

Urban Agriculture

Asset Mapping Capstone



**PORTLAND STATE
UNIVERSITY**

Introduction

The Senior Capstone is part of Portland State's University Studies Program. The Capstone provides an opportunity for students to apply their expertise learned from their major, as well as knowledge gained from other University Studies courses, to issues within the broader community. The University Studies' goals are to improve the students' ability to communicate effectively, think critically, work in a diverse society, and act in socially responsible ways. The Capstone's purpose is to enhance student's ability to work in a team context while being actively involved in the community. Each Capstone is unique in terms of community-based objectives and outcomes, but every Capstone follows the goals of the University Studies Program.

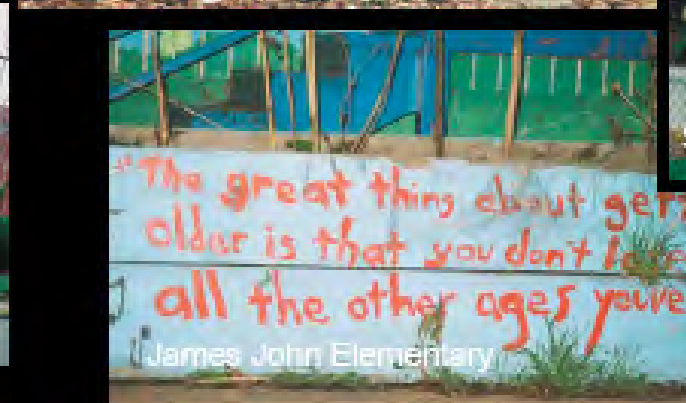
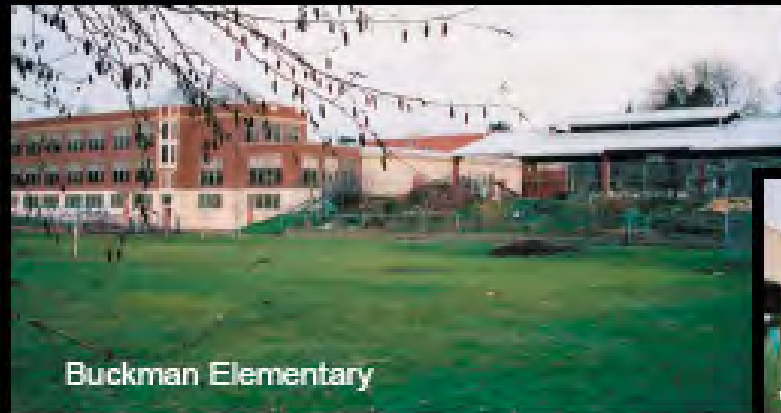
In the spring of 2004, Coalition for a Livable Future (CLF) board member Steve Johnson, initiated a Capstone course under the direction of Meg Merrick, of Portland State University's Institute of Portland Metropolitan Studies. The purpose of the course is to use Geographic Information System (GIS) technology as a means to identify and inventory possible urban farming endeavors. GIS is an effective way to help citizens and organizations identify, analyze, describe, and mobilize around assets and issues of concern. The original Capstone's purpose was to identify public/private urban lands (inside of the metropolitan urban growth boundary) for urban agriculture; make recommendations; and raise new, more informed questions. This project was published in August of 2004, in an atlas entitled *Metro Urban Agriculture: A Study of Potential for Food Production within the Urban Growth Boundary*.

This Capstone course is a follow-up of the initial investigation, with the purpose of helping students to develop a rationale and strategy for promoting urban agriculture in the Portland Metropolitan region. The initial Capstone's recommendations include a strong possibility for the use of regional school and church sites, as these locales often have extra land that could be used for urban agricultural purposes. The aspects of urban agriculture that were chosen for expanded research include community gardens, education, immigrant groups role in urban agriculture, community supported agriculture (CSA), and farmers' markets.

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Community Gardens & Schools



Executive Summary

Urban agriculture can be defined as the practice of sustainable agriculture within an Urban Growth Boundary (UGB). One goal of urban agriculture is to provide a paradigm for farmers to grow high quality crops. Through sustainable growing techniques, farmers can maximize their production while minimizing environmental degradation, acting as stewards of the land. Urban agriculture has many forms, including community gardens, community supported agriculture (CSA) farms, and farmers' markets. Such practices can provide agricultural and environmental education for students, allow recent immigrants to assimilate smoothly to their new communities, and put healthy, and many times, cheaper produce on our tables.

Educating children about our food sources is important. One way to do this is to introduce children to agriculture in schools, using small community-style gardens located on school property. An education program with an agricultural focus can teach kids about the problems associated with conventional farming that affect environmental and human health. Industrial farming, although efficient, comes with many drawbacks. Extensive transportation, waste, and agro-chemical production and use are only some of the factors that lead to contaminated water, air, and soil. In humans, these contaminants can lead to increased cancer rates, growth retardations, and deformities. These established systems can change, but the first step is to educate people on why it's important to change. The Food-based Ecological Education Design (FEED) project, spearheaded by Dr. Pramod Parajuli of Portland State University, has been designed to provide such an education.

When immigrants enter the United States, they face a difficult transition. Moving to an industrialized nation is difficult for those who have only worked on farms, and finding a job doing anything else can be next to impossible. The Bantu of Somalia, the Hmong from Asia, and the Mien from Laos come from cultures that practice agriculture as a way of life. In many cases, that transition is made easier by creating opportunities for immigrants, many of them political refugees, to connect to their new communities through agriculture. Programs around the country, including here in Portland, OR, provide non-rural farmlands and marketing strategies for immigrants in an effort to help them achieve economic self-sufficiency and financial stability, maintain cultural and social ties, foster connections with the broader community, and achieve empowerment and self-determination. Locally, Zenger Farm has 4 Mien families tending their own plots of land to provide for themselves and to generate income through the sale of food to CSA members and at farmers' markets, which serves to foster a stronger connection with the broader community.

During the last 30 years, the Parks and Recreation department has

proven community gardens are a success for neighborhoods and participants. A typical community garden plot is 20 x 20 feet, with an annual fee of \$45. People primarily participate in community gardens because they can grow high quality food close to home, as the average distance participants travel to their gardens is 14.3 blocks. Due to the high demand and growing popularity of community gardens, many gardeners begin their experience on a lengthy wait list.

Current demand for community gardens suggests the building of new ones would be a welcome addition to the Portland landscape. To meet this demand, the City of Portland is currently looking for potential new community garden sites. Such sites must have at least 10,000 square feet of land and be centrally located with respect to neighborhoods. While the city is investigating pump stations, storage tanks and other Water Bureau and Bureau of Environmental Services properties, two other possible areas to explore for future community garden sites include churches and cemeteries. Often times, churches have large amounts of unused land and share a common interest in helping others. Cemeteries also have large amounts of unused land where community gardens could prosper, as this land can remain vacant for extended time periods. There are over 160 churches and cemeteries with available land in the Portland area. This land, in excess of 168 acres, may provide an opportunity for the expansion of the community gardens program.

