

# THE DIGGABLE CITY:

## Making Urban Agriculture a Planning Priority

Prepared for the City of Portland, OR



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**“There is a need to bring life into the city,  
so that its poorest inhabitant will have not  
merely sun and air, but some chance to  
touch and feel and cultivate the earth.”**

**Lewis Mumford, 1961**





The Diggable City Project Team would like to thank our client and faculty advisors. We are grateful for the time and effort they invested in this project and the support and guidance they provided during its development.

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In November of 2004, Portland's City Council unanimously passed Resolution #36272. This resolution directed various City bureaus to conduct an inventory of their properties, with the goal of determining which might be suitable for either expanding the Community Gardens Program or for future development into other kinds of agricultural uses.

Under the guidance of Brendan Finn and Commissioner Saltzman's office, a team of graduate students from Portland State University's Urban and Regional Planning program collaborated with the bureaus of Water, Parks, Environmental Services, and the Office of Transportation to complete the inventory. The inventory process was guided by criteria developed in conjunction with a Technical Advisory Committee (TAC) comprised of City staff, Food Policy Council representatives, and other stakeholders. The resulting evaluative criteria were complex because they were closely tied to the needs of the widely varying potential urban agricultural uses of these lands. In addition to the inventory, the team also conducted a literature review, held focus groups with relevant stakeholders, conducted numerous interviews, and administered and analyzed surveys. The results of these outreach efforts greatly informed criteria development and recommendations, and expanded our understanding of the potential for urban agriculture in Portland.

During the TAC meetings, focus groups, and interviews, participants identified a diverse array of potential agricultural uses on city-owned lands. These discussions revealed that land tenure, access to water, level grade, site security and other considerations are important to site selection. Because this project looked at the broad scope of urban agriculture, the data analysis did not remove sites based on the criteria

developed, but instead attributed the data with the information so that it could be used in a way that was suitable for each individual use.

The inventory process removed sites that were located in Environmental Zones and Parks Bureau developed areas, as well as sites that had difficult access, were already occupied, or were generally unsuitable for agriculture. Through the application of the evaluation criteria and an aerial photo analysis, the inventory resulted in 289 locations comprised of 430 individual tax parcels. The identified parcels will need to be reviewed by the bureaus that own them and some may be removed due to existing management plans.

### Recommendations

As a result of TAC meetings, interviews, surveys and the inventory process, the Diggable City team has developed the following recommendations for the City of Portland:

1. Develop an inventory management plan for administering the use of the sites and making the data accessible to the community;
2. Expand the inventory further and develop use-specific evaluation criteria using the collaborative efforts of the City bureaus for reviewing parcel suitability;
3. Form an Urban Agriculture Commission consisting of citizens and a city representative that would review plans and policies and make recommendations on urban agricultural issues;
4. Adopt a formal policy on urban agriculture that addresses environmental, health, and social benefits of urban agriculture and provides a vision for the future of urban agriculture in Portland; and
5. Review current policies and zoning code to identify obstacles to implementing urban agriculture in Portland.





By completing this project, the team seeks to elevate the planning focus on urban agriculture, and, more broadly, food systems as an important component of urban and regional planning. As a result, the project team hopes to expand and improve opportunities for the implementation of urban agriculture in Portland.

**Section 1: Inventory** describes both the inventory process that was undertaken with data from City bureaus and the findings from that inventory, while placing the activity in the context of the idea of urban agriculture.

**Section 2: Local and Regional Context** describes how Portland organizations are addressing urban agriculture and community food systems, and how state, regional and local policies impact urban agriculture.

**Section 3: Challenges and Opportunities** describes areas the City of Portland could address to remove barriers to and provide options for expanding urban agriculture.

**Section 4: Recommendations** shares how the City of Portland could move forward to address this issue, both using the inventory and with policy changes.



Sellwood Community Garden, 2004 (photo courtesy Sheila Strachan)





# Inventory



## Why a Public Lands Inventory?



In the summer of 2004, residents of Portland's Sellwood neighborhood worked in conjunction with their neighborhood association, to transform a pump station lot owned by the Bureau of Environmental Services into a successful community garden. This conversion caught the attention of Commissioner Dan Saltzman, who believed other similar opportunities to use vacant, city-owned land must exist. Commissioner Saltzman introduced a resolution in November 2004 to Portland's City Council which directs City bureaus to conduct an inventory of city-owned land that may be suitable for community gardens and other urban agricultural uses.

When first crafted, Resolution #36272 mentioned only identifying available lands suitable for community garden plots. The Portland/Multnomah Food Policy Council (FPC) asked that the resolution be broadened to consider lands suitable for "other agricultural uses." Members of the Council saw that while not every inventory site would be appropriate for a community garden, other uses and programs could flourish on a wide variety of properties.

The lands included in the inventory are generally lands that the bureaus currently maintain with no immediate management plans. For the purpose of this inventory, urban agriculture is viewed as a potential use for these lands. These parcels represent opportunities for public lands to be used to benefit the community.



**Sellwood Community Garden, Portland**



# INVENTORY

*“City Council is committed to continuing efforts to cultivate Community Gardens throughout the City of Portland as well as providing other agricultural opportunities.” – Urban Agricultural Inventory Resolution*

## **Food Policy Council**

Food Policy Councils (FPCs) are a fairly recent development in the US. Created by a City resolution in 2002, Portland’s Food Policy Council is one of only about two dozen FPCs that exist in the US.

The Portland FPC was instrumental in crafting revisions to City Council Resolution 36272, recommending that its scope be broadened to consider lands suitable for “other agricultural uses.”

The FPC’s vision is to “Imagine a community where all citizens have access to nutritious, fresh food; where agriculture is a thriving part of the local economy, and where food production and distribution contribute to a healthy environment.”

## **For More Information**

**City of Portland Office of Sustainable Development (OSD)**

**Food Policy Council**

<http://www.sustainableportland.org>

**Urban Agricultural Resolution** (see appendices)

[http://www.sustainableportland.org/stp\\_food\\_resolution.html](http://www.sustainableportland.org/stp_food_resolution.html)

# SITE SNAPSHOT



## Potential Uses:

There is a master planning process underway for this site. The north end has been designated as an off-leash dog area and the south end has been designated as a parking lot. This site's existing Open Space zoning permits agriculture, and has great potential to serve as a Community Supported Agriculture (CSA) site. Proximity to multi-family residential area ensures a customer base. The site could serve an educational function for neighborhood children. Site security will be a concern for any operator. Nearby residents may serve as watchful eyes for the site.

<b>Agency</b>	PARKS
<b>Acres</b>	5.7
<b>District</b>	NE
<b>Zoning</b>	OS
<b>Bus Route(s)</b>	77 Broadway/ Halsey
<b>Surrounding Uses</b>	Powerplant transfer station, residential
<b>Access</b>	Bus and bike accessible, pedestrian friendly

## Existing Conditions:

Large, level site is adjacent to a powerplant and located in a multi-family residential neighborhood. Water access is within 25 feet of the property. This site has pedestrian access and public transit accessibility.



# SNAPSHOT: BOSTON



**One of the Food Project's urban growing spaces.**

**Source: Food Project**

Through a combination of community gardens, urban farms, and farmers' markets, Boston grows and distributes a significant amount of food in the urban environment. Land owned by the City, state, and private citizens is managed by both public and private organizations and land trusts for urban agricultural use.

## **Community Gardens**

Boston's 150+ community gardens are overseen by the Boston Natural Areas Network (BNAN). Approximately 6,000 families grow about \$1.5 million in food products annually in these community gardens. In Boston, there are almost as many gardens as there are parks and playgrounds.

## **Urban Farming**

The Food Project ([www.thefoodproject.org](http://www.thefoodproject.org)) operates both a rural farm of 31 acres and three urban sites in Boston through youth training programs. The urban sites produce upwards of 18,000 pounds of food annually, sell about \$15,000 worth of vegetables, and donate about \$5000 worth of food to shelters and soup kitchens. Most of the food is distributed through farmers' markets in the urban center, but also supplies commercial kitchens for the Food Project's catering business.

## **Urban Orchards**

The nonprofit organization EarthWorks' Urban Orchards works with local groups to plant, maintain, and harvest fruit and nut-bearing trees, shrubs, and vines on public land. EarthWorks has planted more than 800 trees and shrubs in its urban orchards on land (usually) owned by nonprofit organizations and government agencies, including schools, low-income housing, and public green space. In 1998, EarthWorks published the Urban Fruit Guide, listing publicly accessible fruit, nuts, and berries at both the orchards and all publicly accessible sites in Boston and several nearby cities.

## **Business Incubation**

Several community development corporations have used food as a basis for economic development activities. Nuestra Comunidad CDC has developed Nuestra Culinary Ventures, a kitchen incubator for new food businesses. Opened in 2002, NCV has served over 30 entrepreneurs. Nearby Franklin County CDC started and manages the Western Massachusetts Food Processing Center to incubate food businesses and support farmers and others creating value-added products. As mentioned, the Food Project started a catering business that trains students in the culinary arts; this organization was also involved in starting a farmer training program for Eastern Massachusetts.



## Summary of Public Lands Inventory Available for Agricultural Uses

Urban agriculture is one component of Portland’s community food system which encompasses a wide range of food-related activities, from education to production, collection to consumption. Urban agriculture includes community gardens, farm stands, vertical gardening, native plant production, and many other techniques.

Urban agriculture is an activity located within the urban growth boundary which includes raising, processing and distributing a variety of food and non-food products using resources, products and services found in and around the city, and in turn supplying resources, products and services for local consumption. Urban agriculture is by necessity closely integrated into the surrounding urban fabric, where citizens and communities can interact with it on a personal and local level.

### How Was the Inventory Conducted?

The inventory consists of properties under the management of the Bureaus of Environmental Services, Parks and Recreation, Transportation, and Water. These bureaus provided property data in geographical information system (GIS) format, totaling 875 individual sites. The challenge to the team was to develop criteria by which to classify the parcels. A Technical Advisory Committee was formed to guide this process. The Committee was comprised of City staff, Food Policy Council representatives and community members.

The types of agriculture investigated for this report were classified into Community gardens, small-scale agriculture, large-scale agriculture, and agriculture on impervious surfaces or poor soil.

Aggregating various agricultural uses into four generalized categories allowed for flexibility of analysis and application of this inventory for future use. The categories incorporate many of the possible uses of the land based on the requirements to implement those uses.

All of the sites were kept within the inventory and were attributed based on the evaluative criteria. In this way, the inventory maintains the maximum number of potential sites for urban agricultural use. For example, a site covered with trees, while normally not suitable for row-cropping, is retained in the inventory for possible alternative farming techniques (e.g. forest farming, berry or mushroom cultivation). Likewise, a paved property could be used for a container gardens, greenhouses or a farmers market. For the complete methodology, refer to the GIS Methodology at the end of this report.

*“Food production is going to be an enormous problem [when we face the end of the fossil fuel era]. As industrial agriculture fails due to a scarcity of oil- and gas-based inputs, we will certainly have to grow more of our food closer to where we live, and do it on a smaller scale.”*

— James Howard Kunstler, *The Long Emergency*



# INVENTORY

## Findings

The inventory is comprised of individual tax parcels. For the purposes of the report, parcels adjacent to one another are considered as one location and their characteristics have been summarized resulting in 289 locations comprised of 430 individual tax parcels.

Additionally, a series of interviews and focus groups were conducted. Surveys were also conducted at local farmers markets. These research techniques informed our evaluative criteria development for the sites. The criteria included tenure of land, water access, level grade, transit access, and proximity to other agricultural activity. Soil quality was not tested.

Nonprofits providing educational training desires sites that are strategically situated near sites of existing programming. Access to public transportation facilities were more important for this group. Groups looking to develop small commercial native plant nurseries desired plots of a larger size. Other groups such as permaculture enthusiasts suggested using non-traditional agricultural lands for activities that could simultaneously showcase habitat restoration and food production. Surveys reveal that when gardeners live near their community garden they do not drive their cars to the site; they tend to walk, bike or taking the bus instead. This information is important for determining what features community gardens need to function well.

Some sites were selected for site visits based upon their geographic distribution, proximity to existing community gardens (at least one mile from the nearest Community Garden), and their implementation potential based on the aerial photo analysis. In the end, 24 candidates

were chosen for site visits. These 24 sites varied in size and potential uses, were selected by location, and are within a quarter mile and half mile of bus stops and the designated bicycle network.

As a result of the site visits, eleven of the twenty-four candidates were culled as potential highlights. After meeting with the bureau owners of these eleven sites to find out about future plans for the land and their feasibility for urban agricultural use, five were selected as “site snapshots.” These snapshots serve to highlight the range of lands within the inventory and what they might be used for. For further information see these snapshots, which are spread throughout the report.

### For More Information

#### Urban Agriculture Resources

Urban Agriculture Notes - <http://www.cityfarmer.org/>

#### Resource Centre on Urban Agriculture & Forestry

<http://www.ruaf.org/>

#### Urban Agriculture References

[http://www.nal.usda.gov/afsic/AFSIC\\_pubs/urbanag.htm](http://www.nal.usda.gov/afsic/AFSIC_pubs/urbanag.htm)



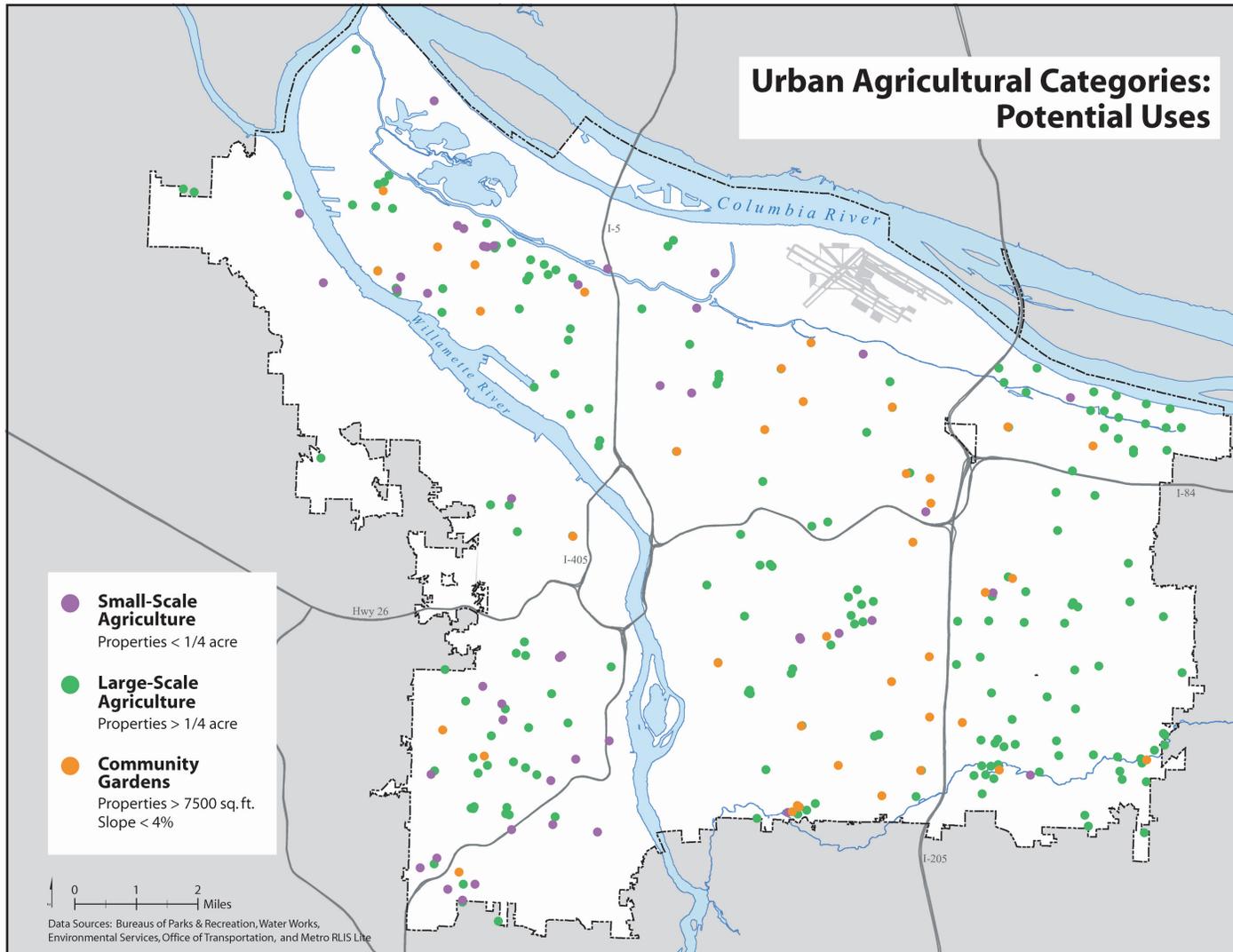
## Summary of Public Lands Inventory Available for Agricultural Uses

