



# Voluntary Conservation & Urban Agriculture 2024

# NRCS – Helping People Help the Land

#### **Mission Statement**

We deliver conservation solutions so agricultural producers can protect natural resources and feed a growing world.

#### **Vision Statement**

A world of clean and abundant water, healthy soils, resilient landscapes, and thriving agricultural communities through voluntary conservation.





NRCS provides one-on-one, personalized advice.

NRCS helps people make investments in their operations and local communities.

NRCS generates, manages and shares the data, technology and standards to help make informed decisions.



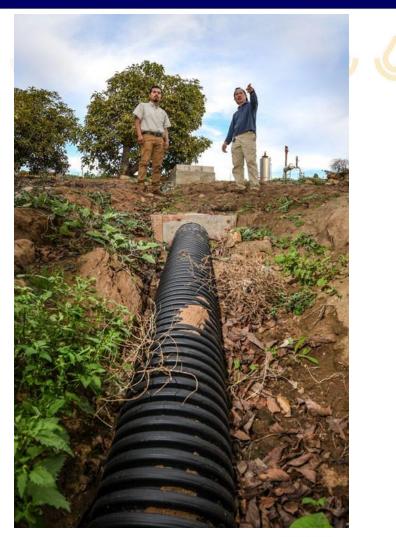
#### It all starts with the Customer's Land.





# Voluntary Conservation Approach

- State Technical Committees
- Local Work Groups
- Local Conservation Districts
- Outreach





#### United States Department of Agriculture

#### **Equity and Diversity**

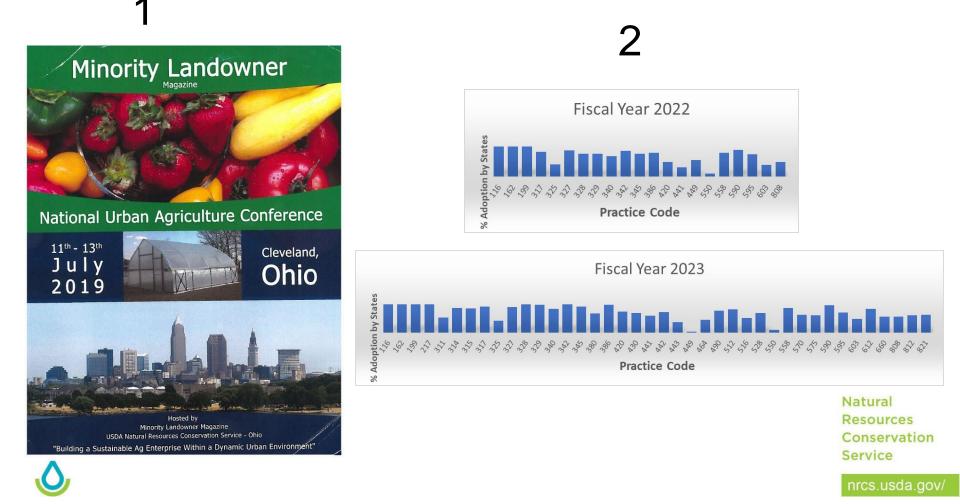
- NRCS is committed to achieving equity in our programs and services by removing barriers, mitigating inequities, and sustaining fairness to ensure that every customer is put in a position to succeed.
- New on-demand language interpretation service.
- Size doesn't matter







# NRCS Transformational Moments for Small scale and Urban Agriculture



# Joint Leadership Letter

USDA ties Department of Agriculture

February 23, 2022

Dear NRCS and FSA State Leaders,

Agriculture is not defined by the location of the farm or the size of the plot. Agriculture is the source of our Nation's food and fiber, and it continues to grow in impact and importance in our urban areas. As such, USDA is committed to understanding, investing in, and supporting the needs of urban agricultural producers.

This past year, we have boldly supported urban agriculture across the Nation through grants and agreements and Urban Courry Committees. Most recently, Scoretary Vilack cousted a new advisory committee which will identify barries and advise USDA on urban agriculture policies and outwach practices. As we proper to better serve urban productor going forward, NRCS and FSA will be at the forefront. Our two agreecies have a deep understanding of local agriculture and the issue facing local

As leaders it is our responsibility to set the tone and prepare our staffs to recognize the opportunities that lie shead. We are charging you to increase our service and outreach in urban communities, work to understand their needs, and connect them to our available programs and resources.