A Community Supported Agriculture (CSA) farm is a cooperative effort between a farmer and a group of shareholders. Each shareholder purchases a harvest share before the harvest season and receives produce on a periodic basis throughout the growing season. Both parties benefit from this relationship. The shareholder receives competitively priced fresh produce on a regular basis during the harvest season. In a comparison of CSA prices to grocery stores prices, it is shown that CSA's are significantly cheaper. A shopper at a supermarket will pay over twice the amount that a CSA shareholder pays for the same produce. Each grocery store in this comparative study has a projected cost of \$990 or more for the same items that come with a \$350 CSA harvest share. CSA farmers benefit by receiving advance payment for their crops, which guarantees their annual income.

CSA farmers earn a gross median income of \$15,000. Only 39% of conventional farmers earn over \$20,000, compared to 60% of CSA farmers. Most CSA's are smaller and do not require the large farm equipment that a conventional farm does. In addition, almost all of the CSA's do not use pesticides. Ninety-four percent of CSA farms subscribe to either organic or biodynamic growing practices. CSA farmers get their financial stability from advance payment for their crops, lack of crop insurance or marketing costs, minimal transportation costs, and the ability to sell surplus harvest at farmers' markets.

Farmers' markets and contributing farms have become one of the

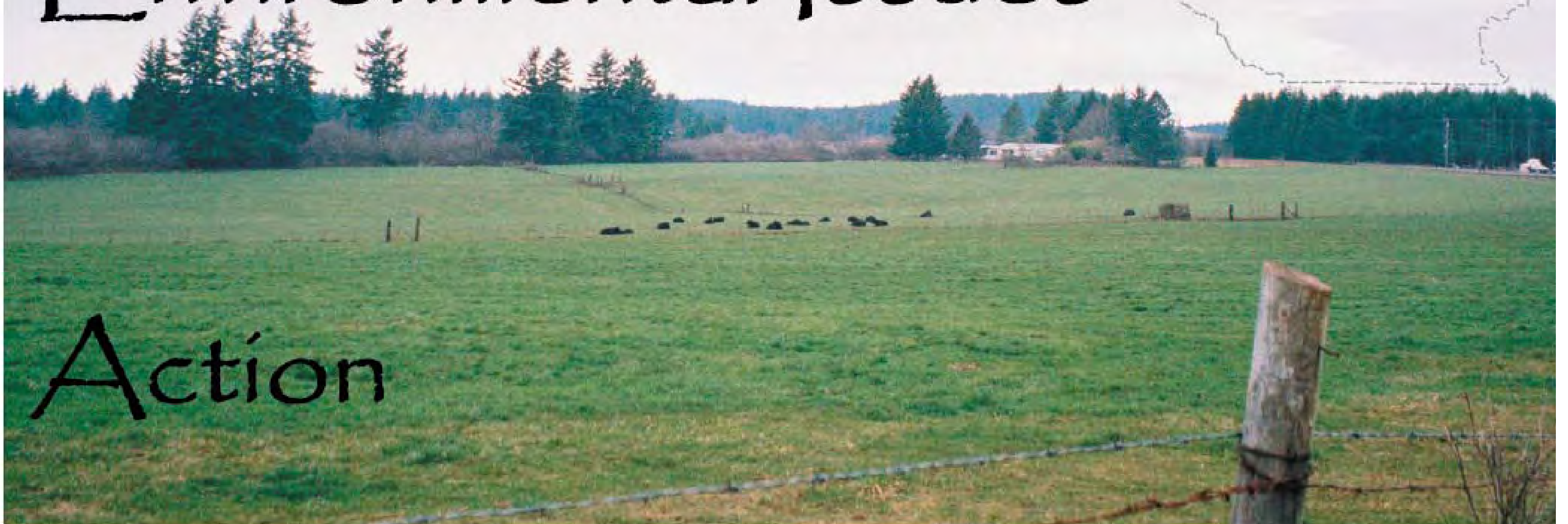
cornerstones in a regionally sustainable food distribution system. Increased financial stability and profitability draw farmers to farmers' markets across the state. The farmers' market is a place where people can purchase fresh produce, novelty food items, and enjoy weekend mornings with friends and family. In Oregon, there are 61 farmers' markets operating each year, with as many as 71 farms represented in local farmers' markets alone.

A price comparison between farmers' markets and grocery stores in Portland showed farmers' markets can in fact be a cheaper alternative to supermarkets. Using a sample shopping list, the cost of the items from grocery stores ranged from \$28.19 to \$36.07, while farmers' markets ranged in price from \$16.64 to \$27.65. Farmers' markets are readily available in the Portland area, but are much less common than their grocery store counterparts. As a result, many people may not be willing to travel the extra distance to a farmers' market, and instead choose the convenience of a grocery store. This may indicate an incentive for farmers' markets to expand to new locations in the Portland area.

Education

Environmental Issues

Action



Education, Environmental Issues, and Action

As a people, in general, and as urban dwellers specifically, we are more removed from our food sources than ever before. Whether this detachment stems from issues related to industrialization, the Green Revolution, or urbanization --or some combination of these and other factors--the resulting separation has come with consequences. Linked to this detachment is the reliance of many consumers on relatively few producers. In order to meet this demand, farmers have turned to mass-production and associated techniques that ultimately degrade the health of the environment, and may be jeopardizing human health as well. While trends as large and omnipresent as this require time to change, the growing markets for organically grown food (Organic Trade Association, 2004) attest to increased public awareness of these issues and the possibility of a large-scale shift towards healthful produce and environmentally sound agricultural techniques. One way of increasing this public awareness may be through a "hands-on" educational approach of teaching schoolchildren about food growing and related issues. The Food-based Ecological Education Design (FEED) project, spearheaded by Dr. Pramod Parajuli of Portland State University, has been designed to provide such an education.

Modern agricultural practices have many negative impacts on the environment, namely the degradation, to varying degrees, of air, soil, and water quality. For instance, within the United States, food travels an average distance of 1,500 to 2,500 miles from farm to dining table. Food that is shipped from one coast of the U.S. to the other can consume as much as 36 times more energy, in the form of burned fossil fuels, than the food actually provides in terms of food energy. This release of large quantities of CO2 associated with this transport may be contributing to global climate change (World Watch Institute, 2002). Couple this with the effect that pollution released from the chemical production commonly used on commercial farmlands has on the atmosphere. Not only might the production of these chemicals further contribute to global climate change, fertilizer and pesticide use on conventional farms contaminate water from run-off that contains some of the roughly 21 million tons of the nutrients nitrogen, phosphate, and potash used each year in the form of chemical fertilizers in the U.S. (USDA, 2004). Soil is in turn affected through erosion, hardening, and the related drop in land productivity (UNESCAP, 1999). Much of this contamination will ultimately wind up in our bodies.

