Bees/Live stock established
- Increased Access to Healthy Foods
- Vacant Lot Revitalization & Reuse
- Increased Agricultural Entrepreneurship/ Employment
- Increased Local food production

Increased Consumption of local healthy food:
- △ fresh fruits/vegetables
- △ honey
- △ eggs

Community Revitalization:
- △ Decreased blight
- △ Increased property values
- △ Increased green space
- △ Increased revenue
- △ Improved urban environments

Improved Mental Health

Improved Nutrition

Positive Economic Impacts

Decreased Obesity

Increased Social Cohesion

Increased Economic Impacts

Policy → immediate → intermediate → Long Term

Urban Agriculture Overlay (UAO) District – Food Access

- Health impacts of chronic disease includes: heart disease, diabetes, hypertension
Increase in land degradation, air and water pollution, and loss of biodiversity.

 Increased odors
 Increased noise generated by certain animals

 Increased in animal waste

 Increased infestation

 Decrease in neighborhood quality of life
 Decrease community perception by residents and visitors

 Increases in greenhouse gas caused by waste

 Increase degradation, air and water pollution, and loss of biodiversity

 Increase in infectious disease
 Potential Increased in negative impacts on nervous systems
 Potential skin irritation and exposure to possible carcinogens

 Unsanitary conditions

 Increase use of pesticides/insecticides/ herbicides/rodenticides/fungicides

 Urban Agriculture Overlay (UAO) District – Environment (Hazards)

- Health impacts of chronic disease includes: heart disease, diabetes, hypertension
Decrease in economic impact for lower income individuals

Increased cost of legal liabilities for property owner for new garden

Decreased security for established gardens

Limited understanding of the economic benefits of market gardens by local residents

Increased exposure to environmental hazards found in soil

Decreased sense of inclusion/feel as if they don’t have a stake in the growth of their community

Decrease in resources to manage and maintain garden

Increased cost to mitigate contamination

Decrease in economic impact for lower income individuals

Decrease in community participation (isolation)

Elevated exposure to contaminants primarily lead and arsenic

Increased stress

Depression

Urban Agriculture Overlay (UAO) District – Empowerment, Jobs & Safety

- Health impacts of chronic disease includes: heart disease, diabetes, hypertension
Methods for analysis

- Literature Review
- Surveys
- Mapping
Reporting - make recommendations to ease (mitigate) negative impacts and enhance positive impacts.
If the UAO district is established it is predicted that food accessibly will increase.
What is the current accessibility of Farmer’s Markets?

There are many high density areas that have poor access to a Farmer’s Market; lack of access is due to both location and hours of operation.

Finding
What are the locational barriers to participating in community gardens and farmer’s markets?

We surveyed 120 residents in the Buckeye neighborhood who represented low-income minority residents, primarily from Fairfax, Mt. Pleasant, Buckeye, and Shaker, from that survey we concluded that location was a larger problem for Farmers markets than for community gardens due to the saturation of community gardens throughout the city.
Do residents tend to use farmers markets to access fresh fruits and vegetables?

We surveyed 75 residents in the Buckeye neighborhood within a one-half mile radius of the Buckeye Urban Farm. We concluded that most people have shopped at a farmers market before. Although location was a factor for farmers markets, most people are accustomed to them and tend to access them when feasible.
Finding

Do residents tend to use community gardens to access fresh fruits and vegetables?

We surveyed 75 residents in the Buckeye neighborhood within a one-half mile radius of the Buckeye Urban Farm. Although 70% of the residents surveyed said that they have shopped at a farmers market, 60% of those residents have never been involved in a community garden.

4. Have you ever been involved in a community garden?

- Yes: 39.2%
- No: 60.8%
Finding

AREAS WITHIN 1/2 MILE OF GARDEN, FARM, OR FARMERS MARKET

- FARMERS MARKETS
- URBAN FARMS
- COMMUNITY GARDENS
- AREAS WITHIN 1/2 MILE OF URBAN FARM
- AREAS WITHIN A HALF MILE OF COMMUNITY GARDEN
- AREAS WITHIN 1/2 MILE OF FARMERS MARKET
Recommendations

- Identify high-density areas and encourage the development of more farmers’ markets, thereby increasing the accessibility for more residents to locally grown fresh fruits and vegetables. *(zoning/site selection)*
- Within the UAO District couple with wrap around services (funding, business development support) to incentivize farmers markets located within the district to provide more convenient hours & locations for residents in surrounding neighborhood. *(programmatic related)*
- Identify transitional neighborhoods where vacant land is abundant with a fair housing market whereby the presence of the UAO District can have positive market impacts for adjacent homeowners. *(refer to market typology and vacant land map) (reference study) (Zoning/site selection)*
If the UAO district is established it is predicted that there will be an increase in exposure to environmental hazards.
What are the current environmental hazards in soil as related to agriculture in Cleveland?