Many states have robust urban agriculture programs, while others are building out their offorts and identifying the needs of farmers in urban and rund areas alike. To ensure all our agency leaders have the same understanding, we are providing the following guidance:

- 1. USDA services are available to those who produce food or fiber in urban areas.
- 2. Land and other areas used for food production in urban areas, regardless of size, is eligible for farm and tract mambers.
- 3. There is not a specific program for our urban agriculture efforts. We will use our existing program anthemities to provide ansistance. 4. Many urban lands are suitable for providing foods to their local communities
- 5. For conservation programs, there is no minimum income level to be eligible to participate

NRCS and FSA are uniquely positioned to work in partnership with other USDA agencies and other stakeholders to provide broad, effective outreach about agency resources and abilities to serve. We will be working in the coming months with the Office of Urban Agriculture and Inservaive Production to provide training for both our agencies to increase urban outreach, program participation and technical assistance.

Your commitment to this work is essential to addressing the unique needs and opportunities of urban farmers and communities. We look forward to working together to learn how we can best agree urban agricultural producers

Sincerely,

ach Duchenson Zach Duchen Administrator MINT

Netrat Resources Conservation Service P.O. Box 2003

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# Chief's Priority 2023-2024

## **Urban Agriculture**

# Expand conservation tools and support to address the unique needs of urban farmers and communities nation wide.

• <u>Review conservation policies, practices and activities to</u> <u>adopt and customize to support urban agriculture.</u>





# Urban Agriculture Location

Urban as a description as opposed to a definition.



Bronx, NY. Population 1.5 million

Kennebec, SD. Population 300



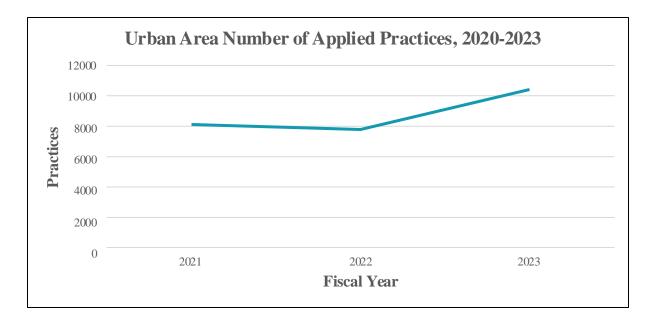


# **Urban Agriculture Size and Income**

- There is no minimum size for an operation or minimum income threshold.
- NRCS is evaluating the number of small operations from both NASS statistics and gardening data.
  - About 250,000 farms 1-9 acres (NASS)
  - About 30 million households participating in gardening
  - We are evaluating the effectiveness of our practices, programs, and services across all operation sizes.



# **Progress with the Urban Priority**



22% Increase in practices applied in urban locations

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#### New York City Urban Water Management Project A USDA NRCS Watershed and Flood Prevention Operations (WFPO) Initiative



In 2022, WFPO **Program awarded** more than \$46 million in funding for water management to **NYC community** gardens. (Bipartisan Infrastructure Law (BIL)\$ thru NRCS)



#### NYC Green Thumb WFPO Project

- The first-of-its-kind initiative for NRCS Watershed Programs, the NYC Urban Water Management Project received the 'motherlode' of Watershed Program Bipartisan Infrastructure Law (BIL) funding in 2022.
- The project Sponsor is NYC Parks Green Thumb a program that sustains over 550 community gardens of which 254 have been identified as food-producing and eligible for WFPO assistance.
  - Green Thumb is the nation's largest urban community gardening program.
- Funds will be used to provide dependable and accessible water supply to community gardens that produce food.
- Reliable water supply is vital for community gardens to thrive.
- Food deserts exist even within an urban environment where cultures identify with and depend on certain foods that are affordable and hard to find.







- Most community gardeners in NYC access water from fire hydrants located outside the garden to irrigate plants and vegetables through a permit process that Green Thumb facilitates with the NYC Dept. of Environmental Protection.
- Low water pressure, malfunctioning valves, poor connections, and leaks are all problems that arise from using fire hydrants as a water source besides the fact that they are often hard to access.
- A typical installation for a reduced pressure valve (RPZ) water supply system ranges from \$350,000 to \$400,000 and costs will vary depending on materials, garden size, amount of excavation and more.
- Each garden water supply system will include a below ground water meter and a bibb connection.
- Benefits: reliable water access, increased food productivity and NYC water supply protection.