"Seventy-three percent of conventionally grown foods contain residues from at least one pesticide." "The World Health Organization estimates that one million serious, unintentional pesticide poisonings take place globally every year, with millions of additional milder cases likely" (Spitzer [b], 2004). Other effects of exposure to such chemicals include increased cancer rates in humans, growth retardation and deformities in humans, lower fertility rates in men, and the endangerment of animal species, to name a few (Davis, 2002).

The use of chemicals has become the way to sustain an unsustainable form of agriculture, and it is a viscous cycle. The emphasis of yield over sustainability inherent in modern agriculture has created a target for pests and weeds that thrive in monoculture environments (Spitzer [a], 2004). To counter these pests and weeds, the trend has been to use more chemicals, further degrading the health of the environment. Single-crop farming precludes beneficial crop interactions, abandons complimentary relationships between plant cultivation and animal husbandry (e.g., manure used for fertilization), limits fertility-enhancing rotations...and undermines beneficial soil organisms, pollinators and natural pest predators (Spitzer [a], 2004).

What better place to start a fundamental change in the relationship we have to our food than with the education of young people through agricultural education and related topics? This is the notion held by Dr. Pramod Parajuli of Portland State University's Portland International Institute for Ecology, Culture, and Learning (PIIELC). With a grant of \$8,000 each from the EPA, Lewis Elementary, Buckman Elementary, and Edwards Primary Schools will participate in what is called the FEED project with the ultimate goal of providing an education in growing healthy, multicultural foods, providing a platform for kids to practice math and learn about economics, and raise their awareness on the undesirable effects of modern-day agriculture on personal health and the environment.

As part of the FEED program, the formation of a coalition of the Ecological Education Committee, school principals, interested parents, teachers, and agriculture experts has been established, with the stated goal of trying to create a self-supporting, community run program that is not dependent on outside funding. With the cooperation of community partners such as Zenger Farm, Oregon Tilth, and 47th Avenue Farm, teachers will be trained in how to grow food in an ecologically sound manner. This knowledge will not only be passed on to the kids, but to the larger community--including the children's parents and even grandparents--in the hopes of achieving self-reliance and sustainability of the FEED program long after the initial EPA grant has been exhausted.

Buckman Elementary and Edwards Middle School have committed to roughly 20'X 20' garden plots, while Lewis will operate a 40'X 90' plot. In its initial stages, the FEED program aims to grow greens for salads, and simple finger-food items such as cherry tomatoes and snap peas. Eventually, the goal is to grow foods with their cultural origins in Mexico, the Ukraine, and Nepal. All of the food grown will comply with the Portland Public School's (PPS) safe food handling guidelines and will not compete with the established PPS meal service program. However, the students will incorporate the harvested food into their diets either at school (possibly outside of regularly scheduled meal times) or at their homes(see photos 1-3 and Map 1).

Buckman Elementary- 320-SE 16th (97214)

Photo 1



Edwards Primary- 1715-SE 32nd Place (97214)

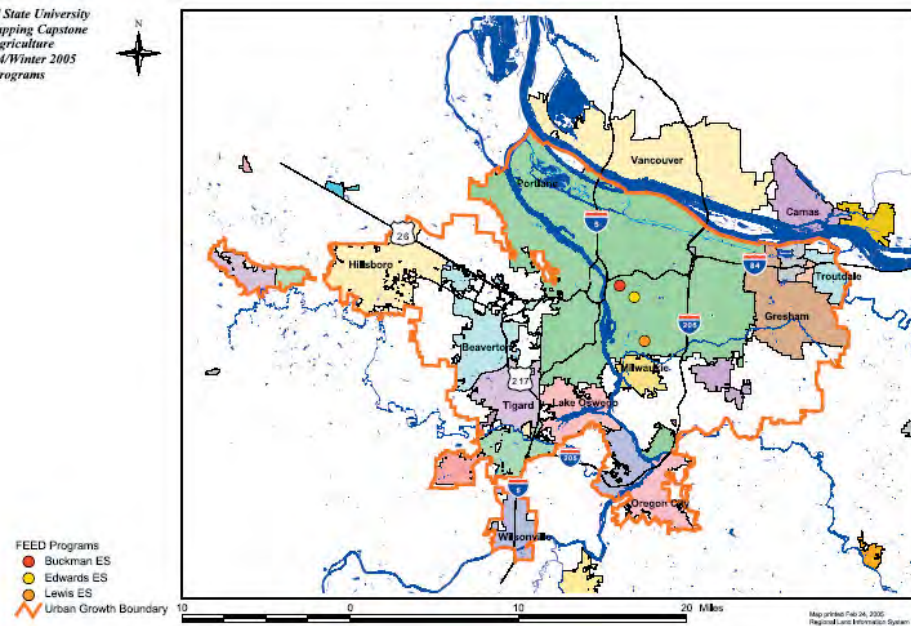
Photo 2



Lewis Elementary- 4401-SE Evergreen (97206)

Photo 3





(Map 1)

Contrary to popular belief, small-scale sustainable agriculture is more productive per acre than large-scale, monocultural farms when output of grains, fruits, vegetables, and livestock produced are measured. Sustainable agricultural practices have been shown to contribute to a community's overall economic and social development by generating "wealth in rural areas that leads to better housing, health services, education, thriving local businesses, and the overall infrastructure and economic development of rural areas." (McCauley, 2004). Food has never been so processed and extensively packaged in our history. A study of the Okologie Institute Vienna found that shopping in a producer-consumer cooperative type store generates 75% less waste by volume than shopping in a supermarket (Stagle, 2002: 148). By educating our young people, these issues may become mainstream in the future, creating a milieu more conducive to change than the present atmosphere.



(Used with permission Ivan Sevgejev)

Photo 4: Children engaged in community gardening.

Urban Agriculture and Immigrants

When immigrants enter the United States, they often face a prolonged period of adjustment to a new culture and its infrastructure. By creating opportunities for political refugees like the Bantu of Somalia, the Hmong from various locales in Asia, and the Mien from Laos to connect to their new homes through some connection to their previous life-ways, integration into their new communities can become easier and more successful. Many of these immigrants, before coming to the United States, practiced agriculture as a way of sustaining life. In many cases, living off the land was the only way to provide food for their families. When people such as political refugees are forced to migrate to a fully developed, industrialized nation, they rely heavily on government aid. Because many of these immigrants can have difficulties obtaining a job doing anything outside of farming, finding such jobs as a source of income to support their families can be a daunting task. A movement that is taking place here in Portland, OR, and around the country, is the push to provide farmland and marketing opportunities for immigrants.