Lead, Arsenic, Barium, and Cadmium are the most prevalent hazards in soils in Cleveland. Additional contaminants due to historic industrial use are more prevalent in Cleveland Brownfield sites.

Finding
Do not target UAO districts on current brownfield sites unless previously assessed and cleaned: high contamination (for known brownfield areas in the city, begin phyto-remediation immediately. These could be potential sites for UAO district in future). (Zoning)
• Identify previous uses in an area and complete soil testing before designation is established to ensure appropriate soil amendments or mitigation strategies are used if needed. (Zoning)

• Make a booklet with background upper limits based on guidance from EPA and OEPA for contaminants in each area. (guidance booklet) (Programmatic)

• Recommend that soil amendments are used within the UAO district to facilitate remediation of lands found to have manageable levels of contamination. (Zoning)
What are the type of complaints that people have about urban farm animals/ how do they relate to current licensing?

Currently, the number and location of complaints are uncorrelated to the number and type of licenses in the area. Most complaints concern unlicensed animals.
Currently there are no license requirements for Roosters and Goats however with the UAO District individuals will be allowed to have them which makes it more important for the enforcement of current licensing requirements within the district.
- Ensure all UAO Districts enforce current animal licensing requirements. *(Licensing)*
- Step up enforcement by environmental health personnel (CDPH) at the creation of all new UAO districts and provide ongoing monitoring. *(Programmatic)*
Finding

What types of mitigation efforts have been applied in other cities to decrease the impacts of composting?

Many cities have created extensive regulations in regard to composting within the city. These regulations concern: setback from street, container type and size, ingredients, pest control etc.

For example: CITY OF CHICAGO, IL CHAPTER 7-28 : HEALTH NUISANCES 7-28-715; City of Minneapolis Backyard Composting Ordinance: Ordinance 244.770.
• Establish new composting standards for the UAO District. (Zoning)
• ‘Composting shall be conducted in a manner that controls odor, prevents infestation and minimizes run-off into waterways and onto adjacent properties. Composting may not be conducted for sale unless permitted by underlying zoning.’ (Proposed UAO District Ordinance - Chapter 336-A)
• In UAO districts encourage farms within the district to consolidate organic waste and composting operations in a central location. (Programmatic)
• Poor water quality mitigation for standing water: (use current Health Code standards: Health Code Ordinance Chapter 203.06 for nuisance abatement and property nuisance Chapter 209.01) (http://www.clevelandhealth.org/Enviroment/EnviromentalHealthInvestigations/StandingWater.html) (Zoning)
• Require that stormwater management techniques be used to address standing water. give example (programmatic)
Finding

What causes outbreaks of zoonotic diseases as related to animal exhibits and farm life?

People who have the highest risk of zoonotic diseases are those who come into contact with the animal directly, though contaminated water and feces are also an issue. In addition to the problems the livestock themselves pose, other nuisance animals such as raccoons and geese also possess a large threat to the health of those they come into contact with.
• Use fencing and other mitigation techniques to minimize contact with nuisance animals (e.g. Raccoons) (Zoning)
• Discourage migrating birds from settling on farm
• Quarantine new fowl from existing stock for a few days and import stock from registered operations per ODA recommendations
• Ensure that hand washing/sanitation stations are present on all urban farm sites within the district where livestock is present.
• Restrict petting zoos within district to decrease potential for zoonotic diseases caused by human contact with animals.
• Follow USDA guidance regarding Good Agricultural Practices for any commercial food production arising from agricultural activities.
Finding

What are the potential risk of carcinogen exposures related to agriculture?

Increase use of pesticides/insecticides/ herbicides/rodenticides/fungicides were identified as known carcinogens associated with agricultural uses.
• Limit the use of pesticides and other known carcinogens within the UAO District requiring that alternative practices be used to control pests (**Programmatic**)

• Provide informational material to farm operations within the district on Integrated Pest Management (IPM) and other biological and cultural controls that minimize pests, vermin, and weeds. (**Programmatic**)
Empowerment

If the UAO district is established, there could be a change in employment and community building opportunities.
What is the effort and cost to open an urban farm? Is there an interest by residents in low-income, minority communities?