# Organic Assistance for Urban Producers

#### **Conservation Technical assistance with:**

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- Existing practices: High tunnels, cover crop, mulching, crop rotation, nutrient and pest management and more!
- Interim practice Organic Management (823)
  - Organic Management Technical Note provides details for standard
- Conservation Planning Activity Supporting Organic Transition (138) and Transition to Organic Design & Implementation Activity (140)
- 6 Regional Organic Coordinators

#### Financial Assistance – Many small-scale scenarios

- EQIP
  - General, National Organic Initiative (NOI), Organic Transition Initiative (OTI) – may include foregone income during transition
- Agricultural Management Assistance (AMA)
- Conservation Stewardship Program (CSP)











# **Organic Assistance for Urban Producers**

#### **Conservation Technical Assistance**

- Provides assistance to Organic or Transitioning to Organic producers to evaluate their soil, water, air, plant, and animal resource concerns.
- 6 regional coordinators

#### **Conservation Plan development**

- Conservation planning activity (CPA) 138 Supporting Organic Transition
- Design and Implementation activity (DIA) 140 Transition to Organic

#### **Organic Management Interim Conservation Practice (823)**

 Provides guidance to install or use conservation practices in a manner to meet the National Organic Program standards.

#### **Common Conservation Practices**

- High Tunnel Systems, Irrigation Water Management and Micro-irrigation, Conservation Crop Rotation, Cover Crop, Mulching, Nutrient Management, Pest Management
- Raised Beds, Low Tunnel Systems, Culturally Significant Plantings for Soil Health, Amending Soil Properties with Lime, Non-ruminant Livestock Outdoor Management Of Vegetative Cover.





# **Urban Pollinator Opportunities**

#### **Capacity Building Through Partnerships**

- Xerces, Pollinator Partnership.
- Modeled on outreach, education, planning, assistance with application process, implementation.
- 12 Partner Staff putting conservation on the ground via state and field offices.
- Core practices of Wildlife Planting (420), Conversation Cover (327) and Hedgerow Planting (422).
- Urban, Tribal, Suburban opportunities.
- Improved community garden and urban food production through stronger ecosystem services.



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**Environmental Quality Incentives Program** (2) (2) EQIP is a voluntary conservation program designed to assist producers in addressing identified resource concerns in their conservation plans.

### **Conservation Stewardship Program**

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CSP is a voluntary program designed to build on and enhance existing conservation efforts on private lands.

## **Regional Conservation Partnership Program**

RCPP is a partner-driven program designed to fund conservation solutions on private lands.





### **Soil Testing Activities**

#### **Conservation Evaluation and Monitoring Activities (CEMA)**

#### <u>Site assessment and soil testing for</u> <u>contamination (CEMA 207)</u>

 Provides financial assistance for soil testing and site history evaluation at sites with risk of soil contamination.

### Soil health testing (CEMA 216)

 Financial assistance for laboratory soil health tests.



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## **Soil Testing Activities**



#### Conservation Evaluation and Monitoring Activities (CEMA)

#### Soil and Nutrient Source Testing (CEMA 217)

 Provides financial assistance for soil fertility testing and nutrient source testing for manure, compost and other.

#### PFAS Testing in Water or Soil (CEMA 209)

 Financial assistance for laboratory soil health tests.



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### **Raised Beds**

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- Create an above ground growing environment.
- Facilitates gardening on sites where soil is unsuitable for crop production.
- ICPS 812 uses barrier to separate bed from ground.

#### Useful for many contexts:

- Heavy metal contaminants.
- Debris impractical to remove.



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### **Low Tunnel Systems**

#### An enclosed covered structure that is used to cover and protect crops from sun, wind, excessive rainfall, or cold, and to extend the growing season or to reduce pest pressure.

- Moderates soil and air temperatures to extend the growing season.
- Type of cover may be changed as the growing season changes: plastic, netting, woven fabric blankets.
- Hoop structure (less than 4 feet commonly) or Floating Covers.
- Short tunnels do not restrict the viewscape.