In a study conducted by Portland State University entitled "New Arrivals: Options for Successful Resettlement of the Somali Bantu", it is shown that resettlement for some immigrants hinges on the attainment of certain goals, many of which are related to urban agriculture. These goals are the attainment of economic self-sufficiency and financial stability, the maintaining of cultural and social ties, fostering connections with the broader community, and creating a sense of empowerment and self-determination (Abrams, et al, 2004). The achievement of economic self-sufficiency and financial stability can be aided by creating opportunities for immigrants to grow much of their own food, including culturally familiar produce. This will serve to lower the cost of living, while surplus food can be sold at farmers' markets or other venues to increase financial stability. Maintaining cultural and social ties to friends and family is an important aspect of a successful resettlement. A centralized gathering place, such as a Community Supported Agriculture farm (CSA) or other suitable land can help to alleviate the sense of isolation from one another that many immigrants can face in a new culture. By working in a community garden or a CSA (such as Zenger Farm), isolation from the broader community is decreased and a connection to it is fostered, strengthening resettlement success. When new immigrants do not have to rely on government for finances, a feeling of empowerment and self-determination can create a sense of belonging and solidify a place in their new homes. Above all, some refugees have said that gardening is like therapy, helping to "mitigate the loneliness and depression from being in a new culture and even with their traumatic experiences from back home" (National Somali Bantu Project, 2004).

Many Hmong immigrants have experienced benefits from urban agriculture. In some cases, what started as simple community gardens for

Hmong to grow familiar foods have escalated into big business. Major produce exports to Asia and full-time employment in niche-market commercial farming (National Somali Bantu Project, 2004) have woven the Hmong into the fabric of their new communities. As new political refugees and immigrants arrive in Portland, such a strategy might be employed as a tool to aid their resettlement success. As many as 150 Somali Bantu political refugees have recently arrived in the Portland area, and while farming is not the only employment opportunity, it could offer many of the benefits associated with the difficulties of transitioning to a new home.

Zenger Farm currently has 4 Mien families that tend their own community garden-style plots. Not only do these families grow food for themselves, but Zenger Farm assists them with the sale of food to CSA members and at local farmers' markets. In an effort to further increase the financial stability of the Mien, Hmong, Somali Bantu and others who don't speak English as a first language, Zenger Farm holds the annual Direct Farm Marketing Conference, in conjunction with other community outreach partners such as Portland Farmers' Markets and the Food Policy Council (Stefani-Ruff, 2005; Wisteria, 2004). The goal of the conference is to provide opportunities and techniques for people to advance their agricultural enterprises into more fruitful operations (Wisteria, 2004). Many Hmong women and their families who operate community gardens throughout Portland sell their produce at vending stalls at local farmers' markets (see Photo 5), roadside stands, and to restaurants. Recent advice given to Hmong vendors during the Direct Farm Marketing Conference was for them to include greater variety of unique items for sale at their vending stalls, as many Hmong vendors are offering similar items like flowers and Asian vegetables (Stefani-Ruff, 2005). With the help of community outreach partners like Portland State University, Portland Farmers' Markets, and Zenger Farm who provide farmland, training, and growing techniques, it is easy to see how urban agriculture can foster connections with the broader community and decrease the isolation that so many immigrant communities can face.

(Photo 5: Hmong vendor at Portland Farmers' Market Photo: PFM)





Community Gardens

Relevant Information on Current Community Gardens

During the preparation of this document, the City of Portland began addressing the feasibility of creating more community gardens within the Urban Growth Boundary (see Resolution No. 36272 in appendix). Questions have revolved around the rationale of community gardens, how large a potential location must be, and how much it will cost to establish a community garden. Garden sites need to be at least 10,000 square feet in order to support the community and have an impact in the neighborhood as a significant green space. The actual cost to build a garden, depending on the site, is between \$35,000 and \$50,000. The following is a price breakdown for the establishment of a community garden.

(Table 1-Cost of creating community gardens)

Land size	accessible raised garden beds	#plots with community space
7,500 sq. ft. (75x100)	3	12
fencing/gates cyclone:	\$5,250	
vinyl cyclone:	\$7,000	
mow strip, concrete:	\$2,000	
raised beds, surface:	\$2,000	
soil prep/amendments:	\$2,500	
Water meter/backflow:	\$6,500	
Irrigation/ four outlets:	\$3,000	
Gravel/ paved pathway:	\$1,500	
shed:	\$1,500	
picnic table:	\$500	
sign:	\$500	
bulletin Board:	\$500	
TOTAL ESTIMATE	\$32,750	
Land size	accessible raised garden beds	#plots with community space
15,000 sq. ft. (100 x 150)	2	24
fencing/gates cyclone:	\$7,500	
vinyl cyclone:	\$10,000	
mow strip, concrete:	\$2,500	
raised beds, surface:	\$2,000	
soil prep/amendments:	\$3,500	
Water meter/backflow:	\$6,500	
Irrigation/ four outlets:	\$4,800	
Gravel/ paved pathway:	\$3,000	
shed:	\$2,000	
picnic table:	\$500	
sign:	\$500	
bulletin Board:	\$500	
TOTAL ESTIMATE	\$43,300	
Land size	accessible raised garden beds	#plots with community space
22,500 sq. ft. (150 x 150)	4	44
fencing/gates cyclone:	\$9,000	
vinyl cyclone:	\$12,000	
mow strip, concrete:	\$3,000	
raised beds, surface:	\$2,800	
soil prep/amendments:	\$4,500	
Water meter/backflow:	\$6,500	
Irrigation/ four outlets:	\$5,500	
Gravel/ paved pathway:	\$3,400	
shed:	\$3,000	
picnic table:	\$500	
signs:	\$1,000	
bulletin Board:	\$500	
TOTAL ESTIMATE	\$51,700	

Community Gardens are not temporary facilities, but are considered to be outdoor "community centers" (Pohl-Kosbua, 2004). Each plot is typically 20 x 20 feet and gardeners pay an annual fee of roughly \$45. However, smaller garden plots are also available, and cost less too. Some are 10' x 20' with a \$23 annual fee, while some are 4' x 8' accessible raised beds with a \$15 annual fee. There is generally a deposit for

new gardeners of about \$10 (Portland Parks and Recreation, 2004). The following table contains all currently known community gardens within the UGB. Due to the difficulty in locating all of the community gardens within the UGB, there may be some unintentional omissions (Table 2 and Map 2).