The Urban Farmer’s Survey showed that the start-up costs, in addition to lack of knowledge about how to farm, are a major barrier to beginning an Urban Farm. In a survey conducted at the Buckeye Festival, the residents showed a definite interest in Urban Farming as a source of income.

<table>
<thead>
<tr>
<th>Urban Farm #</th>
<th>Start-up Costs</th>
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<tbody>
<tr>
<td>1</td>
<td>$5,000</td>
</tr>
<tr>
<td>2</td>
<td>$3,000</td>
</tr>
<tr>
<td>3</td>
<td>$250,000</td>
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<tr>
<td>4</td>
<td>$1,000,000</td>
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<tr>
<td>5</td>
<td>$10,000</td>
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<tr>
<td>6</td>
<td>$13,000</td>
</tr>
</tbody>
</table>

On a scale of 1 to 5—where 1 is not interested and 5 is very interested: How interested would you be in gardening or farming as a source of income?
Establish an incubator plot program within the district designed to educate community residents who are interested in taking advantage of the economic benefits associated with urban farming. *(programmatic)*

Require that a certain percentage of city owned land-bank lots within the district be designated for incubator plots. *(zoning)*

Provide local growers who participate in an incubator plot program access to grants (i.e. Gardening for Greenbacks), and other micro-enterprise supports for start-up and opportunities for land-acquisition via the city land bank. *(programmatic)*
Do residents in low income minority communities of Cleveland currently grow their own food? What are the barriers to them growing their own food?

We surveyed 120 residents in the Buckeye neighborhood who represented low-income minority residents, primarily from Fairfax, Mt. Pleasant, Buckeye, and Shaker, from that survey it is evident that the major barriers to participation in gardening is lack of gardening education, lack of time, location, and lack of awareness.

**What are barriers to participation in gardens?**

- Don’t know how to garden: 23%
- Don’t have time: 31%
- Unaware of it: 16%
- Do not feel welcome: 9%
- Location not close: 18%
- Just not interested: 3%
• **Gardensoxx Garden**- work with farming operations within the district through (CDCs) to deliver gardensoxxs as demonstrated in the Buckeye HEAL Initiative, to residents at their home to make gardening easier and less time consuming. *(programmatic)*

• **Signage**- Upon district establishment ensure that adequate signage and district names are established for each of the districts so that people can become familiar with the district as a place. This can include: banners, ground signs, or decorative signs. *(Zoning)*

**Recommendations**
Finding

Where do people go to get fresh fruits and vegetables in low income minority communities?

We surveyed 120 residents in the Buckeye neighborhood who represented low-income minority residents, primarily from Fairfax, Mt. Pleasant, Buckeye, and Shaker. Of those residents surveyed most get fruits and veggies at a large grocery store, though a significant portion (24%) shop at a Farmer's Market. Only 2% went to a corner store- possibly because fresh produce is not available at most corner stores.
• Target corner stores within the area of district designation to encourage them to purchase fresh fruits and vegetables from UAO District area farms (Cleveland Corner Store Project) (programmatic)

• Create incentives for corner stores to purchase fresh produce from businesses within the district and make it more readily available to low-income, minority residents. (programmatic)
What are the # of volunteers on a farm? What are the benefits of working on an urban farm?

From the Urban Farmer’s survey we conducted, there were no standard # of employees. However, there are several training programs in low income neighborhoods, more and more low-income minority people are being trained in urban agriculture and business practices.

The benefits of having a full time job include less stress, a lower risk of limiting illnesses, and lower risk of depression.
• Require that agricultural business that desire to located within the district employ, train, or educate residents directly from the surrounding community to ensure inclusion in the process. (programmatic/zoning)
Finding Where and how do urban farms sell their produce?

For most urban farms, farmer's markets, farm stands, local restaurants, and CSA's (Community Supported Agriculture) are the easiest point of entry for smaller farmers. Selling to grocery stores, chain restaurants, and institutions can be challenging for small farmers due to national distributor contracts, high volume of product needed, liability insurance and third party certification requirements.

What types of markets do you make retail sales to?
Please check all that apply.