Table 1: Urban Agriculture Categories

Category	Community Gardens	Small-Scale Growing Operations	Large-Scale Growing Operations	Growing on Impervious Surfaces or Poor Soil
Agricultural Uses	Gardens with individual plots; gardens with shared gardening space	Farm stands, educational gardening programs, composting, vermiculture, food bank gardening, herb growing, beekeeping, pocket garden, floriculture, market gardens	CSAs, other urban farms, urban orchards, animal husbandry, Zenger Farm immigrant farmer apprentice program, horticulture, native plant production, nursery, beekeeping	Vertical gardening; indoor growing (e.g. sprouts, mushrooms, aquaculture, vermiculture); greenhouses, farm stands, community processing, farmers' markets, container gardening, hydroponics



# INVENTORY



# SITE SNAPSHOT



## Potential Uses:

This site is due for a Parks master plan and this process will determine the range of possible uses for this site. Current R7 zoning prohibits agricultural activities. The operation could serve as an educational resource to the nearby school, offering courses for school or after-school programming. This large site is comprised of both pervious and impervious surfaces, allowing for an exciting combination of agricultural activities. The impervious location could house both a greenhouse and farm stand, while the pervious area could be planted to edible or non-edible horticultural crops.

Agency	PARKS
Acres	20.0
District	SE
Zoning	R7
Bus Route(s)	27 Market/ Main
Surrounding Uses	Residential, park, school
Access	Bus and Bike accessible, pedestrian friendly, parking

## Existing Conditions:

This site is owned by Portland Parks and Recreation and was formerly a gravel pit. The surface of the site is unimproved, mostly covered with grass and a few small, marshy areas. There is a narrow gravel and concrete strip on the north side, and light access is excellent. There is a water main within 100 feet of the site and about half of the surface is impervious. The site is within a 1/4 mile of the 27 Market/Main bus, there is a sidewalk within 10 feet and there is parking nearby.



# SNAPSHOT: COPENHAGEN



**A farm stand at a Copenhagen Farmers' Market**

**Source: Teak Wall**

Copenhagen has a long tradition of urban agriculture, primarily through the promotion and protection of *allotment*, or community gardens, which are used extensively by a large number of city residents.

## **Community Gardens**

Community gardens are located on municipally-owned property, such as railway property, but many of Copenhagen's gardens are located on former landfills and industrial sites. The Allotment Garden Federation, a private organization, organizes two-thirds of the approximately 60,000 plots in Denmark. Land is leased from the municipality or private landowners. Like other European countries, local, state, and federal laws regulate how garden associations are run, and how much they can charge for the sub-leasing of spaces.

## **City and Political Involvement**

In 2001, Denmark passed a "colony garden" law that effectively made all community gardens on public land permanent, meaning the land couldn't be arbitrarily converted to other uses. Only under very special circumstances could the garden space be changed. This law made 51 of the 63 garden associations on municipal land permanent (in the language of the law). All spaces located on the Danish railway system land were also made permanent. Ten of the remaining associations have been designated as non-permanent, since their gardens are located on land designated for future uses such as institutions and schools. In short, gardens can be dismantled only if it is of substantial social importance, and then the association is entitled to replacement space. Also, the number of plots is expected to increase as a result of additional provisions of the new law.



# Local and Regional Context



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## What's Happening in Portland and the Region?



Focus groups and interviews with numerous urban agriculture practitioners reveal that there are many questions regarding relevant policies and zoning that impact the agricultural activity. Without a designated municipal body to answer these questions, practitioners are left to fend for themselves and have no established structure through which to communicate their challenges and lessons learned.

Viewed at the individual parcel level, urban agricultural activities are productive green spaces that afford citizens an opportunity to congregate, educate and cultivate. When viewed collectively, these spaces form a diverse web of multi-functional, productive properties that deliver many benefits to citizens beyond just food. Properties in urban agricultural use may have distinct objectives including entrepreneurial, educational and subsistence activities. Many of the existing programs throughout the City and region satisfy more than one of these objectives.

### Entrepreneurial Urban Agriculture

Entrepreneurial urban agriculture comprises operations which intend to generate revenue. Entrepreneurial urban agriculture activities in Portland include opportunities for nearby farmers to sell to the urban market through farmers' markets and CSAs. Another model is to use urban agriculture as a job and business training opportunity.

#### *Local Examples*

The City of Portland plays host to 11 farmers' markets; there are 27 markets throughout the region and 70 statewide. The Community Supported Agriculture (CSA) movement is thriving regionally, with 19 operations. CSA subscribers pay upfront for a season's share of vegetables, fruits and other products. This arrangement

allows subscribers to cultivate a closer relationship with the source of their food while providing the grower with a measure of economic protection against the inherent risks of farming.

Portland's St. Johns Woods Garden runs a program called Foodworks on 700 square feet of Housing Authority of Portland (HAP) land. Foodworks teaches at-risk youth to grow salad greens, which they sell at the Portland Farmers Market. The money earned goes back into the garden and grants pay the youth for their time. Foodworks would like to expand to more growing space in order to offer more training opportunities.

Community Supported Agriculture (CSA) depends on collaboration between food growers and consumers. Community members invest in harvest shares, supporting the agricultural operation expenses for the season. The risks and benefits of food production are carried by all shareholders, not just the farmer. This model allows small-scale agricultural production to be economically viable for farmers.

#### **Resources**

##### **Willamette Valley CSAs**

<http://www.pacsac.org/AlphaListing.html>

##### **Portland Area CSA Coalition**

<http://www.pacsac.org/>

##### **National: Sustainable Agriculture Research and Education**

<http://www.sare.org/csa/>



# LOCAL AND REGIONAL CONTEXT

## *Opportunities for Expansion*

Many urban agriculture programs similar to St. Johns Woods Foodworks have been funded nationally to provide job training and entrepreneurial experience for youth and adults, and some private enterprises are making money growing food on urban lands. One model replicated in cities such as Olympia, WA; San Francisco, CA; and Boston, MA includes establishing an urban farm that serves to train and employ youth, educate school children, and develop products for sale. Sometimes other value-added opportunities exist to process the food grown, as in the popular salsas from Los Angeles' *Food From the Hood* project.

Zenger Farm envisions expanding its operations so that it can utilize a collection of vacant lots for an apprentice farmer training program. The three-year program would build farmers' skills and business savvy, and would graduate them to higher-rent lands by the end of the program when they have an established business and client base. Zenger Farm is



**Wisteria Loeffler, Zenger Farm**

## **Local Resources**

### **Growing Gardens**

[www.growing-gardens.org/](http://www.growing-gardens.org/)

### **Oregon Food Bank**

[www.oregonfoodbank.org/](http://www.oregonfoodbank.org/)

### **Portland International Initiative for Leadership in Ecology, Culture, and Learning (Portland State University)**

[www.piecl.pdx.edu](http://www.piecl.pdx.edu)

### **Zenger Urban Agricultural Park**

[www.zengerfarm.org/](http://www.zengerfarm.org/)

## **Other Resources**

### **GRuB – Garden Raised Bounty, Olympia, WA**

[www.goodgrub.org](http://www.goodgrub.org)

### **SLUG – San Francisco League of Urban Gardeners' Youth Garden Internship Program**

[www.grass-roots.org/usa/slug.shtml](http://www.grass-roots.org/usa/slug.shtml)

### **The Food Project, Boston, MA**

[www.thefoodproject.org](http://www.thefoodproject.org)

### **Food from the 'Hood Program, Los Angeles:**

[www.foodfromthehood.com/](http://www.foodfromthehood.com/)

*"Gardening is an important part of our culture that connects Portlanders to the natural environment and Oregon's agricultural heritage."*

- City of Portland's Urban Agricultural Resolution

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## What's Happening in Portland and the Region?



fundraising for the program that would train refugees and immigrants who either have or would like to learn farming skills. Many American models of such programs are successful in creating jobs, training youth and adults for food-related careers. Portland's land inventory could become a low-cost source of land to jump-start similar projects locally.

### **Educational Urban Agriculture**

Urban agriculture is a form of land use that lends itself to education. From water quality to soil quality, wildlife habitat and plant names, there are many chances for learning in a participatory way.

Nonprofit organizations such as Growing Gardens and Zenger Farm provide additional opportunities for experience with growing food. Growing Gardens partners with several schools to provide 8-week, after-school gardening programs and summer garden camps. Last year, the summer camp served 77 children, and 7 after-school programs served dozens more. Zenger Farm is an educational working farm in the City of Portland, which welcomes school groups to see agriculture in action through farm visits. In 2004, Zenger Farm hosted almost 1,500 students. In an informal survey of farmers' market customers, 87% said they would be "somewhat" or "very" interested in visiting an urban demonstration farm.

Strong community interest in increasing the nutrition of school food is evident from recent community forums with high attendance on the topic, and a wealth of programs cropping up to address these issues. The programs highlighted below offer a small but promising first step to realizing this potential.

#### *School Gardens*

Most schools in the Portland Public School (PPS) system do not currently offer their students opportunities to learn about growing food. However, there are many programs underway to build new school gardens and incorporate food issues into curriculum. There are now 47 school gardens within the City of Portland. Eventually, these programs may lead to growing food for consumption at schools and healthier food choices at home.

#### *School Farm*

An exciting new project with at least a ten-year commitment is being developed at the 13-acre campus jointly owned by Portland Public Schools and the City to create a learning garden laboratory to be used in educational programming for PPS students in partnership with Portland State University (PSU). The site was the home of the former Green Thumb horticultural program. The project is funded by the City of Portland and PSU's Portland International Initiative for Leadership in Ecology, Culture, and Learning (PIIECL) program with eight PPS schools as initial partners.

#### *Oregon Food Bank*

In addition to providing hunger relief services, Oregon Food Bank (OFB) offers a series of programs related to Community Food Security. OFB has learning gardens in Portland and Hillsboro that educate citizens about various gardening methods. Other OFB Community Food Security programs include nutrition education, gleaning and food redistribution programs.

The educational benefits of urban agriculture are substantial: children can learn more about the foods they consume while in school, how



## LOCAL AND REGIONAL CONTEXT

food is grown in both personal and large-scale ways, and how nutrition and the local food system impact their lives.

### **Subsistence Urban Agriculture**

Refugee and immigrant groups are an important audience for subsistence urban agricultural opportunities. Zenger Farm makes several quarter-acre plots of land available to Laotian immigrants for subsistence gardening. The Somali-Bantu Resettlement Project has considered doing the same. At the past two Immigrant Farmer Direct Marketing Workshops, organized by a coalition of organizations including the Portland/Multnomah Food Policy Council, land availability has arisen as a major barrier for immigrants growing their own food to consume or sell.

Growing Gardens is a Portland nonprofit organization that helps low-income people to garden on their own land. These gardeners have been able to create stronger local communities because of their gardens: a survey of Growing Gardens gardeners indicates that 86% of them share food with people who do not live with them and 32% say they have met neighbors through gardening. Among Growing Gardens participants, there was a 44% increase in the number of households that ate fresh vegetables five or more times a week, and an 80% increase of the number of households that spent time outside more than five times a week after their garden was installed. These benefits can be shared with more people using public lands targeted to the low-income community. City-owned land on or around low-income housing projects is another excellent opportunity for this land use.

Community gardens and other plots of land are made available for

members of the public to grow food to support themselves and their families. However, Portland community gardeners surveyed in 2004 ranked “food savings” last in a list of eight motivations for participating in a community garden. Using public lands to target residents interested in agriculture for subsistence addresses the City’s pursuit of social equity in public spaces.

### **Other Programs**

#### *Portland’s Community Gardens Program*

Portland’s Community Gardens Program, created in 1975 through an ordinance passed by Portland City Council, includes management of 29 community gardens totaling 13 acres. About two-thirds of the land used for community garden plots is owned by the Parks Bureau; the rest is owned by other government agencies, private landholders and institutions.

#### *Multifunctional Programs*

Zenger Farm in SE Portland, Luscher Farm in Lake Oswego and Sauvie Island Organics on Sauvie Island are three multi-functional farms on publicly-owned lands. Each plays host to a CSA operation and offers educational programming for people of all ages.