Possible Church Locations for Community Gardens

OWNER	Site Address	City State Zip	Acres	Area ft
Aloha Christian Life Cent	5585 SW 209th Avenue	Aloha, OR	4.249	185106.024
Assemblies of God	P.O. Box 133	Hillsboro, OR	1.620	70660.568
Bethany Presbyterian Chur	15505 NW Springville Rd	Portland, OR	5.382	234481.472
Bethlehem Baptist Church	17979 SW Stafford Rd	Lake Oswego, OR	1.519	66183.791
Bethlehem Lutheran Church	18866 SW Johnson	Aloha, OR	1.742	75896.015
Calvin Christian Reformed	16001 SE Main St.	Portland, OR	0.248	10789.068
Church Latter Day Saints	50 E North South Temple	Salt Lake City, UT	2.201	95666.390
Church of Jesus Christ of	50 East N Temple	Salt Lake City, UT	4.348	189400.982
Clackamas PK Friends Chur	8120 SE Thiessen Rd	Milwaukie, OR	0.685	29826.463
Corp of Presiding Bishop	50 E North Temple	Salt Lake City, UT	0.987	43002.816
Corp of Presiding Bishop	50 E North Temple	Salt Lake City, UT	0.649	28270.066
Greater Lutheran Church	13250 SE Sunny ide Rd.	Clackamas, OR	1.685	73410.737
Damascus Assembly of God	19070 SE Sunnyside Rd	Boring, OR	2.318	100955.163
Eastern Orthdx Ch Annunc	13515 SE Rusk Rd	Milwaukie, OR	0.832	36246.525
Emmanuel Community Church	13361 SE 172nd Ave	Clackamas, OR	2.504	109086.147
First Baptist Church	11075 SW Gaarde	Tigard, OR	1.344	58552.877
First Free Methodist Chur	P.O. Box 3127	Gresham, OR	3.198	139203.940
First Presbyterian Church	1321 Linn Ave	Oregon City, OR	4.352	189589.190
Greater Portland Baptist	17800 SE Main St	Portland, OR	1.148	50047.141
Gresham United Methodist	820 NE 8th St.	Gresham, OR	1.124	48957.711
Harvest Community Church	21235 NW Quatama Rd	Beaverton, OR	0.398	17344.794
Hillcrest Miss Baptist Ch	P. BOX 2071	Oregon City, OR	1.128	49037.711
Hillsboro Church of the N	1310 NE 21st Ave.	Hillsboro, OR	1.803	78552.018
Immanuel Bible ellowship	20805 SW Farnington Rd	Beaverton, OR	0.467	20335.766
Intl Ch Foursquare Gospel	1100 Glendale Blvd	Los Angeles, CA	0.443	19309.810
Japanese International Ba	8500 SW Spruce St	Tigard, OR	0.785	34216.298
Lake Baptist Church	4565 Carman Dr	Lake Oswego, OR	1.463	63730.321
Light of Life Lutheran Ch	7380 SW Grabhorn Rd	Aloha, OR	1.938	84339.924
Living Hope Fellowship	P.O. Box 7400	Aloha, OR	1.203	52418.696
Methodist Ch of Sherwood	1035 E Willamette	Sherwood, OR	0.593	25842.738
Methodist Church of Tuala	P.O. Box 6	Tualatin, OR	1.450	63167.183
Mt Scott Church of God	10603 SE Henderson	Portland, OR	1.572	68493.526
Mt. Hood Christian Center	2500 SE Palmblad Rd	Gresham, OR	0.995	43342.621
North Willamette Christia	444 N. Holly St	Canby, OR	1.572	68466.426
Our Redeemer Lutheran Chu	12256 SW 136th Ave	Tigard, OR	2.664	116025.067
Portland Korean UTD Metho	18788 SW Pilkington Rd	Lake Oswego, OR	1.429	62258.731
Pre bytery of the Cascade	12250 SW Denny Rd.	Beaverton, OR	0.757	
Presbytery of Portland of	19830 SE Division St	Gresham, OR	1.669	72697.281
Roman Catholic Archbishop	2838 E Burnside	Portland, OR	1.389	60515.462
Roman Catholic Archbishop	2838 E Burnside	Portland, OR	0.924	40262.503
Spring Mtn Bible Church I	12152 SE Mather Rd.	Clackamas, OR	0.672	29278.294
Spring Mtn Bible Church I	12152 SE Mather Rd.	Clackamas, OR	0.672	24007.179
Tigard Assembly of God	11265 SW Gaarde St.	Tigard, OR	0.485	21140.136
Trinity Church of the Eya	10900 SW 121st Ave	Tigard, OR	2.318	100972.315
Trinity Evangelical Luth	5520 NE Killingsworth S	Portland, OR	0.807	35133.665
Tualatin Valley Community	511 SW 211th	Aloha, OR	1.193	51866.447
Valley Christian Church	11188 SW Wilsonville Rd	Wilsonville, OR	1.837	80040.967
Village Baptist Church	330 SW Murray Rd	Beaverton, OR	1.170	50946.405
Western OR Conf Ass 7-day	13455 SE 97th Ave	Clackamas, OR	0.478	20836.646
Western OR Conf Assn 7-Da	13455 SE 97th Ave	Clackamas, OR	1.851	80643.228
Western Oregon Conference	13400 SE 97th Ave	Clackamas, OR	0.732	31873.664
Wood Village Baptist Chur	23601 W Arata Rd	Troutdale, OR	1.136	49466.907

(Table 2)

Age range of people in the gardens:

Number of children (0-13): 754

Number of youth (14-18): 204

Number of young adults (19-30): 324

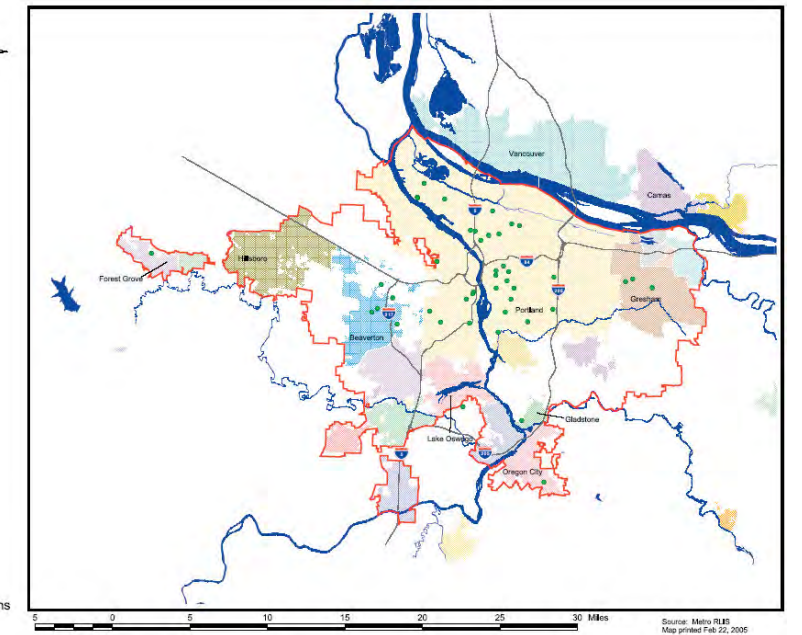
Number of mid-adults (31-61): 998

Number of adult seniors (62+): 186

A total of 2,863 people

Gardeners reported many different reasons for participating in community gardening. The top reason people tend a community garden is for the high quality of fresh food they can grow. The second reason for having a community garden plot is because gardeners do not have adequate gardening space where they live. Other reported reasons include relaxation, gardening experience, environmental reasons, the close proximity of a community garden, exercise, and that people can save money by growing their own food.