- CSAs
- Farmer's Markets
- Farm stands
- Restaurants
- Grocery stores
- Public institutions

Cuyahoga County
• Note: According to “eight ideas for vacant land reuse in Cleveland” most produce travels 1500 miles or more from the farm to the marketplace this trip distance creates additional cost for retailers.

• Work with retailers in close proximity to the UAO District to promote the indirect benefits of buying from local farms highlighting the following:
  – Supporting the local economy by buying locally will establish a more loyal customer base.
  – Avoids the support of petrochemical industries
  – Provides support for local agriculture businesses
  – Reduces fuel consumption required to transport produce from farm to marketplace.
  – Customer commitment to purchasing local foods (Programmatic)
Evaluation & monitoring-
Monitor implementation or application of the district. Establish indicators to monitor impacts on identified health determinants and outcomes. This will provide the evidence that the activities resulting from the legislation creates the desired desired impact.

Develop checklist for siting the UAO District:
• District size –articulate range of specifications
• District signage- specifications
• Identify uses within the district
• Waste mitigation strategies
• Programmatic activities
District siting options: The UAO district should be sited in locations that provide:

- Large tracks of vacant land
- Close proximity to underserved areas of the city that lack healthy food options
- Lower income minority communities with higher levels of Poverty yet dense communities
- Each district should contain at least one farmers market
- Districts should be discouraged in known brownfield sites unless cleaned prior to district establishment
- Should consider the use of some openspace areas in unique cases (otter as example)
- Proximity to transit rail, bus, bycicle
- Proximity to schools and retail areas
**Base Concept:**

<table>
<thead>
<tr>
<th>Estimated Stormwater Runoff Capture (MG)</th>
<th>Estimated CSO Reduction (MG)</th>
<th>Construction Cost</th>
<th>Construction Cost/ CSO-Gallon</th>
<th>Project Cost</th>
<th>Total Cost/CSO-Gallon</th>
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</thead>
<tbody>
<tr>
<td>11.80</td>
<td>2.20</td>
<td>$4,345,200</td>
<td>$1.98</td>
<td>$4,749,800</td>
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</table>
Green and Complete Street along E. 82nd:

<table>
<thead>
<tr>
<th>Additional Construction Cost</th>
<th>Construction Cost</th>
<th>Construction Cost/ CSO-Gallon</th>
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<tbody>
<tr>
<td>≈$1.7 million</td>
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</table>

Note: no significant increase in stormwater and/or CSO capture
Replace Sidewalk and Curbing along E. 82nd:

Additional Construction Cost | Construction Cost | Construction Cost/ CSO-Gallon
---|---|---
≈$421,605 | $4,766,805 | $2.17

Base Concept:

<table>
<thead>
<tr>
<th>Construction Cost</th>
<th>Construction Cost/ CSO-Gallon</th>
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</thead>
<tbody>
<tr>
<td>$4,345,200</td>
<td>$1.98</td>
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</tbody>
</table>

Note: no increase in stormwater and/or CSO capture
Replace Sidewalk along one side of E. 82nd:

<table>
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<tr>
<th>Additional Construction Cost</th>
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<tbody>
<tr>
<td>$=175,000</td>
<td>$4,520,200</td>
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Note: no increase in stormwater and/or CSO capture
### Additional Features in Urban Ag – Additional Features

<table>
<thead>
<tr>
<th></th>
<th>Additional Construction Cost</th>
<th>Construction Cost</th>
<th>Construction Cost/ CSO-Gallon</th>
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<tr>
<td></td>
<td>$234,923</td>
<td>$4,447,373</td>
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### Base Concept:

<table>
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<tr>
<th></th>
<th>Construction Cost</th>
<th>Construction Cost/ CSO-Gallon</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>$4,345,200</td>
<td>$1.98</td>
</tr>
</tbody>
</table>

Note: some increase in stormwater and CSO capture due to additional evapotranspiration
Value added by NEORSD’s green infrastructure project:

1. Bioretention basins – aesthetic amenities
2. Bioswales and rain gardens – aesthetic amenities
3. Street resurfacing of E. 83rd, E. 82nd, E. 81st, portion of E. 79th, and...
4. Property acquisition
5. Additional trees along E. 82nd and in Otter Park
6. Outdoor classroom area
7. Educational signage (3-5 throughout project area)
8. Pedestrian Path – Connector to RTA Station