Finding Land and Assessing Sites for Urban Agriculture

Maggie Fitzpatrick, Agriculture and Natural Resource Educator
Ohio State University Extension, Cuyahoga County
Finding Land and Site Assessments

• Factors to consider in site search
• Resources to identify available land
• Site suitability
• Soil testing and contamination
Site factor to consider

- Are urban farms allowed in your city?
- Land ownership
- Soil quality & drainage
- Water access
- Sunlight
- Slope
- Access into the farm
- Security
How many acres of vacant land are in Cleveland?
Answer: 1548 acres
(12,853 vacant lots)
Finding Land

City of Cleveland Land Bank
Council Member
Community Development Corporation
City Planning

Cuyahoga County Land Bank
Community Development Corporations
Private landowners
Non-profit organizations
Online Resources

- Cleveland City Planning Commission website

- County Planning Commission website
  - http://planning.co.cuyahoga.oh.us/gis/

- Cuyahoga County Auditor’s website
  - http://fiscalofficer.cuyahogacounty.us

- Cuyahoga County Land Bank
  - http://www.cuyahogalandbank.org/properties.php

- Google maps
Now that you have a few potential sites…

It’s time to determine if one of them is the right site for you!

Review Homework: Site Selection Criteria
Site Assessment Part I

- Sun exposure
- Shade
- Topography
- Location
- Water access
- Parking
- Soil
Sun, shade, and slope

- Sun exposure
  - At least 6-8 hours
  - Trees and buildings
  - Check AM and PM

- Shade
  - Compost
  - Post harvest handling
  - R&R

- Slope
Site Assessment part I

- Water access
  - Hydrants
  - Rainwater collection
  - Neighbors

- Location
  - Zoning/Land use
  - Transit
  - Neighbors
  - Visibility
  - Community assets

- Truck access
Preliminary Soil Assessment

Visual assessment

- Drainage
- Plant growth
- Soil texture
Security

From who?

City zoning will determine:

• If you are allowed to have a fence
• If you need a permit
• May have certain requirements for types of materials, heights allowed and acceptable designs.
Site Assessment Part II

• Research lot history
  o County Auditor’s site (see online resources slide#7)
  o Talk with neighbors
  o Resources available from public libraries and local government

• Take a soil test

Resource: A Checklist for Property Research in Cleveland & Cuyahoga County and Sanborn Fire Insurance maps are available online at Cleveland Public Library
Taking a soil test

Timing

Fertilization

After spring thaw

Composite of 10 samples

Divide larger parcels

Isolate any unusual spots
Collecting the Sample

- Dig a small hole or use soil probe
- Take a small slice
  - one inch thick
  - six inches deep
- Remove grass and organic material
- 2 inch wide strip
- Fill in hole
- Repeat
While You’re Collecting the Sample…

- Texture
  - Soil shake
- Compaction
- Composition
- Depth
Preparing the sample for the lab

• Combine the samples
• Break up any clots
• Air dry
• Label the sample
• Measure one cup of the composite sample
• Place in envelope and label
• Send to the soil lab or bring it to class
• Many soil lab options
Test Results

- Fertility/Nutrients
- pH
- Heavy Metals
  - Lead
  - Chromium
  - Cadmium
  - Aluminum
  - Nickel
SOIL WEIGHT: 5.80 g/5cc

COMMENTS: WRIGHT.1128@OSU.EDU, MARLANEW@SLAVICVILLAGE.ORG

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ANALYSIS REPORT

SAMPLE ID: L1
SOIL TYPE:

SOIL PH 7.7
BUFFER PH 7.4

ALUMINUM (AL): 17 PPM (Soil Range: 10-300)

<table>
<thead>
<tr>
<th>NUTRIENT LEVELS: PPM</th>
<th>LOW</th>
<th>MEDIUM</th>
<th>HIGH</th>
<th>VERY_HIGH</th>
</tr>
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<tbody>
<tr>
<td>PHOSPHORUS (P) 6</td>
<td>XXXX</td>
<td></td>
<td></td>
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<tr>
<td>POTASSIUM (K) 213</td>
<td>XXXXXXXXXX</td>
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<td>CALCIUM (CA) 8036</td>
<td>XXXXXXXXXX</td>
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<td>MAGNESIUM (MG) 300</td>
<td>XXXXXXXXXX</td>
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<tr>
<td>NITRATE (NO3-N) 5</td>
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CATION EXCH CAP 37.3 MEQ/100G