## What's Happening in Portland and the Region?



### Local Resources

#### Somali-Bantu Resettlement Project

[www.bantusupport.pdx.edu](http://www.bantusupport.pdx.edu)

#### Portland State University MURP workshop project – New Arrivals: Options for Successful Resettlement of the Somali Bantu

[www.pdx.edu/media/u/s/usp\\_FinalProductRefugEEE.pdf](http://www.pdx.edu/media/u/s/usp_FinalProductRefugEEE.pdf)

#### Immigrant Farmer Direct Marketing Workshop Report

[www.sustainableportland.org/stp\\_food\\_multi\\_lingual\\_040302\\_report.pdf](http://www.sustainableportland.org/stp_food_multi_lingual_040302_report.pdf)

#### Portland Community Gardens program

[www.parks.ci.portland.or.us/Gardens/Community/CommunityGardens.htm](http://www.parks.ci.portland.or.us/Gardens/Community/CommunityGardens.htm)

*‘Community gardens are important neighborhood gathering places that contribute to the city’s parks and open space system and support neighborhood livability.’*

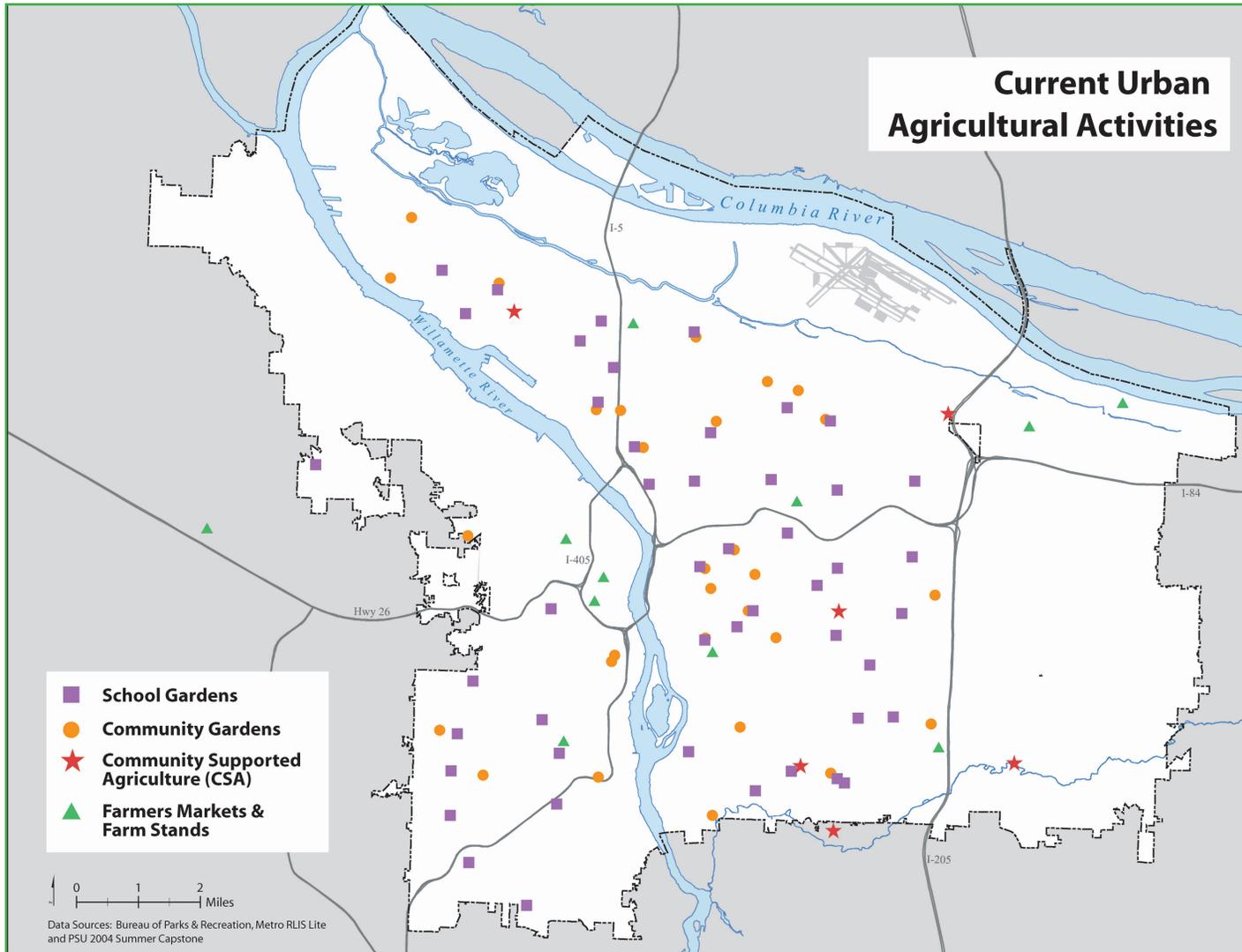
- City of Portland’s Urban Agricultural Resolution



Reed Community Garden, SE Portland



# LOCAL AND REGIONAL CONTEXT



# SITE SNAPSHOT



## Potential Uses:

This site presents an excellent opportunity to simultaneously showcase agricultural production and environmental restoration. R10 zoning allows agriculture as a conditional use. Given the nature of the site, it would be most effectively managed by a dedicated group that worked in tandem with the City to showcase innovative land management techniques such as rainwater harvesting as well as promoting urban food production.

Agency	PARKS
Acres	4.75
District	SE
Zoning	R10
Bus Route(s)	17 Holgate
Surrounding Uses	Residential, open space
Access	Bus and bike accessible, pedestrian friendly, parking

## Existing Conditions:

A large site of about 4.75 acres, 4.3 of which are pervious. It has tall grass and a few trees and a fence dividing the east and west sides of the site. There is a bus stop within 1/4 mile, but the nearest sidewalk is 50 feet away, and there is some parking on one side of the site. There is a water main within 100 feet of the site and solar access is good.



# SNAPSHOT: CHICAGO



**City Farm, a project of Resource Center. Source: Resource Center**

## **Urban Farming**

Several organizations, including Resource Center, Institute for Community Resource Development and Urban Farmers in Training have established urban farms in Chicago in recent years. The various programs tie urban agriculture to educational programs for students, farmer training programs, job creation and food accessibility in low-income Chicago neighborhoods. Some of these farms are on lands made available by the City of Chicago as temporary uses, until the land is redeveloped.

Living up to its green image, Chicago has a wide variety of urban agricultural activities. Most of the programs below are led by nonprofit organizations, though most or all receive some support from the City of Chicago, through land donations or financial support.

## **Community Gardens**

Chicago is home to over 230 community gardens. These are gardens set up on vacant city-owned land, but not run by the City. However, the Chicago Botanical Garden and Chicago Department of the Environment offer support for community gardens citywide.

Neighborspace, a nonprofit set up by the City of Chicago and other governmental agencies, manages much of the city's vacant land for creating green spaces and gardens.

## **Business Incubation**

The Openlands Project organized Homegrown Chicago, a weekly gardener's market in the summer featuring pesticide-free vegetables and flowers grown in backyard and community gardens, as well as crafts and cultural activities. Heifer Project International has two urban agriculture programs active in Chicago, through which youth receive job training and scholarship funds while raising fish, worms and growing vegetables.

## **Rehabilitation Through Gardening**

The Cook County Sheriff's Garden serves the dual purpose of growing food for the poor and homeless while helping to rehabilitate non-violent drug offenders in the Cook County Jail. The program was started in 1993 with help from the University of Illinois Extension Urban Gardening Program, and grows a variety of vegetables on 6,000 square feet. Much of the food goes to a Women, Infants and Children food distribution site; more is donated to a café serving the homeless population.



Urban agriculture programming will need support at various levels of government. There are several laws, regulations and planning documents in Oregon that are relevant to urban agriculture. As interest in expanding urban agriculture opportunities continues to grow, Portland needs to develop and provide sound planning guidance regarding what is possible, where it's possible, and what this activity could look like. A brief exploration of some of these policies, plans, and zoning regulations will help to inform strategies for implementing urban agriculture within the City of Portland.

### State of Oregon Statutes and Land Use Goals

Urban agriculture is sanctioned by Oregon state statutes as follows:

#### 197.752. Urban lands available for development

*(1) Lands within urban growth boundaries shall be available for urban development concurrent with the provision of key urban facilities and services in accordance with locally adopted development standards.*

*(2) Notwithstanding subsection (1) of this section, lands not needed for urban uses during the planning period may be designated for agricultural, forest or other non-urban uses.*

Several of Oregon's Statewide Land Use Planning Goals have great importance for the success of urban agriculture. The urban agricultural inventory directly supports the following statewide land use planning goals:

#### Goal 1 Citizen Involvement

Urban agriculture promotes civic engagement and participation by providing space and opportunity for community members to collaborate in food production and gardening potential within their

neighborhood.

#### Goal 2 Land Use Planning

The City of Portland's urban agricultural inventory will enable involved bureaus to determine the feasibility of food production opportunities for available, publicly-held lands. This effort will efficiently utilize vacant lands within the Urban Growth Boundary and promote community development and food production for the City of Portland.

#### Goal 5 Open Spaces and Natural Resources

Open space is a priority in greening urban centers. Urban agriculture can be used as a model for incorporating functional production with community space and greening the city.

#### Goal 6 Land, Air and Water Quality

Increasing/preserving pervious surfaces in the city (gardens, farms, etc.) helps improve water quality through stormwater management, and providing local options for food decreases vehicle miles traveled (by freight and others), lowering CO<sup>2</sup> emissions.

#### Goal 8 Recreational Needs

Urban agriculture meets recreational interests of community members while simultaneously providing the opportunity for education and food production.

#### Goal 9 Economic Development

Urban agriculture has the potential to encourage economic development through the promotion of entrepreneurial skills and community empowerment.



# LOCAL AND REGIONAL CONTEXT

## **Goal 11 Public Facilities and Services**

The urban agricultural inventory takes a proactive approach to effectively utilizing publicly-held lands for community interests and civic engagement.

## **Goal 15 Willamette Greenway**

Greenspaces within the UGB enhance the preservation of the Willamette Greenway by building awareness among community members of the importance of green space and environmental protection on behalf of all species. Urban agricultural activities, demonstrating a type of greenspace, will contribute to this awareness.

The following statewide land use planning goals are presently challenging to the notion of urban agriculture:

## **Goal 3 Agricultural Lands**

Urban agriculture stretches the concept of agriculture as a rural activity and works to integrate food production, education, and awareness with community development and urban design. While successful at preserving agricultural lands outside of established urban growth boundaries, Goal 3 should also include some measure of protection for the remaining agricultural lands within UGBs. Remaining agricultural lands within UGBs are living reminders of Oregon's cultural and economic heritage. Preserving agricultural land within the UGB is a form of historic preservation that should be pursued with the same enthusiasm as the preservation of historic buildings.

## **Goal 10 Housing**

Municipalities are expected to maintain an inventory and supply of buildable land that can provide for a diverse mix of housing types.

Establishing permanent urban agricultural operations on lands zoned for housing will diminish the supply of buildable lands.

## **Regional Policies**

### *Housing Potential and Metro's Urban Growth Boundary*

A potential challenge facing the use of vacant land for urban agriculture is the need for an adequate supply of regional housing and the perception that this use of land inside the UGB will diminish the region's buildable land supply.

Title 1 of Metro's Urban Growth Management Functional Plan "facilitates efficient use of land within the Urban Growth Boundary (UGB)." Metro requires all jurisdictions within its purview to submit an annual compliance report in accordance with the Plan detailing the changes in capacity for new residential development within that jurisdiction.

Given the region's enthusiasm for greenspaces protection, there has been ongoing discussion about how the protection of lands as greenspace within the UGB may negatively impact the regional housing supply. If land is preserved within the UGB for non-housing purposes, potential land for housing is lost, forcing a UGB expansion and consumption of adjacent farmland.

Recognizing that jurisdictions may face a disincentive to protect greenspaces if such protection reduces their amount of buildable land, Metro Council passed Resolution #97-2562B in September 1997. The resolution states that "Metro encourages all local jurisdictions...to actively protect in perpetuity parks, open space, recreational trails,



and other sensitive natural areas...even if they include what has been classified as buildable lands in Metro’s inventory.” The resolution goes on to state that given appropriate documentation, a jurisdiction will receive an exception for the decline in net buildable land from greenspace preservation consistent with Title 8 of the Growth Management Functional Plan.

Given the social and environmental contributions of urban agriculture to the region, this type of land use should also be protected as part of the green infrastructure of the Portland metropolitan region.

### **City of Portland Policies, Plans and Zoning Regulations**

#### *Portland’s Buildable Land Supply*

City of Portland staff calculate the city’s buildable land supply on the base zoning designation of each parcel. City-owned property must also be included in this buildable land calculation. Urban agricultural activities taking place on land zoned for a residential use do not take that land out of the potential housing supply. However, if the zoning of a residential property is changed to accommodate urban agriculture, then the housing potential of that property is lost.

While it may appear attractive to establish urban agricultural activities without a zoning change, the arrangement lacks the permanence that is essential to the success of farming. In this case, what may look on the surface to be a gardening activity functions as a form of land banking whereby the activity can be discontinued at any time and converted to housing.

#### *Agriculture in Floodplains*

While agriculture has traditionally flourished in the rich soils of floodplains, current environmental regulations designed to protect water quality may restrict agricultural uses in floodplains. One-hundred and eleven properties identified in this inventory intersect the floodplain. FEMA is concerned with keeping structures out of floodplains, making agriculture a potentially viable use on these identified properties. FEMA regulates development on floodplains through “balance cut and fill” whereby any “fill” of the property with a structure must be mitigated by the “cut” of a structure on another property. If an agricultural operation is established without any structures or “fill,” then no mitigation will have to take place. Establishing agricultural operations in floodplains with structures will require a mitigation process that has not been tested to date.

The Bureau of Environmental Services has a “willing seller” program designed to purchase properties in floodplains. These properties are often sites for resource enhancement projects. It may be possible to explore small-scale agricultural pilot projects as resource enhancement projects on these properties.

#### *Portland Parks and Recreation*

The Portland Parks and Recreation Bureau strives to provide meaningful opportunities for Portlanders to recreate and gather outdoors. In the Parks 2020 Vision, identified issues facing the parks system included too few community gardens to meet citizens’ needs, and natural areas being lost to development.



# LOCAL AND REGIONAL CONTEXT

## Where to Get It

### BES “Willing Seller” program

[www.portlandonline.com/shared/cfm/image.cfm?id=54342](http://www.portlandonline.com/shared/cfm/image.cfm?id=54342)

### Community gardens in the Portland zoning code

Title 33.920.460

### Agriculture as defined in the Portland zoning code

Title 33.920.500

### Portland Parks and Recreation, Parks 2020 Vision

[www.parks.ci.portland.or.us/PlansReports/2020/2020.htm](http://www.parks.ci.portland.or.us/PlansReports/2020/2020.htm)

## Zoning

Zoning is a tool used by planners to separate incompatible uses and promote public safety, health and well-being. Many of the attendant characteristics of large-scale agriculture like noises, smells, sprays and unpredictable hours of operation are the very residential nuisances that zoning seeks to protect residential neighborhoods from. Large-scale agriculture and high-density housing do not mix well. Senate Bill 100 established the precedent for protecting large-scale agriculture in rural areas while fostering dense, urban areas through the establishment of a UGB. In this system, the challenges that large-scale agriculture present to residential areas begs for these very different uses to be separated.

## *Incorporating Urban Agriculture into Portland’s Zoning Code*

While the Portland zoning code offers a definition of Agriculture, the definition does not speak to the small-scale activities that may be suitable on the lands identified during the recently completed inventory. Eighty percent of Oregon’s agricultural produce is exported out of state. In contrast, urban agricultural products will primarily be consumed locally.. These operations will be small-scale and can be designed and operationalized in such a manner as to minimize the potential for conflicts with surrounding uses. Operations should be established with careful attention to the potential impacts related to:

- Transportation
- Noise
- Smells
- Pollution
- Livability
- Public services and parking

The City of Portland’s support for urban agriculture may be enhanced by a definition of small-scale agriculture that more closely defines the characteristics of these activities.

Other ways to increase the opportunity and capacity for urban agriculture in Portland by amending the zoning code include:

- **Code Maintenance:**

While agriculture is a permitted use in commercial and employment zones, some current code provisions restrict this type of use. Agriculture is generally an “exterior work activity;” however, exterior work activities are prohibited in Title 33.130.245 D for commercial



## Policy and Zoning Analysis

zones. Exterior work activities are “not allowed” according to Title 33.140.245 D for employment zones. Exterior work activities can be allowed in employment zones if approved through an adjustment review that would allow an exception to the standard.

- **Define Retail as an Accessory Use:**

Agriculture is currently permitted in the open space zone outright while retail activities are not. Retail activities are only permitted in open space zones if they are related to a parks and open space use, or they are temporary. Zenger Farm at 11741 SE Foster Rd. is currently only permitted to conduct on-site sales of farm produce on a seasonal basis.

For the true economic potential of urban agriculture to be realized, operations should be permitted to sell their produce on-site, year-round, with certain conditions that will ensure the existing character of the neighborhood is maintained. Potential zoning language remedies to this situation include changing the footnote in the open space zone to include agriculture or to include produce stands and retail sales as an accessory use for the zoning definition of agriculture. If these uses were classified as an “accessory use,” then no conditional use permit would need to be obtained.

- **Zone Change:**

One possibility to create more opportunity for urban agriculture is to change the zoning of particular parcels on which agriculture is currently prohibited. Of the approximately 430 individual parcels included in the inventory, 72 of them are located in zones in which agriculture is prohibited. Generally referred to as “spot” zoning, changing the zoning of an individual property is a timely and costly process. Obtaining a zone change for a particular property

requires a type III land use review, an in-depth review that requires public hearings and meetings with neighborhood associations. A zone change will also require a zoning map amendment, the process of which is described in Title 33.855. As groups continue to approach the cities with enquiries regarding potential urban agricultural uses, the need to address the issue by reviewing all relevant policy and zoning will become increasingly apparent.