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Fall 2004/Winter 2005



(Map 2-Community Gardens within UGB)

(Clackamas Community College, 2003; Lake Oswego Parks and Recreation, 1998; Pacific University, 1996; Portland Parks and Recreation, 2005)



(Photo 6-Sewallcrest Community Garden)

Data gathered on the distance people travel to get to a community garden shows that people generally live in the vicinity of their community garden. On average, the distance is only 14.3 blocks, just under a mile, which most people traverse by car. People may have a community garden plot, but how much time do they actually spend in it? People spend a lot of time in their community gardens. The following is the time spent by all community gardeners in their plots, by season: spring 3,259 hr/week; summer 3,890 hr/week; fall 2,454 hr/week; and winter 882 hr/week, for a total of 10,485 hours for the year. That is an average of just over 12 hours per year per gardener. How easy are gardens to manage? After gaining insight on how many plots there are compared to the number of employees there are to manage these plots, it is easy to see that it is not too difficult.

Total number of garden plot renters: 854
 Total number of garden managers: 32
 Total number of plots: 981
 Total number of raised beds: 76
 Total number of people on wait list: 517

Demand for community garden plots is very high. The wait list for some community gardens is more than a year, as is the case for Colonel Summers Community Garden, Sewallcrest Community Garden (see Photo 6), and Blair Community Garden. All three are located in southeast Portland. However, not all community gardens have a wait list. These include Portsmouth Community Garden in north Portland, Brentwood Community Garden in southeast Portland, and Cully Community Garden in northeast Portland (Pohl-Kosbua, 2004). With this information, demand can only be slightly realized, and more research is needed for a better assessment. To this end, the City of Portland is conducting such research (as of this writing), as described in Resolution 36272 (see appendix).

(Photo 7-Aerial of local cemetery showing possible community garden location)

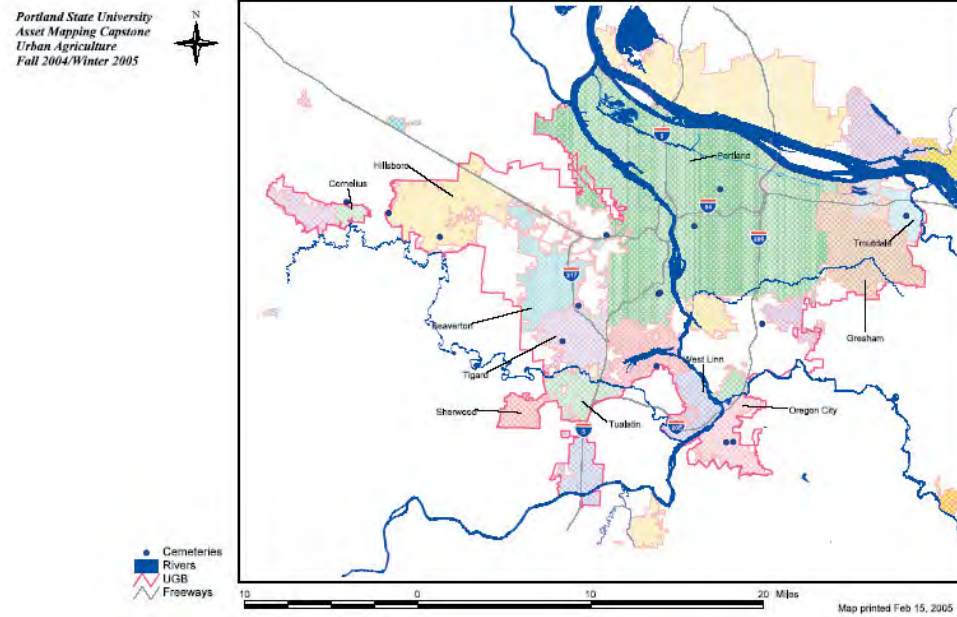
Knowing now that community gardens are in high demand, it seems that the next logical step is to find potential sites for new gardens. While the City of Portland is currently investigating potential locations for new community gardens on city-owned properties such as pump stations, storage tanks and other Water Bureau and Bureau of Environmental Services facilities, other privately owned locations may be perfect candidates for new garden locations as well. What constitutes an ideal location for a new community garden? Gardens need water, so a site with irrigation already installed would be an ideal place. Size is also an important consideration. The City of Portland requires a 10,000 square foot parcel of land before considering it as a potential site.



Another aspect to consider is location. Not only is an investigation of the surrounding neighborhood necessary, but the type of property that the garden would potentially be placed on must also be known. It would be very difficult to place a community garden on land that was steeply sloped.

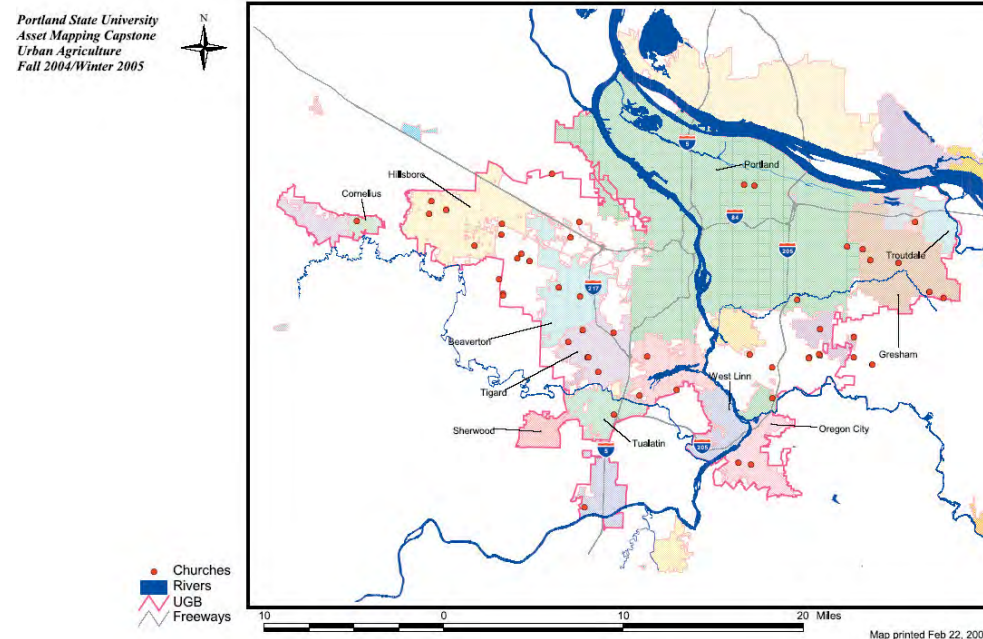
(Photo 8-Aerial of local church showing possible community garden location)

garden on land that was steeply sloped.
 (Map 3-Possible cemetery locations w/useable land)