# Permits may not be needed on temporary cover tunnels.







# **Controlled Environment** Agriculture (CEA)

- Cross Deputy Area team was recently stood up to focus on CEA and is led out of S&T.
- Provide technical guidance and resources.
- Technical trainings.









# **Trainings and Coordination**

- 2 in-person Urban Soil Health Trainings have occurred this spring.
- 1 in-person CEA training and a second in August.
- 1 virtual Agricultural Engineering Consortium session.
- All states and territories have an Urban POC who meet monthly.







#### USDA U.S. DEPARTMENT OF AGRICULTURE



UNITED STATES DEPARTMENT OF AGRICULTURE

# URBAN AGRICULTURE PROGRAMS ATAGLANCE

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# Technical Guidance and Resources



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National Engineering Handbook Part 650 – Engineering Field Handbook

#### Subpart T – Urban Agriculture



- Urban Agriculture Handbook
- Small-Scale Irrigation Design Guide
- Hydroponics and aquaponics fact sheets
- Small scale practice payment scenarios
- Conservation practice standards

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### Urban Soil Health Technical Notes 🛆 🛆 🛆 🛆 🛆

- Basics of soil health in urban areas TN 470-SH-02
- Site evaluation for urban soil health TN 470-SH-03
- Conservation practices for soil health in urban and smallscale agriculture TN 470-SH-04



Available on NRCS e-Directives

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# Soil Health for Urban and Small-scale Agriculture 🖉 🗸 Trainings

#### New 3 day, in-person training for NRCS staff and partners.

- Evaluation of soils
- Application of conservation practices at small-scales

#### 2024 pilot classes

- Indianapolis, IN
- Portland, OR

#### More widespread offering in future years



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## Indiana NRCS Urban Soil Health Tools, 🛆 💧

#### Small-scale Conservation Planning Tools in MS Excel Spreadsheets

- Cover Crop Tool +Guides
- Nutrient Management Tool
- Mulching Tool
- Irrigation Water Management Tool
- https://marionswcd.org/soil-health-guide/



Image: IN Urban Soil Health Program

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#### **Soil Health for Urban Agriculture Workshops**





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### Interim Conservation Practice Standard 822: Nonruminant Livestock Outdoor Management of Vegetative Cover

- Definition
  - Managing the disturbance of soil and vegetation with nonruminant livestock to achieve specific ecological, economic, and management objectives.

#### Purpose

- Improve or maintain target species composition, structure, productivity, health and/or vigor of plants and plant communities.
- Improve or maintain soil health components and indicators.
- Reduce or eliminate the transportation of sediment, nutrients, pathogens, or chemicals to surface or groundwater.









#### Agroforestry: Fitting Trees and Shrubs into Urban Agriculture

- Agroforestry is the intentional integration of trees or shrubs with crop or animal production to create environmental, economic, and social benefits (USDA Agroforestry Strategic Framework, 2019-2024).
- NRCS Agroforestry Conservation Practices
  - Alley Cropping
  - Forest Farming (multi-story cropping)
  - Windbreaks or Shelterbelts
  - Silvopasture
  - Riparian Forest Buffers





**Common Resource Concerns Addressed by Agroforestry Practices** 

- Alter micro-dimate for improved plant health and productivity
- Improve soil health
- Provide pollinator and wildlife habitat
- Provide shade and shelter for livestock
- Reduce impacts from pollutants and flooding
- Increase carbon sequestration and storage



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#### Urban and Small Farms: Water <u>Quantity</u> & Quality

# • Urban and Small Farms Have Variable Access to Water:

- Municipal water sources can be expensive (tiered rates)
- Water that meets drinking water standards is not required for many urban farm, but use of treated water increases costs
- Other water sources include well, rainwater catchment, surface, and reuse -- all have pros and cons

#### Variable Water Use Efficiency

• Irrigation water use on small farms can be variable





# Urban and Small Farms: Water Quantity & <u>Quality</u>

#### Urban and small farms can impact surface and groundwater too

- Runoff from small farms can include nutrients, pesticides and sediment.
- Urban properties may be >50% impervious surface → Substantial runoff potential!
- Surface runoff to stormwater drains often leads directly to surface waterbodies.

#### Erosion still happens on small farms too!

• Sediment and nutrient losses add up, due to the number of small operations that can affect water quality downstream.