### Resources

#### City of Portland, Bureau of Development Services – Zoning and Land Development

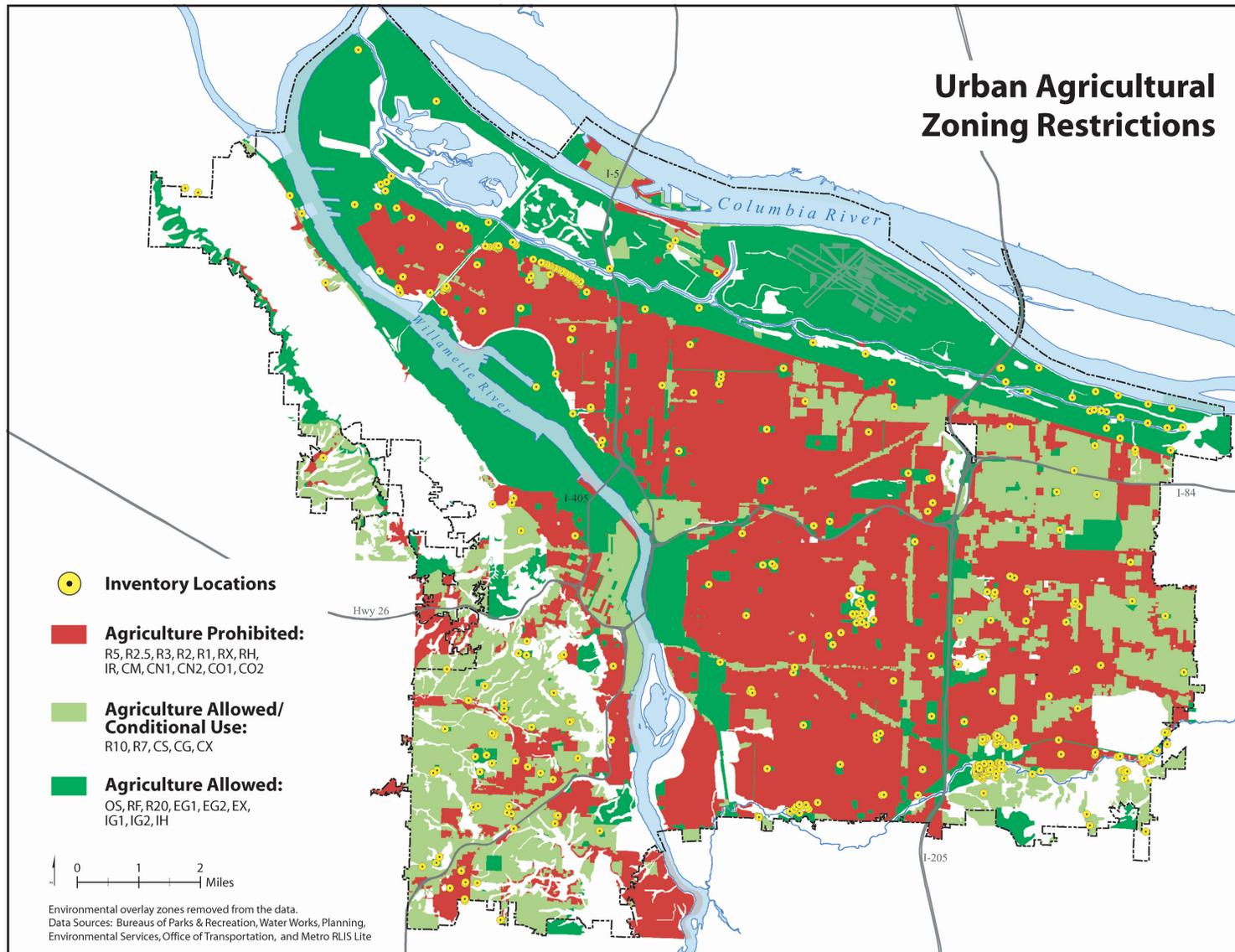
<http://www.bds.ci.portland.or.us/zlu/zone-main.htm>

#### FEMA Floodplain Management

[http://www.fema.gov/regions/v/env/env6\\_3.shtm](http://www.fema.gov/regions/v/env/env6_3.shtm)



# LOCAL AND REGIONAL CONTEXT



# SNAPSHOT: SEATTLE



**Sunflowers growing at a P-Patch garden.**  
Source: City of Seattle

## **Introduction**

Though the city's community garden program was begun at about the same time as Portland's, the city has been aggressive about promoting a variety of opportunities for using urban agriculture for benefitting many of Seattle's residents.

## **Community Gardens**

Seattle's community garden program, P-Patch, started in the 1970s and is now housed in the Department of Neighborhoods with three full-time and one part-time staff. Fifty-four gardens offer over 1,900 garden plots. A recent partnership with Seattle City Light has allowed four new gardens to be established underneath transformer lines to take advantage of this vacant but usable land resource.

## **Urban Farming**

Seattle Tilth's City Chickens program teaches people how to raise chickens in urban environments. The City of Seattle, like Portland, allows up to three domestic fowl per lot. Seattle Tilth's urban gardens are open year-round for visitors; they also house a compost demonstration and children's garden.

## **Business Incubation**

Cultivating Communities is a program that grew out of P-Patch. This is a partnership with Seattle Housing Authority to work with recent immigrants who live in public housing in a gardening project. This project combines community gardens, a CSA model and growing for self-sufficiency for very poor individuals who often have few skills besides farming. The program began in 1995 and now has 19 community gardens for public housing residents. The CSA ventures (three of them) in 2000 netted \$30,000 in produce sales from 150 subscribers, fed 40 families with organic vegetables, and paid each family approximately \$500 for the year for their efforts. All of this occurs while beautifying areas of the city and creating safe places.

Seattle's P-Patch Community Gardens  
[www.cityofseattle.net/neighborhoods/ppatch](http://www.cityofseattle.net/neighborhoods/ppatch)





# Challenges and Opportunities



## Challenges and Opportunities



Key stakeholder interviews and focus groups revealed many challenges and opportunities facing urban agriculture in Portland.

### Challenges

#### *Funding*

The proposed budget cuts to the Portland Community Gardens program in the winter of 2005 galvanized a public outcry that saved the program's funding until the next budget cycle. The demand for community gardening plots currently outstrips the program's ability to provide for it. In 2001, the waiting list had 400 people, with a 5-year wait at Sabin Community Garden in Northeast Portland. While new garden sites have been identified, funding is not in place to develop them as quickly as the lands are becoming available. The City of Portland's Community Gardens program receives funding through the general fund and user fees.

While the Parks 2020 Vision Plan identifies that there are too few community gardens, the Portland/Multnomah Food Policy Council states that a primary barrier to growing the program is funding at sufficient levels. Despite the program's popularity, the City has not formulated a strategic response to manage it in a financially sustainable manner.

#### *Commitment to Permanence*

Land tenure is an issue at community gardens not owned by the City of Portland. Reed College, home of one of the city's largest community gardens, plans to build more student housing on the community garden site. At 1.9 acres, this community garden is one of the largest gardens in the program, and its loss would significantly reduce the number of

garden plots the program has to offer. Blair Garden is also on private land and its owners have plans to sell that land. In order to thrive, Urban Agricultural lands identified and utilized through this inventory need some guarantee of permanence.



**A neighbor of Sewellcrest Community Garden**

*"I think we're at that pivotal point like we were with Green Spaces about 15-20 years ago, where you get enough people to go 'yeah, wait a minute, it's important to have farming and gardening in the city'."*

- Steve Johnson, PSU



# CHALLENGES AND OPPORTUNITIES

## *Community Garden Site Selection Criteria*

The City of Portland Community Gardens program has developed a series of site selection criteria that require new gardens to be fenced and have adequate parking facilities. These requirements are costly and funding has already been identified as a barrier to the establishment of community garden facilities. While remaining sensitive to the precedent set for establishing successful gardens, the Portland Community Gardens program site selection criteria should be relaxed to encourage the establishment of further low-cost urban agriculture opportunities.

## *Growing Agricultural Products for Profit*

### **Community Gardens**

Community gardeners cannot sell their produce for profit. This rule was established in part to reduce potential competition with farmers' markets and ensure that community gardens are utilized for family-scale production and not for entrepreneurial purposes.

### **Other Urban Agriculture**

Stakeholders identified the sale of agricultural produce grown on public lands as an issue that needs to be explored in greater depth before implementation. However, current CSA operations on public lands, such as 47<sup>th</sup> Avenue Farms have lease arrangements with their landowners that allow selling of produce.

### *Water*

Urban agricultural operations often do not have access to well water and must pay for municipal water. Water costs have been noted as the highest operating expense at Zenger Farm. Other cities have made arrangements to absorb some or all of the water costs used in various

urban agricultural operations.

### **Resources**

#### **National Sustainable Agriculture Information Service**

[attra.ncat.org/guide/resource.pdf](http://attra.ncat.org/guide/resource.pdf)

#### **USDA Community Food Security Assessment Toolkit**

[www.ers.usda.gov/publications/efan02013/](http://www.ers.usda.gov/publications/efan02013/)

#### **Urban Renewal Districts**

Urban Renewal Districts are established to encourage community development and investment in specific neighborhoods that struggle with deterioration, economic disinvestment, or poor planning strategies.  
[www.pdc.us/about\\_pdc/urban\\_renewal.asp](http://www.pdc.us/about_pdc/urban_renewal.asp)

*"As you localize...you start empowering every member of the community to have control of their food, whether they grow it themselves or their neighbor grows it...And that completely changes the way we look at food. Food stops being a commodity and starts being something important. That's the central problem in our agriculture system: we've commodified food, and it's not a commodity."* - Will Newman, OSALT

*"City Council is committed to continuing efforts to cultivate Community Gardens throughout the City of Portland as well as providing other agricultural opportunities."*

- City of Portland's Urban Agricultural Resolution

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## Challenges and Opportunities



### *Liability and Ongoing Maintenance*

The City of Portland's Urban Forestry division develops standards and guidelines that guide tree planting activities in the City. The planting of fruit trees in the right-of-way is currently prohibited due to prospect of nuisance and maintenance costs associated with dropping fruit. Insurance and maintenance costs serve as a large barrier to the potential for streets to be lined with fruit producing trees.

## Opportunities

### *Creative Funding Strategies*

Funding strategies are important to ensure success in urban agricultural efforts. This project has focused on city funding for publicly held lands. However, in the broader context, privately held lands and foundation investment hold additional potential for agricultural investment. Private-public collaborative efforts will play an important role in the future of urban food production and community gardening as land resources become more scarce. There are many state and federal level programs designed to enhance agricultural potential across the landscape, including the USDA Community Food Security programming and other funded operations. Those sites identified within Urban Renewal districts may be able to secure urban renewal area funding. Zenger Farm was able to secure such funding based on its contributions to regional livability and environmental quality. Other opportunities exist for urban agricultural programs to utilize funding from other established programs with which it shares goals.

### *Showcasing Stormwater Management*

Urban Agricultural operations may serve as showcase sites for innovative stormwater management and water conservation technologies.

### *Metro's Greenspaces Program*

The regional government is backed by strong citizen support in their efforts to develop a comprehensive greenspace network. Approximately 20 Metro-owned properties are currently leased for agricultural purposes. Sauvie Island Organics is a 13-acre CSA adjoining the Howell House property, a cultural and historic resource. The integration of Urban Agricultural uses into the established Greenspaces program could serve to facilitate the establishment of financially stable programs.

### *Gauging Interest and Demand*

The only current quantifiable method of gauging demand for access to urban agricultural opportunities is the City of Portland's Community Garden waitlist. Analysis of the waitlist shows that demand is highest near established community gardens. Utilization of the properties identified in the inventory process requires the support of the surrounding neighborhood. An outreach campaign should be developed to gauge the level of neighborhood interest for urban agricultural operations. Half of those recently surveyed at the Portland Farmers' Market said they would be "somewhat" or "very likely" to use a community garden site if one were available to them.

### *Greater Collaboration with the Office of Neighborhood Involvement*

A successful urban agricultural program will feature a diverse array of uses and administrative configurations. Portland's Office of



# CHALLENGES AND OPPORTUNITIES

Neighborhood Involvement (ONI) is an agency whose mission is to enhance the quality of Portland's neighborhoods through community participation and should serve to promote urban agriculture on a neighborhood level. ONI assists neighborhood associations in planning and developing programs for public participation, crime prevention, and dispute resolution. ONI also maintains formal partnerships with other city agencies, such as Bureau of Environmental Services, to do public outreach on how to maintain clean rivers.

The lack of a formalized support role with Parks does not mean that other groups working in conjunction with ONI have not been successfully partnered with the neighborhoods to develop more growing space. District coalitions such as Central NE Neighbors (CNN) were instrumental in assisting a grassroots effort within the Cully neighborhood. Sited next to St. Charles Catholic Church, the Cully Community Garden now provides much of its bounty to nearby low-income and minority residents.

## *Nonprofit Model*

Urban agriculture programming can be expanded through local nonprofit organizations. These agencies would run various educational and social programs, providing maintenance, information, and guidance in the running of various agricultural projects around the city. Nonprofits may be able to manage some aspects of urban agricultural programming more effectively than the City.

## *Entrepreneurial Urban Agriculture*

Entrepreneurial opportunities enhance the social and economic components of urban agriculture potential. Community Development Corporations and City Bureaus such as the Housing Authority of

## **Local Resources**

### **Portland Community Gardens**

<http://www.parks.ci.portland.or.us>

### **Central Northeast Neighbors**

[www.explorepx.com/cnn.html](http://www.explorepx.com/cnn.html)

### **Hacienda CDC**

[www.haciendacdc.org/](http://www.haciendacdc.org/)

### **Housing Authority of Portland**

[www.hapdx.org/](http://www.hapdx.org/)

### **Bureau of Housing and Community Development**

[www.portlandonline.com/bhcd/](http://www.portlandonline.com/bhcd/)

### **Oregon Sustainable Agriculture Land Trust**

[www.osalt.org/](http://www.osalt.org/)

### **Office of Neighborhood Involvement**

<http://www.portlandonline.com/oni/>

### **Project for Public Spaces**

[www.pps.org](http://www.pps.org)

Portland and the Bureau of Housing and Community Development work in tandem with their client base to expand urban agricultural operations. Hacienda Community Development Corporation in Northeast Portland and other local nonprofits are focused on providing job skills and training to immigrant populations and others within the metropolitan region. Agricultural production provides healthy food and business opportunities simultaneously. The job training skills gained will empower residents and increase equity across the urban landscape.

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## Challenges and Opportunities



### *Friends Groups*

The City of Portland's tradition of civic involvement has given rise to a number of groups that work in tandem with the City to manage city-owned properties. Examples include the Friends of Zenger Farm, the Friends of Community Gardens and Friends of Crystal Springs Rhododendron Garden. These Friends groups are able to provide human resources and structural support to specific organizations, thus supporting the City and the organization in offering unique programming and opportunities to the public.

### *Land Trusts*

Land trusts have been set up across the country as a way of preserving land for a specific purpose. This is typically done on private lands, but may be incorporated into the framework of urban agriculture. Agricultural efforts take several years before mature production is possible. With this understanding, land trusts could preserve public lands for agricultural uses over a ten-to twenty-year timeframe within urban centers. This would ensure food production and greenspace over time within our cities.