This must be added to the the description of “potential” sites to narrow the scope. Several types of locations were studied and only two were accepted as possible locations: church lots and cemeteries. Churches may be a viable option because they were generally established many years ago, so in turn, would most likely have large portions of land. Due to the cost of land that was quite remote in that time period, it was possible for them to purchase large portions at low prices. Another reason for picking churches as potential sites for community gardens is their philanthropically ideologies, regardless of denomination. Many churches sponsor programs that help different segments of the population. Because community gardens can provide fresh, healthy food for some who typically cannot afford it at supermarkets, segments of the population. Because community gardens can provide fresh, healthy food for some who typically cannot afford it at supermarkets, it

(Map 4-Possible church locations w/useable land)



would be a good extension of what they are already doing. The next location up for consideration is cemeteries. This may not seem like an appealing place to put a garden, but cemeteries seem to be a prime location for community gardens. Cemeteries have usually been established for over 100 years, therefore, like church properties, cemeteries most likely have large portions of land. But unlike churches, when cemeteries have large portions of undeveloped land, such land is usually not used for anything at all. Churches may periodically use unallocated land for temporary use, which is a consideration when looking for new community garden locations.

The database for church locations was acquired from the telecommunications company Qwest, which listed 285 property locations. Two sources were used to locate cemeteries, the Parks layer of the Regional Land Information System (RLIS) database and information from the Oregon Mortuary and Cemetery Board. When compiled, a list of 72 lots within the Portland Metropolitan Area emerged; acreage of the lots was retrieved from the tax lot layer of RLIS. Church and cemetery lots that were less than 1 acre were eliminated due to the possibility that these plots would be developed into buildings, parking lots, and burial locations. Aerial photographs from the RLIS database were used to check the remainder of the locations for possible usable land. After checking each site from both categories, there were 52 church lots and 15 cemetery lots that had sufficient area for new community gardens. The area of the possible locations was calculated and all plots under 10,000 square feet were eliminated. The total amount of acreage that was found to be usable is 168 acres; eighty from churches, 88 from cemeteries (See photos 7 & 8 and Maps 3 & 4).

Community

Supported

Agriculture



Community Supported Agriculture

Another manifestation of urban agriculture is Community Supported Agriculture (CSA). In Portland, most of the Community Supported Agriculture farms (CSA's) are located outside of the urban growth boundary (UGB) and maintain shareholders within the UGB, making CSA's in this region a less direct form of urban agriculture. One goal of urban agriculture is to provide a paradigm for farmers to grow high quality crops. Through sustainable growing techniques, farmers can maximize their production while minimizing environmental degradation, acting as stewards of the land.

CSA's are cooperative efforts between farmers and shareholders. Each shareholder purchases a harvest share before the harvest season and receives produce on a periodic basis throughout the growing season. Each party benefits from this relationship. The shareholder receives fresh produce on a regular basis during the harvest season for a very competitive price, while the farmer receives a down payment on the harvest which can be used to buy supplies for the coming season. In this way, farmers secure a profit margin for their crops. The profitability of CSA's is somewhat limited because the farmer must grow and deliver staple crops, which have lower values than items such as cut flowers or specialty foods.

According to the Center for Integrated Agricultural Systems (CIAS), the average age of primary CSA farmers is 43.7 years old, which is 10 years younger than the average age of all farmers, as reported in the 1997 Census of Agriculture. The CIAS survey also found 43% of primary CSA farm operators have less than 10 years of experience. Seventy-two percent of primary CSA operators have at least a college degree, and nearly 25% of primary CSA operators hold graduate degrees. Nationally, 70% of CSA farms have fewer than 30 acres of cropland. Fifty-eight percent of CSA farms use at least half of their land for CSA farming operations, while 37% of CSA farms use over 90% of their land for CSA farming operations. Over 94% of CSA's practice some type of organic or biodynamic growing technique and 41% are certified organic growers (Lass et al, 2003).

Several farms involve key stakeholders in their farm operations. These key stakeholders participate in "core groups." Core groups help farmers make decisions, gather feedback, find new members, and write newsletters. Nationally, 72% of CSA farmers do not involve core groups. Farms using core groups have a median income of \$10,000 higher than farms without core groups, and on average sell more shares for higher prices than farms without core groups. CSA farms with core groups are also more likely to organize social events, participate in educational programs, and offer assistance to low-income families who want to become farm members (Lass et al, 2003).

Economic Perspectives of CSA

Community Supported Agriculture (CSA) farms have many benefits over traditional, commercial farms. These include community building, environmentally sound farming techniques, and providing the highest quality and healthiest foods the earth has to offer. Is there a monetary rationale to CSA? Could CSA farmers be making enough to survive comfortably and how do their incomes stack up to those of conventional farmers, and more generally, to national average incomes?

According to the United States Census Bureau, the average per capita income in 2001 was \$22,851 (DeNavas-Walt, 2002). In a survey of 825 farmers from 316 farms in 41 states across the U.S., conducted by the University of Wisconsin-Madison's Center for Integrated Agricultural Systems, it was found that CSA farmers earned a median gross income of \$15,000. Three percent of the surveyed farms reported earnings under \$1,000, while less than 1% earned \$250,000 or more; the large number of outliers at the bottom end of the spectrum (due to such farms being relatively new and just getting off the ground) accounts for a lower than expected median income. Only 39% of conventional farmers earn over \$20,000 (gross) compared to 60% of CSA farmers. "Nearly three-quarters of US farm workers earn less than \$10,000 per year and three out of five farm worker families have incomes below the poverty level" (Spitzer [b], 2004). This partially explains why so many conventional farmers must rely on off-farm income.

The economic pressures faced by conventional and CSA farmers are fundamentally different. CSA farms are traditionally smaller than commercial farms. As few as 10 acres of CSA farmland can provide enough income to support a family (University of Idaho, 1996), which eliminates the need for large, costly machinery. Due to their smaller size and customer base, CSA's do not sell produce to supermarkets. Ninety-four percent of CSA farms produce organic food (University of Wisconsin-Madison, 2004) that is typically not sold out-of-state, keeping transportation costs to a minimum. It is evident that CSA farmers are not subjected to the same economic pressures associated with conventional farming, such as the buying of costly farm machinery, pesticides and herbicides, middlemen, and the diminished crop value due to the effects of large volume selling to one or two buyers (Eat The State, 1998).