PERCENT BASE SATURATION
K= 1.3 MG= 5.7 CA=93.1

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<td>Manganese (Mn)</td>
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<td>Iron (Fe)</td>
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<td>Zinc (Zn)</td>
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EXTRACTED LEAD (PB) 33 PPM.
EXTRACTED CADMIUM (CD) 0.3 PPM.
EXTRACTED NICKEL (NI) 0.2 PPM.

ESTIMATED TOTAL LEAD IS 439 PPM.

EXTRACTED CHROMIUM (CR) 0.1 PPM.
RECOMMENDATIONS FOR HOME GARDENS:

SOIL PH ADJUSTMENT:
Reported pH is higher than desired. Do not apply limestone, wood ash, or any other amendment that might raise soil pH further. To lower pH: sulfur, aluminum sulfate, iron sulfate, or acidic organic matter may be effective. The required quantities of these materials will vary according to the nature of the alkalinity of your soil.

FERTILIZER:
** Your soil contains sufficient levels of potassium. You may apply the standard recommendations below, or you may provide sufficient nitrogen and phosphorus by using alternate sources to provide about 1/4 lb nitrogen and about 1/4 lb phosphorus per 100 sq ft.
** VEGETABLES: Apply 3-4 lbs 5-10-5 per 100 sq ft in early spring.
** ANNUAL FLOWERS: Apply 1.5 lbs 5-10-5 per 100 sq ft in early spring. Alternatively you may use one-half the ORGANIC recommendation given above.
** ROSE BUSHES: Apply 4 tablespoons of 5-10-5 per bush in early June and early August. None after August 15.

Avoid overfertilizing which can cause plant toxicity and can contribute to insect and disease problems.

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SOIL pH: 7.7
BUFFER pH: 7.4

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CATION EXCH CAP 37.3 Meq/100g

PERCENT BASE SATURATION K= 1.3 Mg= 5.7 Ca=93.1

EXTRACTABLE ALUMINUM: 17 ppm (Soil range: 10-250 ppm)

EXTRACTED LEAD (PB) 33 PPM.

ESTIMATED TOTAL LEAD IS 439 PPM.

The lead level in this soil is low.
SAMPLE ID: L1

RECOMMENDATIONS FOR PERENNIAL HERBS AND FLOWERS:

SOIL pH ADJUSTMENT:

pH ADJUSTMENT FOR PERENNIAL HERBS AND FLOWERS

Soil pH is very high; consider growing plants adapted to alkaline soils. Call the lab for suggestions.

FERTILIZER:

NEW BED PREPARATION: In early spring incorporate 1 part peat moss into 2 parts soil along with 3 cups dried blood and 6 cups bone meal per cubic yard of soil.

ESTABLISHED BEDS: In early spring and early June sidedress 1.5 cups dried blood and 4 cups bone meal per 100 square feet, taking care not to damage foliage and water afterward.

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SOIL pH 7.7  NITROGEN: NO₃-N = 5 ppm
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CATION EXCH CAP 37.3 Meg/100g PERCENT BASE SATURATION K= 1.3 Mg= 5.7 Ca= 93.1 ALL NORMAL

EXTRACTABLE ALUMINUM: 17 ppm (Soil range: 10-250 ppm)

EXTRACTED LEAD (Pb) 33 PPM. ESTIMATED TOTAL LEAD IS 439 PPM.

The lead level in this soil is low.
Sources of contamination

• Naturally present
• Previous industry at the site
  • Battery production
  • Brass and steel manufacturing
• Leaded gasoline
• Lead paint
• Pesticides
You found a site!

• Leases and agreements
  o Written agreements
  o Templates
  o Protect your use of the site

• Liability insurance

• Community relationships
  o Neighbors
  o Organizations
  o Businesses
  o Council members
  o CDCs