### *Rooftop Gardens*

One strategy that needs further exploration is utilizing rooftop space for food production and community gardening potential. "Ecoroofs," have been gaining acceptance in the Portland area and nationally as providing multiple benefits, such as stormwater management, air and water quality improvement, noise reduction, and wildlife habitat. Ecoroofs are generally made up of drought-resistant plants like sedums which need little maintenance. Portland rooftop gardens, in

comparison, are considered a different application: they can include food production, container plants, and recreation or relaxation opportunities for building inhabitants.

### *FAR Bonus*

The City of Portland Zoning Code offers a Floor Area Ratio (FAR) bonus for those buildings utilizing rooftop gardens. This means that developers converting roof space to rooftop gardens are allowed to build higher than otherwise would be allowed. The bonus also applies to ecoroofs, which are established primarily for stormwater mitigation. The opportunities for utilizing Rooftop Gardens are not as lucrative as those for utilizing ecoroofs.

### *Rights-of-Way*

Another innovative use of space that has been used in developing countries extensively is agriculture in utility line cuts. Seattle recently developed four community gardens under Seattle City Light transmission lines; while there are safety concerns, thus far, the gardens have been quite successful. Current practices in Portland leave these strips of land to pampas grass and English ivy. Allocating these lands to community groups and families interested in tending plots could decrease maintenance costs and restores green cover to the cleared areas.

There was significant interest at the beginning of the project to explore using road right-of-way plots and curb strips for agricultural development. Concerns were raised about the increased hazard and pollution associated with these sites. However, using these parcels of land for gardening may be feasible with foresight and imagination. For example, interested parties could use potentially polluted sites for decorative flowers or other non-edible products, simultaneously



# CHALLENGES AND OPPORTUNITIES

contributing to attractive green space and reducing the need for public maintenance of the land.

## *Permaculture Design Systems*

Permaculture is a design system that has significant potential for urban application. Appropriate for small plots of land, permaculture systems are designed to maximize production while minimizing inputs like water, chemicals, and labor. The Permaculture Guild and Portland Permaculture Institute are two valuable community resources for learning more about these design systems.

### **Resources**

#### **City of Portland Ecoroof Floor/Area Ratio Bonus Option**

[www.portlandonline.com/shared/cfm/image.cfm?id=53363](http://www.portlandonline.com/shared/cfm/image.cfm?id=53363)

#### **Portland Permaculture Guild**

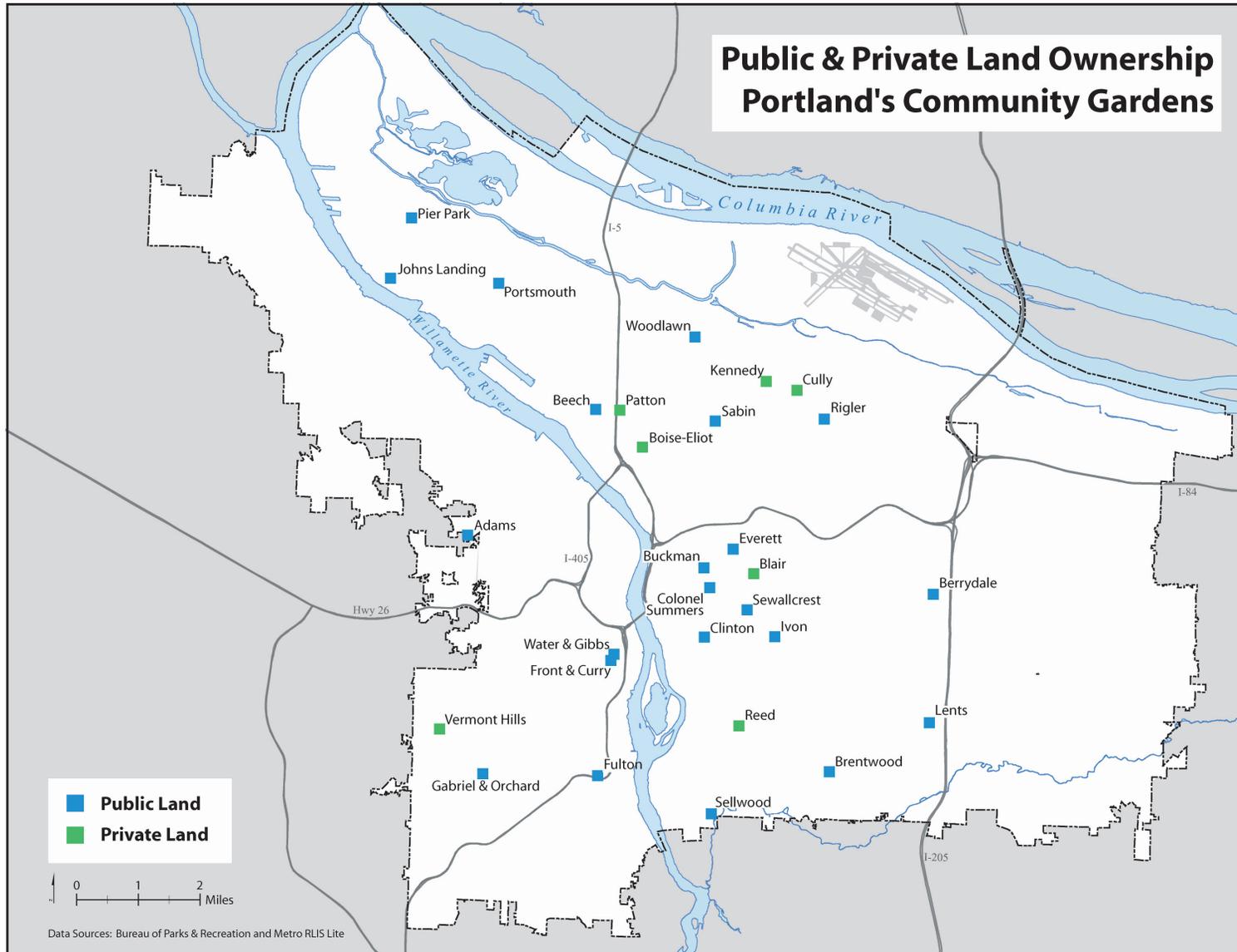
[www.portlandpermacultureguild.org](http://www.portlandpermacultureguild.org)

#### **Portland Permaculture Institute**

[www.portlandpermaculture.com](http://www.portlandpermaculture.com)

#### **City Repair**

[www.cityrepair.org](http://www.cityrepair.org)



# SITE SNAPSHOT



## Potential Uses:

Highly accessible by all modes of transportation, the R5 zoning of this site currently prohibits agricultural use. While a community garden is permitted, the site characteristics do not lend themselves well to this type of use. The City of Portland's Community Gardens Program has established site visibility as key criteria for a successful community garden. The site is bound by railroad tracks and a steep ravine and is frequented by a local homeless population. Establishing an agricultural use on this site would require strong neighborhood enthusiasm and interest.

Agency	WATER
Acres	3.1
District	North
Zoning	R5
Bus Route(s)	40 Mocks Crest
Surrounding Uses	SFR and MFR, railroad tracks
Access	Good pedestrian access, adjacent bike trail

## Existing Conditions:

The water tank on this site is unused and the bureau does not have a plan to use the site for the next 60-80 years. The property is adjacent to the Peninsula Crossing Bike Trail, a quarter mile from the nearest busline and has nearby parking. The site is also frequented by the local homeless population but this has not presented a major problem to the neighborhood.



# SNAPSHOT: VANCOUVER



**Cypress Community Garden**  
**Source: Cypress Community Garden**

Vancouver, British Columbia's innovative planning tradition addressed farmland preservation in the 1970s. In contrast to Oregon's use of urban growth boundaries, British Columbia established Agricultural Land Reserves to protect farmland near the urban area. These areas are firmly off limits to residential development. Inside the city, urban agriculture is thriving through community gardens, urban farms, university activities and municipal programming.

## **Community Gardens**

The City of Vancouver defines community gardens as a “community environmental education program operated by a non-profit society.”

## **Urban Farming**

Urban agriculture is promoted by City Farmer, dubbed Canada's Office of Urban Agriculture. City Farmer gets funding from the City of Vancouver to operate a demonstration garden that showcases pesticide-free gardening, water conservation and composting. Youth gardening programs are also thriving and receive funding through the Community Arts Council of Vancouver and the Vancouver Parks Board.

## **University and Educational activities**

The University of British Columbia has a 98-acre farm that supplies food to campus food service providers and serves as an educational forum for food systems academic inquiries. Agriculture in the Classroom is a non-profit foundation established in British Columbia to promote an awareness and understanding in BC schools of sustainable agriculture and food systems.

## **City Support**

The City of Vancouver established a Food Policy Council in 2004 and has funded two full-time positions, Food Policy Council Coordinator and Food Policy Planner to support its work. The City commissioned a 100-page urban agriculture strategy for a new development called Southeast False Creek. A Greenways Plan from 1992 called for Vancouver to become a “city of gardens” and for investigation into the possibility of urban agriculture being part of the programming of public spaces.





# Recommendations





## Recommendations

Strong local food production and distribution systems can contribute to food security, community self-reliance, and better health. Long considered an innovative center of planning activity, Portland is in a unique position to creatively use vacant public land to increase the capacity of the local food production system and increase food security. The food system is an integral part of the physical, economic, social and spiritual well-being of those places about which planners care:

*Food is unique among human needs in its basic connections, among others, to land; in the centrality of its wholesomeness and nutrition to health; and in the social, economic, ecological, and political implications about the locations of its sources. To be truly concerned about improving human settlements, planners need to incorporate food issues into their working models.*

(Pothukuchi, et al. "The Food System: A Stranger to the Planning Field." Journal of the American Planning Association, vol. 66 No. 2 Spring 2000, 118.)

Portland has a unique opportunity to elevate the planning focus on urban agriculture and increase opportunities for its implementation. The following recommendations provide an initial framework for future action.

### **1: Develop an Inventory Management Plan**

The Office of Sustainable Development, Office of Neighborhood Involvement, and the Food Policy Council should develop a plan for administering the use of these sites that is just, equitable and sensitive to the needs and characteristics of surrounding communities. The inventory data should also be made accessible to community groups, educators, farmers and citizens who are interested in using these lands.

### **2: Expand the Inventory and Develop Evaluation Criteria**

To fully realize the potential of urban agriculture, the City should expand the inventory further and more completely develop the criteria using the collaborative efforts of City bureaus for reviewing parcel suitability.

### **3: Create An Urban Agriculture Commission**

Create an Urban Agriculture Commission similar to the Urban Forestry Commission. This commission would consist of citizens and a City representative, and would review plans and policies and makes recommendations on urban agricultural issues.

### **4: Adopt a Formal Policy on Urban Agriculture**

Given stakeholder awareness of the inventory and support for urban agricultural activities, the City should craft a comprehensive urban agriculture policy that addresses the environmental, health, and social benefits of urban agriculture and provides a vision for the future of urban agriculture in Portland.

### **5: Conduct a Comprehensive Review of Policy and Zoning Obstacles**

To fully realize the benefits of urban agriculture, the City should conduct a detailed review of Portland's current policy and zoning to identify obstacles that could be mitigated to improve the opportunities to realize urban agriculture.

# SNAPSHOT: TORONTO



**Toronto's Food Policy Council actively promotes urban agriculture**  
**Source: FoodShare**

## **Introduction**

Urban agriculture in Toronto happens in many forms, including non-profit educational gardens, community gardens, an urban agricultural program, an innovative urban agricultural demonstration business, advocacy at the municipal level with the Food Policy Council (a subcommittee of the Toronto Board of Health), and an active advocacy group called Food Share. The Food Policy Council and Food Share conduct research on agricultural methods and how to city's capacity to provide its own food. The City of Toronto supports these activities by funding a small, full time Food Policy Council staff.

## **Community Gardens:**

As a result of the Toronto Food Policy Council's (a subcommittee of the Toronto Board of Health) community gardening strategy, the City's program has expanded from 50 gardens in 1991 to 122 in 2001. The program is coordinated by the Toronto Community Garden Network, a project of FoodShare. Community gardens are located on church properties, community centers, parks, and private property and are maintained by gardeners, institutions, nonprofit organizations, local governments, and property managers. FoodShare helps facilitate these gardens by educating people about how to start and maintain them, as well as providing educational materials on gardening to the public.

## **Urban Agriculture Program:**

Annex Organics started the "Field to Table Urban Agriculture Project," a showcase for innovative urban agricultural methods. In a downtown warehouse and a 6,000sq. ft. off-site garden, this group demonstrates and tests methods for beekeeping, living machines, urban gardens, composting systems and rooftop gardens and greenhouses, among many other things. They show others how to start up similar businesses in the city.

## **Food Waste Recovery:**

The Food Policy Council has led several efforts resulting in citywide composting programs, brownfield remediation using compost, a green roof on City Hall (1997) and helped startup businesses that use the products of composting as a source of income.



# Appendices



## The Diggable City Project Team



### Amanda Rhoads

Amanda is the Community Food System Graduate Assistant in the School of Urban Studies and Planning, where she is helping to organize University faculty involved in food issues in the new Food and Community Working Group. Before moving to Portland, she was Program Manager for Green Energy Ohio, a statewide renewable energy advocacy organization. Amanda first explored food issues while working on a community-supported agriculture farm in rural Wisconsin in 1998.



### Kevin Balmer

Kevin works as a GIS analyst for CNF Inc., a multinational freight transportation and logistics company. Chair of the PSU student group Sustainable Community Media, Kevin developed a digital video document of the Diggable City project. He lives with his girlfriend Cate and farms vegetables out of his yard in NE Portland.



### Heather Kaplinger

Heather is a graduate research assistant for the Institute of Portland Metropolitan Studies, Community Geography Project. She currently develops GIS curriculum data and maintains the Teaching American History webpage. Heather also is the student ex-officio of the Oregon Progress Board, and is one of the teams' data wranglers.



### Melissa Peterson

Melissa Peterson has worked as a Research Assistant for PSU's Population Research Center for the past three years. She hopes to incorporate her background in natural sciences with urban design and land use planning. She is trekking across Spain this summer to celebrate finishing up the MURP program.



### James Gill

After too many years in the software industry, James decided to act on his long-standing desire to build and educate others about truly sustainable, community-oriented places and systems. He enjoys woodworking, creative writing, guitar, ancient history, full-contact origami, and hitchhiking around the galaxy.



### Paul Rosenbloom

A strong interest in the potential of bioregional planning attracted Paul to the planning field. After an internship with the Portland/Multnomah Food Policy Council and work with the Port of Portland on innovative solid waste and recycling programs, Paul hopes to apply his planning skills to strengthening the capacity of the local food system.



### Joe Miller

Joe has focused his efforts on water resources, environmental management and GIS applications in planning. He currently works for the U.S. Geological Survey as a GIS Technician for the General Hydrologic Studies Section. He is looking forward to camping, rafting, skiing, biking, hiking and climbing and other non-computer related activities with family and friends.



### Teak Wall

Teak is currently an Intern for the City of Portland, Office of Transportation's Division Green Street/Main Street Project. She is interested in sustainability in all aspects of urban planning; specifically transportation, community development, land use, and food. Her passions include knitting, Brent, riding her Schwinn Cruiser bicycle, drinking tea, sitting on the porch, walking, and making monkey noises, among other things.



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# APPENDIX

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## Additional Resources



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# APPENDICES



**Annuals** - plants that are planted each year and last for one season.

**Aquaculture** - A form of agriculture that involves the propagation, cultivation and marketing of aquatic animals and plants.