### Urban and Small Farms: Water Quantity & Quality

### Urban environments can have negative impacts on water treatment systems

- Increased nutrient loading on municipal water treatment plants may incur additional fees.
- Municipality regulations may require a stormwater runoff plan.







### **Stormwater Management**

# Water Management opportunities in small ag

- Capture runoff for use on farm
  - Roof runoff structure → Irrigation reservoir or Livestock water tank
- Prevent contamination
  - Divert runoff from fertilized and/or manured areas to a mitigation location
    - Filter strip, VTA, etc.

### The same principles of runoff management apply





### Technical Assistance for Urban Aquaculture: Recirculating Aquaculture Systems/Aquaponics

- NRCS assists producers with identifying conservation objectives to addresses soil, water, air, plant, and animal resource concerns
  - Fisheries / wildlife biologists, engineers, agronomists, foresters, archaeologists, economists, etc.
- Technical assistance for aquaculture is provided in the areas of:
  - Agriculture Engineering for aquaculture infrastructure.
  - Water Quality technical assistance (i.e., clean water inputs and nutrient management outputs.
  - Energy Conservation Engineering.
  - Water Management Engineering for water conveyance systems
  - Wildlife enhancement both terrestrial and aquatic opportunities.





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Conservation at Work was created to help farmers, ranchers and forestland owners see the benefits of NRCS' conservation practices and hear from producers who have successfully implemented them.

### REAL STORIES. REAL SUCCESSES. REAL QUICK.

Scan the QR code, or visit: farmers.gov/conservation/conservation-atwork.

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### Pennsylvania – **Urban Ag Status Report**



FARM PRODUCTION AND CONSERVATION FSA | NRCS | RMA | Business Center

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### **Flagship Urban Service Centers**

### Philadelphia, PA was one of the initial 17 Urban Service Centers in FY 22-23.



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### **PHILADELPHIA URBAN SERVICE CENTER OPENED!**

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#### Past/Current Farm Bill Work in Philadelphia Area:



People's Kitchen Philly-Provides free meals to the community, growing much of the food onsite in their gardens. EQIP FY23 contract includes a high tunnel system (325) on a lot owned by one of the non-profit organization's founders. The high tunnel is installed, and the contract is completed.



<u>Mary's Daughters, LLC</u> - Educational program for kids to learn about growing food. FY 23 EQIP contract includes Raised Beds (812), High Tunnel System (325), Low Tunnel System (821), Composting Facility (317), Cover Crop (340). Practices planned through 2024/2025.

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#### Past/Current Farm Bill Work in Philadelphia Area:

• W.B. Saul High School is the largest agricultural farm school in the US, with the largest FFA chapter in the Pennsylvania, with 40.1% of the students were classified as economically disadvantaged.

• Historically, the NRCS Field Office has provided technical assistance and planning services for the farm operation, as well as career outreach to the students in their agricultural programs.

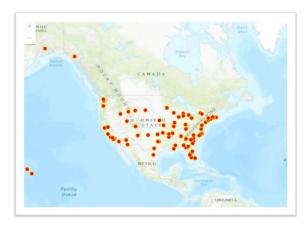




### Pennsylvania People's Gardens

#### As of June 2024:

- 27 registered PGI garden sites in PA
- 2 PGI projects funded in FY23 (\$56,000 in ARPA Funds)
- 5 PGI projects funded in FY24 (\$150,000 ARPA, \$100,000 in CTA)





#### THIS GARDEN CAN MAKE A BIG IMPACT IN YOUR COMMUNITY BY:

Growing fresh, healthy food and supporting a resilient, local food system.

Teaching people how to garden using sustainable practices.

**Nurturing** a habitat for pollinators and wildlife, and greenspace for neighbors to gather, reflect and enjoy.



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### Pennsylvania People's Garden Examples:

• The <u>U School (funded in 2022) is a competency-</u> based high school in Philadelphia that challenged their students by partnering with the Natural Resources Conservation Service (NRCS) to build and create a People's Garden within the community.





 The <u>Philadelphia Orchard Project (POP)</u> has been in operation for 17 years as a "food forest site." The orchards are used as a learning experience, with programs that teach participants to grow, harvest, and utilize agricultural products in an urban setting. All harvested and value-added goods are donated to emergency food services in the neighborhood.