**Biodiversity** - The variety of species and ecosystems, the variability of genes within the species and the ecological complexes of which they are a part.

**Conservation Zone(City of Portland)** - The “C”, Environmental Conservation Overlay Zone is intended to conserve important resources and the functions they perform. This zone is applied in areas where the natural resource can be protected while allowing environmentally-sensitive development.

**Community Garden** – A neighborhood-based urban agricultural activity that can contribute to community development, environmental awareness, positive social interaction and community education.

**Compost** - A mixture that consists largely of decayed organic matter and is used for fertilizing and conditioning land.

**Community Supported Agriculture (CSA)** - A practice where people purchase a share of a farm’s harvest, helping to cover its yearly operating budget. In exchange, the farm provides a supply of fresh produce throughout its growing season.

**Eco-roofs** - Thin layers of living plants installed on top of conventional roofs. Properly designed, they are stable, living ecosystems that replicate many of the processes found in nature.

**Farm Stand** – A temporary or permanent structure used for the display and sale of agricultural products.

**Food Miles** - The distance food travels from where it is grown or raised to where it is ultimately purchased by the consumer.

**Food Policy Council** - An organized group of community members, business people, farmers, advocates, and other stakeholders in the food system. The food policy council can be connected to a city or local government body or it can be an independent group that works on issues related to food including: hunger, nutrition, food access, food stamps, and farmland preservation.

**Food Security** - Access by all people at all times to enough food for an active, healthy life. Food security includes at a minimum: 1) ready availability of nutritionally adequate and safe foods, and 2) an assured ability to acquire acceptable foods in socially acceptable ways. (USDA)

**Food System** - The foundations for food production, the social aspects of consumption, and relevant government and other policies, as well as the actual growing, processing, and distributing of substances that results in foods that people consume.



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**Land Banking** – The business of buying land that is not currently needed for a particular use.

**Perennials** - Plants that will bear fruit for several years before needing to be replaced with new plantings.

**Permaculture** – Combining the words permanent and agriculture, permaculture is a set of ethics and design principals based on caring for the earth, caring for people and redistributing surplus. Permaculture utilizes ecology as the basis for designing integrated systems of food production, housing, appropriate technology, and community development.

**Pocket Garden** – A garden on a small amount of land. Usually a showcase project.

**Preservation Zone (City of Portland)**- The “P” Environmental Protection Overlay Zone is intended to provide the highest level of protection to the most important resources and the functions they perform. Development will be approved in the environmental protection zone only in rare and unusual circumstances.

**Processing** - the step in the food system that involves everything done to change the food form from its original, such as, cutting, freezing, boiling, canning, etc. A food can be prepared in a variety of ways for a variety of uses. For example, a processing plant may receive apples to process into applesauce or apple juice.

**Impervious surface** – Constructed surfaces such as concrete

or asphalt. Impervious surfaces inhibit water from infiltrating soil.

**Social Capital** - The pattern and intensity of networks among people and the shared values, which arise from those networks. While definitions of social capital vary, the main aspects are citizenship, neighborliness, trust and shared values, community involvement, volunteering, social networks and civic participation.

**Stormwater** - Water that accumulates on land as a result of storms, and can include runoff from urban areas such as roads and roofs.

**Sustainable Agriculture** - Sustainable agriculture addresses the ecological, economic and social aspects of agriculture. It integrates three main goals: environmental stewardship, farm profitability, and prosperous farming communities. To be sustainable, agriculture can operate only when the environment, its caretakers and surrounding communities are healthy.

**Urban Growth Boundary** - A line drawn around a metropolitan area, designating the limits of allowable growth.

**Urban Heat Island** – A term used to describe the fact that city temperatures are often warmer than the surrounding region.

**Vermiculture** - The raising and production of earthworms and their byproducts.



# How Municipalities Have Addressed Urban Agriculture: Examples

## Statewide Actions

In 1986, New York State formed an Office of Community Gardens within the Department of Agriculture and Markets. The Office was responsible for providing information on available vacant lands and their suitability for use as community gardens. Also, the Office was designed to help community groups access the land by coordination with other State departments and agencies that held title to the vacant lands.

The Tennessee Community Gardening Act of 1977 enables any state resident to apply to the commissioner of agriculture to use vacant land for gardening, with priority given to low-income groups, the elderly, and children. The commissioner collects and distributes information on vacant lands to county officials. Tennessee law prohibits the sale of products grown in community gardens.

## Community Garden Plans

**Burlington, VT:** In 1991, the City passed the *Burlington Area Community Gardens Master Plan* to guide the City's management of seven community gardens with 350 garden plots. The plan is in the process of being revised and updated, with the goal to ensure the maintenance of current gardens and reconsider how the most Burlington residents can be served through this City-run program.<sup>3</sup>

**Ottawa** City Council passed the *Community Garden Program Action Plan* on October 27, 2004. This plan calls for modifying the zoning code to make community gardens an allowed use in all zones (except environmentally sensitive zones); look for opportunities to use vacant land to create community gardens; provide a C\$5,000 yearly fund to support new gardens; provide free water access and cover liability insurance for gardens.<sup>4</sup>

## Urban Agriculture in Comprehensive Plans

**Berkeley, CA:** The Open Space section of the *Planning Commission General Plan* includes community garden recommendations: building partnerships with community groups and the local school system to build support; keeping the gardens open to the public; and pursuing gardens in dense residential areas where there are few other locations for food production. There is recognition of the importance of community gardens as community spaces and for local food production.<sup>5</sup>

**Seattle's Comprehensive Plan** sets out a goal for quantity of community gardens. The *Urban Village Element* of the Comprehensive Plan calls for: "One dedicated community garden for each 2,500 households in the Village with at least one dedicated garden site." The Urban Villages, in their various configurations, do not contain the entire area of the City, but the denser, residential town centers.<sup>6</sup>

The **Montreal** Master Plan recognizes community gardens as facilities that "contribute to neighbourhood community life and cultural development, reinforce residents' sense of belonging and encourage participation in sports, recreation and outdoor living."<sup>7</sup>

The **District of Columbia** Comprehensive Plan Act of 1984 called for the establishment of a Food Production and Urban Gardens Program, which was implemented in 1987. The program maintains a vacant lands inventory, provides technical assistance to community gardeners through extension services, and calls for educational gardens to be established.<sup>8</sup>

**Chicago, IL:** The 1998 plan, *Cityspace: An Open Space Plan for Chicago*, calls for development of community gardens in every neighborhood, with a goal of 1,000 community gardens in Chicago by 2005.<sup>9</sup>

## Food System Policy in Comprehensive Plans

**Berkeley, CA:** The *Planning Commission General Plan* includes a statement on food systems and associated actions. Actions include encouraging more training on food production by the public school and University systems; encouraging local institutional purchasing; supporting education in organic



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and sustainable food systems, and encouraging rooftop and community gardens.<sup>10</sup>

## Community Garden Zoning

The Boston zoning code includes nine Open Space Subdistricts to specify what kinds of activities are allowed there. There is a *Community Garden Open Space Subdistrict* that can include vacant public lands.<sup>11</sup>

In 1985, Montreal was one of the first cities in North America to create community gardening zoning. The City maintains the 100+ gardens with over 6500 garden plots (though some are maintained by the boroughs) and provides seeds, tools, toilets and toolsheds.<sup>12</sup>

## Urban Agriculture Zoning

Montreal has designated a Permanent Agricultural Zone (PAZ) which covers about 4% of the city's total land. Much of the land is now used for an experimental farm run by McGill University, an agricultural park, an ecomuseum and an arboretum. The Montreal Master Plan includes an action titled: "Preserve and enhance rural character and agricultural activities in certain areas of the West Island" which talks about steps to take to enhance productive agriculture in Montreal by developing the agricultural park further, ensuring that new home development does not conflict with agriculture near the zone, studying ways to enhance the tourist appeal of the area, and maintaining the PAZ boundaries.

## Council Resolutions

**Seattle, WA:** In 1992, Seattle City Council passed resolution 28610 in support of the City's P-Patch community gardening program. It stated that the City would "include the P-Patch Program in the evaluation of priority use of city surplus property," attempt to fund the management of the program, and supported its expansion.<sup>14</sup>

**Madison, WI:** Two resolutions have been passed by the City's Common Council in support of community gardens. The June 1990 resolution called for the establishment of permanent community gardens on city-owned property, as well as proposed changes to the zoning ordinance to encourage

community gardens in newly-platted areas of the city. In 1997, a resolution called for the establishment of a Community Gardens Advisory Council to research ways the City could support community gardens.<sup>15</sup>

**Chicago, IL:** City Council in 1996 established a not-for-profit corporation, NeighborSpace, to manage small public properties as open space, including pocket parks and community gardens. The resolution recognized that neighborhood groups often lacked the resources and liability insurance needed to own and manage property, and it was in the interest of the City to make use of these properties as open spaces. Eight years later, NeighborSpace owns or leases 48 sites in 31 City wards, most of which are community gardens. This model protects the land long-term.<sup>16</sup>

## Food Charters

Many cities in Canada in particular have developed food charters to state specifically the municipalities' commitment to food security. These charters are adopted by city council bodies. Many of these refer directly to community gardens and urban agriculture.

Among many other items related to food security and local food systems, **Toronto's** Food Charter calls for the protection of local agricultural lands, the support of urban agriculture, and the encouragement of community gardens.<sup>17</sup>

**St. Albert's** Food Charter includes a variety of strategies to support local food production, including using vacant public lands for food production, the construction and operation of neighborhood food storage and distribution systems, and year-round farmers markets.<sup>18</sup>

# How Municipalities Have Addressed Urban Agriculture: Examples



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# APPENDICES

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## Urban Agricultural Resolution



### Resolution No. 36272

Direct applicable City bureaus to conduct an urban agricultural inventory of city owned land that may be suitable for community gardens and other agricultural uses. (Resolution)

WHEREAS, City Council, supports the Community Gardens Program that has been providing gardening and greening opportunities for the physical and social benefit of the people and neighborhoods of Portland since 1975; and

WHEREAS, There are 28 community gardens located throughout the city, developed and operated by volunteers and Portland Park & Recreation staff, offering a variety of programs and interests; and

WHEREAS, Community gardens are important neighborhood gathering places that contribute to the City's parks and open space system and support neighborhood livability; and

WHEREAS, The Community Gardens Program encourages organic gardening, building healthy soil, new and heirloom plant varieties, composting, cover cropping, food sustainability, intergenerational activities; and

WHEREAS, In June 2002, the City and County created a joint Food Policy Council to provide ongoing advice and input to City and County staff on food-related issues; and

WHEREAS; Urban gardening supports self-sufficiency and access to healthy food for Portland residents; and

WHEREAS, Community Gardens annually donate 10,000 pounds of fresh vegetables to neighborhood emergency food pantries of the Oregon Food Bank, and the Oregon Food Bank reports continued increases in emergency food requests; and

WHEREAS, Gardening is an important part of our culture that connects Portlanders to the natural environment and Oregon's agricultural heritage; and

WHEREAS, Local food production results in fresher, more nutritious food and reduces the transportation impacts of shipping food long distances; and

WHEREAS, The nonprofit Zenger Farms, operating on City property, demonstrates the educational, environmental and community benefits of urban farming to residents of the Lents neighborhood, recent immigrants, school children and other Portlanders; and

WHEREAS, City Council is committed to continuing efforts to cultivate Community Gardens throughout the City of Portland as well as providing other agricultural opportunities; and

WHEREAS, The City can support the creation of additional community gardens and agricultural opportunities by allowing, where appropriate, City-owned lands to be used for those efforts.

NOW, THEREFORE, BE IT RESOLVED that the City of Portland will create an urban agricultural inventory of city owned land that may be suitable for community gardens:



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(a) Using the City's Geographic Information Systems (GIS), an inventory of City-owned properties will be mapped using applicable criteria to determine site potential for community gardens or for other agricultural uses.

(b) The Community Gardens Program, Food Policy Council, applicable bureau staff, and Commissioner Saltzman's Office will work jointly to identify the criteria for suitable sites that have the potential to become community gardens or have other agricultural uses on City-owned property. In particular, pump stations, storage tanks and other Water Bureau and Bureau of Environmental Services facilities.

(c) Within six months of the acceptance of this Resolution, the groups identified in section (b) will submit a report to City Council which will include an urban agricultural inventory of City-owned sites that are suitable for community gardens and other agricultural uses.

Adopted by the Council,  
Commissioner Dan Saltzman  
Brendan C. Finn  
November 24, 2004

GARY BLACKMER  
Auditor of the City of Portland

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# City of Portland: Community Garden Site Criteria



## 1. Demonstrated Need

There must be a bona fide need for a garden. Is the neighborhood without gardening opportunities? Do existing gardens have an unusually long waiting list?

## 2. Neighborhood Support

The neighborhood must be in favor of actively supporting a garden in the proposed location. Usually this is indicated by members of the neighborhood who are interested in gardening and petition for, and work towards the garden implementation. These gardeners should have the backing of community and business organizations and work with Portland Community Gardens as members of a steering committee.

## 3. Parking

An assessment of participant parking needs should be part the planning process. Participant parking should not have an adverse impact on the neighborhood. Other means of transportation should be available, such as light rail, buses, bicycle routes, etc.

## 4. Property

Ownership or an agreement should be in place that allows use by the program for five years or more, 10 years if considerable capital is expended.

## 5. Security

The site should be located in a safe place.

**Location:** The site should be located so that it enjoys a large amount of visibility from several vantage points. Sites in neighborhoods are more satisfactory than in industrial or remote areas. Neighbors watch over gardens, which reduces vandalism

and theft. Gardeners feel an added degree of comfort and security within in a neighborhood.

**Fencing:** This protects the gardens from most theft, illegal dumping, roaming animals, vehicles, and other intrusions. One of the gates should be large enough to allow access to tractors or large trucks for maintenance purposes.

## 6. Water

Gardens need water from the city's water system (with a backflow prevention device between the service and the garden) so that there is an adequate amount for the size of the garden. Hose bibs should be provided within the garden so that 50 feet of hose will reach every plot from an outlet.

## 7. Soil

The soil needs to be free of contaminants and hazardous materials. It should be sandy loam, relatively free of stones and debris, and capable of growing plants. The site will need to be graded, plowed and roto-tilled to be acceptable for initial gardeners. Gardeners are encouraged to be good stewards of the soil by using organic methods and employing cover crops during the winter months.

## 8. Light

The site should have unobstructed natural light. Trees, buildings, obstructions, adjoining buildings, or other obstructions on the site or on the adjoining property reduce the productive value for gardening.

## 9. Resources

Current funding is tied to current garden locations. New projects need funding for capital development and ongoing operation and maintenance.



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# APPENDICES

## **10. Other Considerations**

In addition to gardening, there are other positive factors that can encourage a neighborhood to request a garden. They can be significant issues in the neighborhoods. Gardens add value as a healthy activity, provide fresh food, reduce crime, cultivate neighbor connections and improve the quality of life. They can convert or enhance and transform activity into a wholesome green space that adds social cohesion to the community.



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## Questions from February 2004 Survey of Current Community Gardeners

Conducted by the Portland Community Garden Program.

Questions as written, with response categories or description following.

- Garden site
- Name
- Whether new or returning gardener
- How many people worked in your garden plot in 2003 or will be working in 2004? (responses broken into different age groups)
- Why do you participate in a community garden? (8 responses given, with instructions to rate 1-5 importance)
- How far do you have to travel to the garden? (1 block, 2-6 blocks, 6 blocks to a mile, over one mile)
- What method of transportation do you use (most of the time) to and from the garden? (car, bus, bicycle, walk)
- How many hours (per week) do you spend in your community garden? (broken into hours during each season)
- Where do you recommend that gardeners shop or search for: seeds, soil amendments, tools, other resources (open-ended)
- What garden-related information would you like Portland Community Gardens to provide? (open-ended)

## Community Garden Survey Questions

- What is the best time to schedule social events, gardening workshops, and/or work parties at the garden? (AM, PM, Weekday, Weekend)
- How many years have you been a gardener, in general? Circle One: (new, 1-2 years, 3-5 years, 6-10 years, 16 years or more)
- What improvements would you like to see happen at your community garden site? (open-ended)



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# APPENDICES

## Gardening and Urban Agriculture Survey, April 23, 2005

1. What is your zip code? \_\_\_\_\_
2. Why do you shop at the farmers market? Please rate each of the following (circle one number per item).
 

	Not important at all	1	2	3	4	5
a. Quality of food		1	2	3	4	5
b. Freshness		1	2	3	4	5
c. Access to local produce		1	2	3	4	5
d. Support local growers		1	2	3	4	5
e. Sense of Community		1	2	3	4	5
f. Fun shopping experience		1	2	3	4	5
g. Access to organic food		1	2	3	4	5
h. Convenience		1	2	3	4	5
i. Other: _____		1	2	3	4	5

Currently, the City of Portland provides funding for 29 community gardens in Portland through Portland Parks and Recreation. Garden plots are available for residents to grow food or ornamental plants.

3. Have you ever gardened before? (circle one)      YES      NO
  - a. If yes, for how long? (circle one)
 

new	1-2 years	3-5 years	6-10 years	11 years or more
-----	-----------	-----------	------------	------------------
  - b. Do you currently garden at your home? (circle one)      YES      NO
  - c. Do you currently garden at a community garden?      YES      NO

1. If NO: if a community garden plot were available to you, how likely would you be to use it?
 

Not likely	Somewhat likely	Very likely
------------	-----------------	-------------

4. Who do you think should provide the following services in the community? (check as many as desired).

	City of Portland	Other governmental agencies (County, Metro)	Nonprofit organizations	For-profit enterprises	Citizen Volunteers	Other:
a. Manage current community gardens						_____
b. Build new community gardens						_____
c. Provide opportunities for immigrants and refugees to farm vacant urban land						_____
d. Establish urban educational farms to showcase farming practices						_____

Zenger Farm and Luscher Farm are examples of local urban demonstration farms, where schoolchildren and the public can go to learn about agriculture and how to grow food.

5. How interested would you be in visiting an urban demonstration farm? (circle one)
 

Not interested	Somewhat interested	Very interested
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6. When was the last time you visited a farm? (circle one)
 

Last 6 months	7 to 12 months	1 to 2 years	3 to 5 years	6 years or more	Never
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# Portland Farmer's Market Survey Questions





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# APPENDICES

# Site Visit Form

Bureau ID: \_\_\_\_\_ Site #: \_\_\_\_\_

## General Information

Location:	_____
Date Visited:	_____
Surveyor(s):	_____

Current Use: \_\_\_\_\_

Adjacent Uses/Nearby Community Resources:

\_\_\_\_\_  
\_\_\_\_\_

## Structures

Type	Description/Location
_____	_____
_____	_____

## Site Details

	Yes	No	Notes
On bus/MAX line?			
Fenced/Secured?			
Sidewalk?			
Curb cuts?			
Adjacent bike lane/path?			
Adjacent parking?			

**Surface Condition** (pavement, unimproved, etc.)

\_\_\_\_\_  
\_\_\_\_\_

**Light** (trees, tall shrubs, building obstructions, etc.—identify specific location)

\_\_\_\_\_  
\_\_\_\_\_

## Notes

\_\_\_\_\_  
\_\_\_\_\_





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# APPENDICES



# GIS Methodology



# GIS METHODOLOGY:

## Introduction

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The agricultural lands inventory is the necessary first step in accomplishing the city council resolution to identify available city lands for agricultural use. The inventory consists of land under the management of the Bureaus of Environmental Services (BES), Parks and Recreation, Water Works and the Office of Transportation (PDOT) that have been identified through a process of elimination based on criteria developed by the Technical Advisory Committee (TAC) and research of the workshop team. Each bureau's dataset was clipped to remove the environmental overlay zones and the Park Bureau's developed areas. The remaining department files were then analyzed with one-foot aerial photos to assess their characteristics and attributed for tree canopy, the presence of buildings and parking, the type of agricultural potential and a subjective suitability rank based on a visual assessment of the site, and notes describing the other characteristics of the site. Parcels that had no access, were slivers, or obviously unusable were deleted, leaving a total of 430 properties.

Upon inspection, many of the sites do not appear to be ideal for agricultural purposes: some sites are completely covered with tree canopy, others are in industrial areas, and some are located within floodplains or contain areas of steep slope. Nevertheless, such sites have not been removed from the data. The inventory currently represents sites that are opportunities for various agricultural uses, from mushroom and berry growing activities in heavy tree canopy to larger-scale farming, community gardens and even farm stands. The wide variety of uses proposed through stakeholder interviews, surveys, research and the TAC has resulted in an inventory of parcels of various shapes and characteristics that will require internal agency review and further analysis based on the specified needs of its potential agricultural use.

The sites were categorized both on size and the type of use they might accommodate. Small-scale agricultural parcels have a pervious surface area less than ¼ acre (10,890 sq. ft.); large-scale agricultural uses are any parcels with over ¼ acre of pervious surface. Within these two categories is a subset of agricultural activities: community gardens and impervious surfaces or poor soil agriculture. Community gardens are any parcel with a minimum pervious surface area of 7,500 sq.ft. and impervious surface or poor soil agriculture is any parcel with an impervious surface area of at least 5,000 sq.ft.

## **Technical Considerations**

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The GIS data was collected over a period of a few weeks from each of the participating bureaus. Some Bureaus had their datasets readily available, while others needed time to find the accurate contact person and source dataset for the information, or time to pull the data together. Analysis began on data in the order in which it was acquired until it was later combined into one dataset. All the parcel data received from the bureaus was in a shapefile format.

The computer resources available for the analysis varied—the inventory process involved ArcView 3.3, ArcGIS & Toolbox 8.3, ArcGIS 9.0 and command line ArcInfo.\* For the creation of the final product, ArcView 3.3 was utilized for clipping out the city's designated environmental zones and park's developed areas; ArcGIS 8.3 was utilized for converting shapefiles to coverages and cleaning regions; ArcGIS 9.0 was utilized for creating geodatabase files, joining tables, unioning features, intersection and conducting the aerial analysis. The shapefile format was primarily utilized for the analysis due to cross-software compatibility issues with geodatabases and their ease of use between various ESRI software versions.

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\* Depending on the availability of lab resources and problems with the software installations of ArcGIS 9.0 at the university, multiple versions of ESRI's software were utilized.

## **Assumptions**

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The original data was of good spatial quality and accurate, but since some of the bureaus had difficulty locating the data, the completeness of the data received is open to question. As analysis was conducted a number of the parcels were found to be leased by private parties: not knowing the length of these leases or the lease arrangements, such parcels were removed from the dataset. The removal of unsuitable parcels was primarily based on a spatial analysis using the City's environmental overlay zones, the Park's developed areas data, and an aerial photo analysis. Information regarding master plans and future development was not provided by the bureaus. The city bureaus will need to supplement this analysis by giving the inventory a final review to remove the properties with planned uses and future development plans. For the purposes of this project, it is assumed that all of the properties in the inventory are available for use, and only properties with obvious development conflicts were removed as they were discovered.

## Criteria Development

The sites that are included in the final inventory are divided into two general categories: small-scale and large-scale urban agricultural uses. Additionally, all parcels may or may not be candidates for community gardens or impervious surface agriculture. A list of criteria for community gardens are outlined by the Community Gardens Program (Appendix: *Community Garden Site Criteria*) and were used when possible to identify sites that have the potential for a new community garden or for the expansion of an existing community garden. Poor soil and impervious surface (above ground) agricultural activities were also discussed with the TAC and a threshold of 5,000 sq.ft. was established for identifying locations with 5,000 square feet of impervious surface area.

The criteria used for selecting small- and large-scale agriculture sites are more general than those for community gardens (Table 1). Small- and large-scale agriculture includes a variety of activities, ranging from greenhouses and farm stands to forest farming and pocket farms. Based on the information provided by the TAC and workshop team the quantifiable criterion for categorization was limited to size of pervious and impervious surface area.

Table 1: Criteria	Primary Parcel Categorization		Categorization Subset	
	Small Scale Agriculture	Large Scale Agriculture	Community Gardens	Impervious Surface or Poor Soil Condition
<b>Size *</b>	1,000 to 10,889 sq.ft. (.023 to .25 acres)	10,890 sq.ft. or greater (.25 acres or more)	7,500 to 22,500 sq.ft.** (.17 to .52 acres)	5,000 sq.ft. or greater (.11 acres)
<b>Impervious Surface</b>	Maximum of 15%	Not applicable	Not applicable	Up to 100%
<b>Water Access</b>	Access to city water needed.	Good water access not necessary, but preferable.	Water service within the defined area.	Good water access not necessary, but preferable.

\*Size for community gardens, small and large agriculture is calculated on pervious surface sq.ft.; impervious surface size is calculated on impervious sq.ft.

\*\*Maximum development standard

Due to the range of agricultural activities, a system of weighted criteria ranks for locating specific types of potential sites will need to be developed with input from the public, land-owning bureaus, and experienced farmers. The land-managing agencies should be involved with the criteria development as they are the most familiar with the properties. Cross-agency criteria development will allow for consistency with the development of the data and incorporate institutional knowledge.

## Property Analysis

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### Bureau Data Collection:

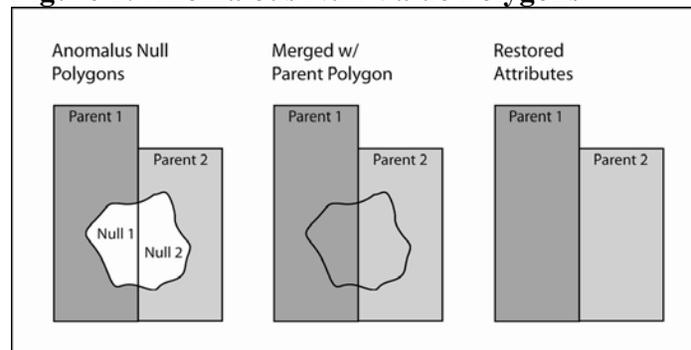
Given that each bureau manages and maintains their own data, the shapefiles acquired had widely varying attributes with no consistent unique identification system. For example, the BES and PDOT data utilized a text identification 'RNO', while Parks and Water Works utilized an internal numeric identification system 'propertyid' and 'realestate.' The data also had multiple records with the same identifier, therefore when the datasets were eventually brought together, each parcel was assigned a unique ID (Ag\_ID – See **Metadata**).

### Removal of Environmental Zones & Parks Developed Areas:

As the data became available from individual bureaus it was handled in the order it was received. Prior to being brought together into one feature class, each dataset was clipped on the outside to the Bureau of Planning's environmental zoning overlay designations utilizing an ArcView 3.3 avenue extension, 'clip themes', from the ESRI download web site <http://arcscripts.esri.com/details.asp?dbid=10903> (The equivalent of the "Erase" function in ArcGIS).

The clipping created polygon regions, a condition in which there is one record for multiple polygons. Using ArcToolbox 8.3 the polygons were then converted to coverages, cleaned, and converted back into shapefiles with their projections redefined to create discrete polygon units. The same process was repeated utilizing the Bureau of Parks & Recreation's data on developed areas. In the case of the Bureau of Parks & Recreation, the process greatly proliferated the polygon count. Each time the data went through the cleaning process, null-value polygons nested within larger attributed polygons were occasionally produced (Figure 1). The anomalous polygons were compared with the original data and merged back with their respective parent polygons, restoring all attribute information.

**Figure 1: Anomalous Null Value Polygons**



Since the datasets were manipulated utilizing a shapefile format, they were converted into a geodatabase for use in ArcGIS 9.0. The process then generated accurate shape area and shape length calculations for the individual polygon units.\* Based on input from the technical advisory committee, stakeholder interviews, and research, a size criterion minimum for agricultural uses to be included in the inventory was set at 1,000 square feet or 0.023 acres. All polygons with an area less than 1,000 sq.ft. were removed from the data.

### **Combining Bureau Data:**

Prior to combining the four bureau datasets, the tables were cleaned by removing all columns irrelevant to the inventory process, preserving only the bureau identification, unique id, and property description (if available). Reviewing the information revealed that some parcels have bureau overlap, making the table difficult to understand in its original unioned state. The unioning process produced three individual bureau columns, unique id columns, and property description columns with multiple blank spaces along those rows where only one or two bureaus have responsibility.

To consolidate the table, three new column types were created and attributed using the field calculator: bureau identification, the bureau unique ID, and property description. Using the field calculator the multiple columns were collapsed into three specified columns for each of the aforementioned categories, placing the data for parcels with one bureau responsible into the first column, those with two into the first and second columns, and those with three into the first, second, and third columns. The same was done for the unique IDs and property descriptions, resulting in nine new columns corresponding to one another's designation: dept\_1, dept\_2, dept\_3; unq\_id\_1, \_2, \_3; prop\_desc\_1, \_2, \_3. Once this was completed the original union columns were removed. A result of the aerial analysis was the reduction of bureau overlap to at most two bureaus.

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\* Conversely, in Arc8.3 a field can be added into the table and the area recalculated using a visual basic script in the calculate values dialog box or calculate area tool in Arc9.



## Aerial Photo Analysis

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With a baseline set of properties to work with the process began of visually reviewing each property with one-foot aerial photos of the entire city. The process allowed for attributing each polygon based on a visual assessment of the area. It also provided an opportunity to examine the data for any unforeseen irregularities. Each parcel was attributed for: tree canopy (Figure 2), the presence of buildings or parking, the type of agriculture it might be suitable for, notes on other characteristics of the sites location, and a personal rank based on the likelihood on whether the site could function as one of the various agricultural activities outlined by the team. (Table 2).

**Figure 2: Tree Canopy Analysis**



**Rank 1: 0-25%**



**Rank 2: 26-50%**



**Rank 3: 51-75%**



**Rank 4: 76-100%**

<b>Table 2: Aerial Analysis Attributes</b>		
<b>Characteristic</b>	<b>Attribute</b>	<b>Definition</b>
<b>Tree Canopy</b>	Tree_C	This was a visual estimation of tree coverage for each individual parcel: 4 = 100 – 76% 3 = 75 – 51% 2 = 50 – 26 % 1 = 25 – 0% The city was unable to provide a dataset containing accurate tree canopy information for calculating the area of tree coverage. This rank should not be used for general analysis due to issues of scale; a site may have a ranking of 4 but if it is a large parcel the area without tree canopy could be suitable in size for many of the agricultural activities outlined by the TAC. When tree canopy data becomes available the area could be removed from the total pervious surface parcel size for agricultural activities needing direct sunlight, however this will not take into consideration non-contiguous areas and will need evaluation on a case by case basis.
<b>Presence of a Building</b>	Build	Many of the parcels had buildings on site with open land adjacent to the property. Sites with full building coverage were removed. Properties with a building and land still available were attributed with a ‘y’ = yes and those with no buildings an ‘n’ = no. Structures and their uses will need to be evaluated by the individual bureaus managing the properties.
<b>Presence of a Parking</b>	Parking	Parking is a consideration for all agricultural activities and parking lots can be utilized for farm stands and markets. Sites that appeared to have parking available on site or nearby were attributed with a ‘y’ = yes and those without parking a ‘n’ = no. Parking and its availability around the parcels will need evaluation based on the specified needs of the potential agricultural activity.
<b>Visual Impression</b>	Type_Ag	The community gardens program provided specific criteria for sites suitable for gardens. These characteristics were taken into consideration while reviewing the aerial photos. Sites that visually appeared to meet these criteria were attributed with a ‘cg’ = community gardens; all others were noted with an ‘oa’ = other agriculture, or ‘et’= either community garden or other agriculture ( <i>Appendix: Community Garden Site Criteria</i> ).
<b>Other Observations</b>	Notes	The parcels were attributed with impressions of the aerial photography and any interesting observations that may be of use in the future. For example, some larger sites were located adjacent to school properties and were so noted.
<b>Personal Rank</b>	Pers_Rank	Based on the site’s surroundings and its possible uses, a subjective rank for feasibility of its potential was applied. This was later used for making site visit selections for inclusion in the final report. 1 = obvious visual obstacles, 2 = interesting potential, 3 = good candidate.