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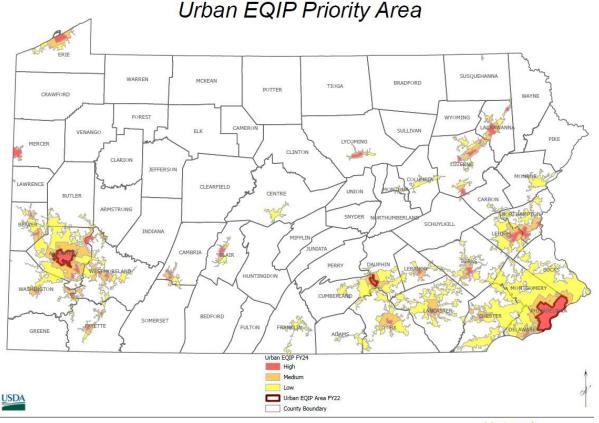
### Other Updates:

- Philadelphia Urban Service Center (USC) reached over 100 growers in 2024 with Outreach and TA, worked on eligibility and ID'd potential barriers to USDA FA Programs.
- Collaborating with Pa Department of Ag, other state agencies and local contacts to support the installation of a Conservation District office in Philadelphia to further support USDA efforts.
- Second USDA Service Center in PA on track to open in Pittsburgh (FY25), with close coordination between FSA, NRCS and County Conservation District partners.





- As of FY 24, PA has expanded its priority areas for EQIP to include those cities within metropolitan statistical areas from the most current US Census.
- PA has also expanded the small-scale practice cost list based on feedback through our State Technical Committee.



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### **PANRCS pXRF Technical Soil Investigations**



2023 to 2024

- 17 sites
- Philadelphia
- Delaware County
- Dauphin County
- Lancaster County
- Berks County



- **Types of Sites** • Urban yards
  - Community gardens
  - Church yards
  - Parks/playgrounds
  - Vacant lots
  - School athletic Fields

**Portable X-Ray** Fluorescence

**Portable X-Ray Fluorescence** 



analyzed

Elements

- LEAD (Pb)
- Arsenic (As)
- Chromium (Cr)
- Copper (Cu)
- Cadmium (Cd)
- Vanadium (Vd)
- Nickel (Ni)
- Zinc (Zn)



### FINDINGs – Focus on Lead (Pb)

Soil Pb was elevated for most observations relative to natural soil Pb (24ppm)

Average across all sites was 277ppm: low 6ppm, highest 2909ppm

How much lead is too much? <u>No</u> EPA or PADEP standards for <u>urban gardening</u>

PADEP soils Pb threshold for brownfield remediation for residential use is 500ppm
EPA Pb superfund remediation std is 200ppm
Univ. of CT soil lead interpretation fact sheet recommends

precautions when soil Pb is >100ppm

Vacant lots that once had houses had elevated Pb

Garden beds amended with compost often had Pb levels <100ppm

Areas closest to buildings and streets typically had highest Pb.









### **RESULTS: working as a team**

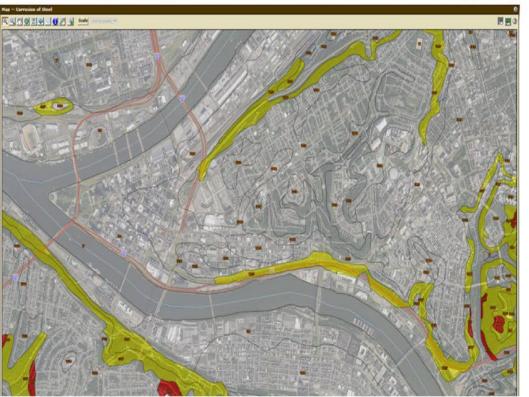


BEFORE: pXRF revealed elevated Pb. Vegetables were being grown in the ground. AFTER: NRCS worked with customer to install raised beds. Lots of food can be grown here safely.

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### NRCS Pittsburgh Urban Soil Survey update



Pittsburgh soil survey update requested by local partners who are collaborating.

10 mapunits with an Urban named component.

Urban components currently have no soils data and therefore no available interpretations.

Field data will be collected which will allow interpretations.

Morgantown Soil Survey Office (WV) is responsible with help from PA NRCS and local partners like the Allegheny County Conservation District.

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