## Site Visit Selection

Once the aerial analysis was completed the process of “ground-truthing” selected sites began. A calculation of parcel size without taking into consideration pervious surfaces and zoning was utilized to select initial candidates for visitation. Site visits were conducted before analysis of the dataset was complete and attributed with the characteristics of slope, floodplain, wetlands, impervious surfaces, water availability and transit access. The ranks applied during the aerial analysis along with on-the-fly GIS analysis of transit and slopes were then utilized to select preliminary candidates for the four agricultural use categories identified (Table 3).

<b>Table 3: Attribute Selection Criteria for Site Visit Selection</b>			
<b>Agricultural Category</b>	<b>Small Scale Agriculture</b>	<b>Large Scale Agriculture</b>	<b>Community Gardens</b>
<b>Size</b>	< 10,890sq.ft. or ¼ acre	≥ 10,890sq.ft.or ¼ acre	≥ 7,500sq. ft and ≤ 22,500sq.ft.
<b>Tree Canopy</b>	Rank 1 or 2	Rank 1	Rank 1
<b>Bus Stop</b>	within ¼ mile of bus stop	within ¼ mile of bus stop	within ¼ mile of bus stop
<b>Slope</b>	partial area of 10% grade acceptable	partial area of 10% grade acceptable	no areas of 10% grade
<b>Personal Rank</b>	Rank 2 or 3	Rank 2 or 3	Rank 2 or 3
<b># Candidates</b>	38	111	86

### **Impervious Surface or Poor Soil Condition Agriculture:**

Of the sites available in the dataset after the aerial analysis, 78 parcels had an impervious surface area of 5,000 sq.ft. or more, however this criterion is inadequate in itself when taking scale into consideration. A very large site may have 5 acres of pervious surface area but still have 5,000 sq.ft. of impervious surface area. While conducting the aerial analysis one site was notated as being completely paved. A site visit was conducted on this location and it was determined to not be a viable candidate. After conducting all of the site visits, a calculation of loose surface area in addition to impervious surface area could be utilized to locate sites of this type in the future.

The remaining sites were then assessed for proximity to population densities based on 2000 Census block group data and community assets such as schools and existing community gardens. The final sites selected for site visits were chosen based upon their geographic distribution, distance from existing community gardens (at least one mile), and their implementation potential based on the aerial photo analysis. In the end 24 candidates were selected for sites visits varying in size and potential uses (Appendix: *Site Visit Form*).

## **Attributing Data Characteristics**

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### **Water Availability:**

For most agricultural activities water access is a vital component. Due to security concerns, the data containing the location of water mains and access was kept within the Bureau of Water Works and was not handled by the project team. The Water Bureau was sent the data to ascertain the availability of water and attributed the table with a number designating a rank for water availability: 3 = Water Service within the defined area, 2 =Water Main within 25' and 1 =Water Main within 100'. This rank could be used for assessing the potential costs of implementing agricultural activities and weighted for making future site selections.

### **Slope:**

The wide variety of agricultural activities researched revealed that slope should not be a determining factor for suitability of agricultural lands. To prevent locating sites that are unreasonably steep, a criterion of 10% slope or less was applied and the area recalculated in the attribute table. The City of Portland Community Gardens Program requires sites have a level grade. For the purposes of the inventory “level grade” was interpreted as slope less than 4%.

Slope calculations were done utilizing slope raster and vector data derived from the USGS 10 meter DEM. The slope vector data was exported into a geodatabase and clipped to the bureau properties. The slope data was dissolved on two attributes: slope 10% and greater, and slope less than 4%. The intersect function was used to attribute the slope data with bureau information and the slope areas were summarized and their areas calculated using the Ag\_ID. These areas were used to calculate the areas of the polygon that did not fall within a slope greater than 10% and less than 4%. It should be noted that the calculations do not always represent contiguous areas.

### **Impervious Surface:**

A threshold of 15% impervious area of the total property area was established for small-scale in-ground growing operations. Properties that had more than 5,000 square feet impervious coverage have been notated as potential sites for above ground or poor soil growing operations. It should be noted that the surface data provided by the BOP was created for hydrologic modeling and its accuracy for the scale of analysis is only a rough estimation of impervious surfaces (Figure 4).

The impervious area was calculated by converting the parcel data to a raster format with a value of 1. This was multiplied by the impervious surface raster\* so that each property boundary contained the impervious surface values. The property raster was then converted into a polygon vector file, with each grid cell an individual polygon. This polygon file was then dissolved on the raster

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\* The impervious surface raster is categorical data.

value attribute to aggregate the surface type categories. The intersect function was utilized to attribute the parcels with the surface categories. The impervious surface polygons table was then summarized to calculate the impervious surface area for each parcel by Ag\_ID and joined back with the inventory data.

**Figure 4: Aerial Photo and Raster Surface Data**



**Ag\_ID: 38** This parcel when viewed with an aerial photo appears to contain mostly dried vegetative surface area, except for the upper left section. When compared with the impervious surface raster the calculation came to 53% impervious surface. Without an actual visit to the site the accuracy of the data cannot be confirmed for this analysis.



### **100 Year Floodplain:**

The dataset was attributed as to whether any portions of the properties are located in the 100 year floodplain. This was done by selecting by location any parcel that intersected the flood plain polygon file. The selected features were then attributed using the field calculator. The properties located within the floodplain were retained in the inventory—restrictions within a floodplain occur with the building of a structure which requires cut-and-fill mitigation to offset the impacts of development.

**Wetlands:**

The parcels were attributed with national wetlands inventory information. Since these areas do not completely encompass any bureau parcels, the locations were only identified with the potential use conflict. This was done by selecting by location any parcel that intersected the wetland polygon file. The selected features were then attributed using the field calculator.

**Bus Stops & Bike Network:**

Transit access to sites has been identified through stakeholder interviews as a key component to successful operations. Parcels were selected by location are within a quarter mile and half mile distance of bus stops and the designated bicycle network. The field calculator was utilized to attribute the parcels accordingly.

**Pedestrian Access:**

A criterion defined by the community gardens program specifies the need for sidewalks and their presence enhances the access for any of the locations. The Department of Transportation provided a polygon file of the city's sidewalks network. Sites were selected that are within 10, 30, and 50 feet of the sidewalk network and attributed with the field calculator.

**Zoning:**

Although there are several base zone classifications that explicitly prohibit agriculture, the project team decided to not eliminate properties based on zoning restrictions in order to keep the inventory as comprehensive as possible. The final data is attributed with zoning based on the centroid of the polygon.

**Soils:**

The inventory parcels have not been attributed with soils information. Detailed soil testing will need to be conducted on a case by case basis.

**Brownfields:**

The inventory parcels have not been attributed with brownfield information. Individual bureaus will have to identify these locations.

## Inventory Results

The inventory is comprised of individual tax parcels. For the purposes of the report, parcels adjacent to one another are considered as one location and their characteristics have been summarized resulting in 289 locations comprised of 430 individual tax parcels.

Inventory Sites	Summarized Locations			Individual Parcels by Bureau				
	Adjacent Parcel	Individual Parcels	Total	BES	Parks	Water	PDOT	Total
Small-Mid Scale (<1/4 acre)	1	46	47	73	25	27	1	126
Mid-Large Scale (≥1/4 acre)	43	199	242	96	162	43	3	304
<b>Total Locations</b>	<b>44</b>	<b>245</b>	<b>289</b>	<b>169</b>	<b>187</b>	<b>70</b>	<b>4</b>	<b>430</b>

\*Category is the size of non-contiguous pervious surface area of the property.

Inventory Sites by Prefix	Summarized Locations			Individual Parcels by Bureau				
	Adjacent	Individual	Total	BES	Parks	Water	PDOT	Total
North	10	41	51	68	26	17	2	113
Northeast	4	51	55	13	32	14	0	59
Northwest	0	12	12	1	10	1	0	12
Southeast	25	97	122	82	95	9	2	188
Southwest	5	44	49	5	24	29	0	58
<b>Totals</b>	<b>44</b>	<b>245</b>	<b>289</b>	<b>169</b>	<b>187</b>	<b>70</b>	<b>4</b>	<b>430</b>

## Data Sources

Data Layer	Source	Date
<b>Bureau Sites</b>		
Environmental Services	Property data developed and maintained by the Bureau of Environmental Services	March 2005
Parks	Property data developed and maintained by the Bureau of Parks & Recreation	March 2005
Transportation	Property data developed and maintained by the Portland Department of Transportation	March 2005
Water	Property data developed and maintained by the Bureau of Water Works	March 2005
<b>Environment</b>		
Impervious Surfaces	Developed as a 1.1x1.1 meter grid by the Bureau of Planning from June 2002 multi-spectral imaging data.	April 2005
Floodplain	Developed by FEMA and accessed through the Metro Data Resource Center RLIS Lite purchase for Portland State University	May 2005
Wetlands	Developed by the National Wetlands Inventory USFWS and accessed through the Metro Data Resource Center RLIS Lite purchase for Portland State University	May 2005
Slope	Slope was mathematically derived from USGS 10' contours using ArcInfo	May 2005
Aerial Photos	1 foot sections of the city provided and maintained by the city's Corporate GIS department	March 2005
<b>Land Use</b>		
Environmental Overlay Zones	Developed and maintained by the Bureau of Planning	March 2005
Zoning	Developed and maintained by the Bureau of Planning	April 2005
Parks Natural & Developed Areas	Developed and maintained by the Bureau of Parks	April 2005
Neighborhood	Developed and maintained by the Metro Data Resource Center and accessed through Portland State University quarterly update RLIS Lite purchases	May 2005
<b>Infrastructure</b>		
Parks Developed Areas	Developed and maintained by the Bureau of Parks	April 2005
Water Utilities	Availability analysis conducted by the Bureau of Water Works	May 2005
Streets	Developed and maintained by the Metro Data Resource Center and accessed through Portland State University quarterly update RLIS Lite purchases	April 2005
Bus Stops	Developed and maintained by the Metro Data Resource Center and accessed through Portland State University quarterly update RLIS Lite purchases	May 2005
Bike Network	Developed and maintained by the Portland Department of Transportation	April 2005
Sidewalks	Developed and maintained by the Portland Department of Transportation	April 2005
<b>Agriculture</b>		
Existing Agricultural Activity Locations	Urban Agriculture Atlas Senior Capstone Project Portland State University	Summer 2004

## Metadata

File: pdx_ag_props.shp	
Attribute	Definition
<b>dept_1</b>	agency responsible
<b>dept_2</b>	additional agency w/ polygon overlap
<b>uniq_id_1</b>	unique id of agency dept_1
<b>uniq_id_2</b>	unique id of agency dept_2
<b>prop_dsc_1</b>	agency description with original data dept_1
<b>prop_dsc_2</b>	agency description with original data dept_2
<b>ag_id</b>	unique ID created for entire unioned dataset
<b>Shape_Leng</b>	calculation of polygon length in feet
<b>Shape_Area</b>	area calculation of polygon in square feet
<b>prcl_acres</b>	calculation of polygon acreage
<b>tree_c</b>	visual estimate of tree canopy from aerials 4 = 100-76% 3 = 75-51% 2 = 50-26% 1 = 25-0%
<b>build</b>	visual presence of building from aerials: y = yes / n = no
<b>parking</b>	visual presence of vehicle parking from aerials: y = yes / n = no
<b>notes</b>	place for noting other observations from aerials
<b>water</b>	ranking applied by the bureau of water works 3 = Water Service within the defined area. 2 = Water Main within 25' 1 = Water Main within 100'
<b>fldpln</b>	polygon that intersected the floodplain: y = yes / n = no
<b>wetlnd</b>	polygon that intersected the wetlands: y = yes / n = no
<b>perc_imp</b>	the area (in percent) of the parcel that is an impervious surface
<b>sqft_impv</b>	the area (in square feet) of the parcel that is an impervious surface

<b>sqft_pv</b>	the area (in square feet) of the parcel that is pervious surface (used to calculate agricultural categories)
<b>pv_acres</b>	calculation of pervious surface in acres
<b>slope_10</b>	polygon contains area with a slope greater than 10%: y = yes / n = no
<b>sqft_10slp</b>	the area (in square feet) of the parcel that has a slope >=10%
<b>sqft_lt10s</b>	the area (in square feet) of the parcel that has a slope < 10%
<b>sqft0_2slp</b>	the area (in square feet) of the parcel with a slope of 0-2%
<b>sqft2_4slp</b>	the area (in square feet) of the parcel with a slope of 2-4%
<b>sqft_lt4s</b>	the area (in square feet) of the parcel that has a slope =< 4%
<b>lt10s_acre</b>	calculation of area with slope <10% in acres
<b>zone</b>	base zone classification of the polygon centroid
<b>zone_use</b>	a = allowed, cu=conditional use, p=prohibited use, na = zoning data not available
<b>pdx_sect</b>	street prefix designation of location: N=North, NE=Northeast, NW=Northwest, SE=Southeast, SW=Southwest
<b>adjacent</b>	unique ID identifying whether polygon is adjacent to other polygons creating a larger potential site. Range is a-1 to a44 an 'n' indicates that the parcel is not adjacent to others
<b>sm</b>	parcels meeting small-mid size criteria – based on pervious surface square footage (sqft_pv)
<b>ml</b>	parcels meeting mid-large size criteria – based on pervious surface square footage (sqft_pv)
<b>cg</b>	parcels meeting community garden size criteria – based on pervious surface square footage (sqft_pv)

<b>imp</b>	parcels meeting impervious surface size criteria – based on 5,000 sq.ft. impervious surface area
<b>sw_50ft</b>	features within a distance of 50ft sidewalk polyline file: y = yes / n = no
<b>sw_30ft</b>	features within a distance of 30ft sidewalk polyline file: y = yes / n = no
<b>sw_10ft</b>	features within a distance of 10ft sidewalk polyline file: y = yes / n = no
<b>bstp_qtr</b>	features within a distance of 1/4 mile bus stops: y = yes / n = no
<b>bstp_hlf</b>	features within a distance of 1/2 mile bus stops: y = yes / n = no
<b>bkrte_qtr</b>	features within a distance of 1/4 mile bike routes: y = yes / n = no

<b>bkrte_hlf</b>	features within a distance of 1/2 mile bike routes: y = yes / n = no
<b>nhood</b>	neighborhood designation in which the parcel is located

**Projection:**

NAD\_1983\_HARN\_StatePlane\_Oregon\_North\_FIPS\_3601  
GCS\_North\_American\_1983\_HARN

\*\* Care was taken in the creation of this data but it is provided "as is". The Diggable City GIS team does not accept any responsibility for error, omissions, or positional accuracy.

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