As a result of these costs, conventional farmers may keep only \$0.21 of every dollar earned, while CSA farmers keep 100% of every dollar earned before taxes (Thomas, 2002). CSA farmers also have concrete financial security due to advance payment for crops by the membership (University of Wisconsin-Madison, 2004), so typically, there is no spending on crop insurance premiums or interest on debt accrued in order to pay for conventional farming-related expenditures like marketing costs (Eat The State, 1998).

Furthermore, conventional farming techniques have focused on growing food that can be transported over long distances without spoiling, thereby diminishing food quality. The more environmentally sound techniques of CSA produce the freshest, best tasting produce, and contribute 75% less waste than that associated with conventional agriculture and supermarket shopping (Stagle, 2002). With all of these benefits, how does the cost of produce from a CSA farm compare to the cost of produce bought from a supermarket? To answer this question, a comparative study was conducted, and the answer may be surprising.

(Table 3-Grocery stores price comparison)

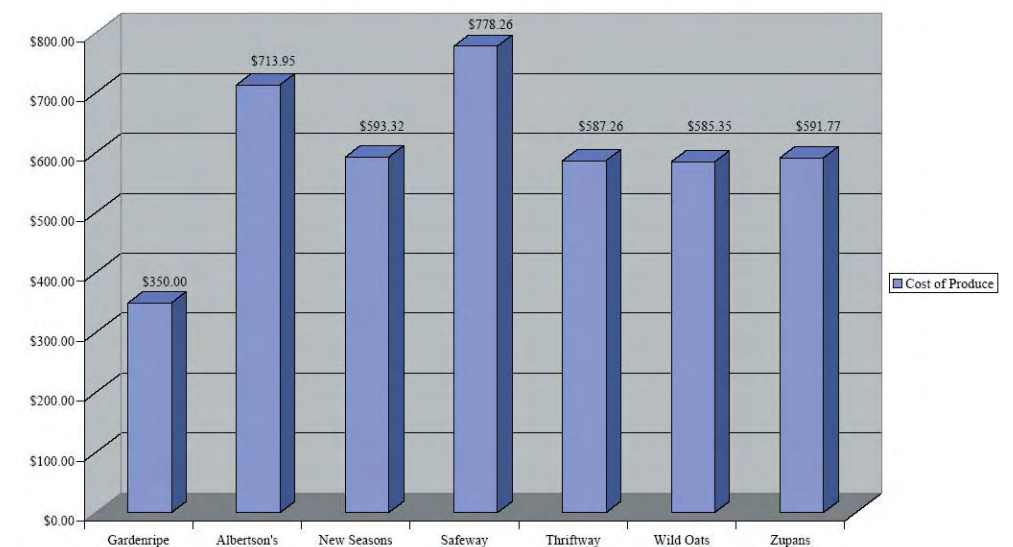
Studied Grocery Stores - Price Comparisons

	Total (Verified) Costs*	Comparison Matches** (%)	Useful Matches*** (%)	Projected Costs****
Gardenripe	\$350.00	100%	100%	\$350.00
Albertson's	\$713.95	77%	72%	\$990.32
New Seasons	\$593.32	84%	51%	\$1,159.67
Safeway	\$778.26	74%	63%	\$1,239.45
Thriftway	\$587.26	77%	53%	\$1,097.92
Wild Oats	\$585.35	63%	42%	\$1,398.33
Zupaus	\$591.77	72%	53%	\$1,106.36

* Based only on useful matches.
 ** The grocery store carried the product Gardenripe included.
 *** These matches had compatible measurement units for a given item (e.g. a cucumber by weight and cucumber by quantity was not a useful match).
 **** Calculates the total cost using the useful match percentage.

Gardenripe, a CSA located near Silverton, OR, provided pricing information and a comprehensive list of the produce it delivered to each shareholder for the year 2004 (Schiedler, 2004). The cost of the same produce (or a percentage of it when items were not available) purchased from 5 grocery stores around the Portland area was then calculated. The "brick-and-mortar" locations of three stores were used in this survey, while two stores' produce prices were surveyed on-line. The inclusion of Zupan's and New Season Market in the comparison study ensured that produce prices came from a diverse range of stores that cater to different interests. The former is a higher end, more expensive store. The latter is a store that emphasizes local produce at competitive prices. The results of this survey are definitive, as the grocery store produce was more expensive than the cost of produce from a Gardenripe share in every case (see figure 1 and Table 3).

Studied Grocery Stores - Verified Costs of Produce

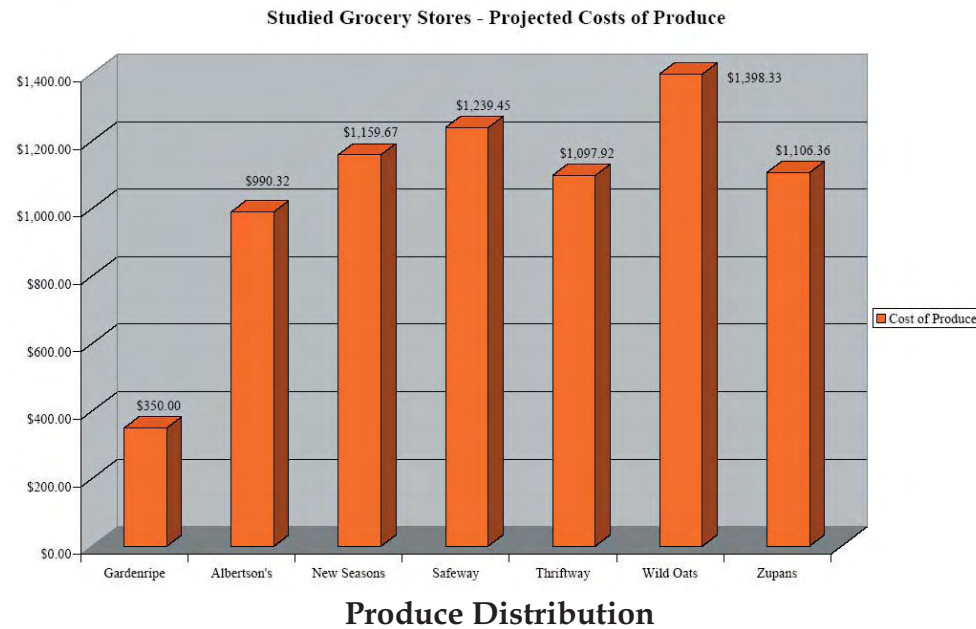


(Figure 1: Verified Price Comparison of Gardenripe full-share and 6 area grocery stores)

It should be noted that the prices of grocery store produce were obtained during the months of November through January, when prices are typically higher than during the peak of the season. One grocery store produce manager commented his prices were higher this year than last due to the Florida Hurricanes and the losses of tomato crops in California due to excessive rain. In most cases, prices would be lower during the spring and summer months, and this should be taken into account. However, based on projections from this analysis, CSA's would likely win a "heads up" price comparison during peak harvest times too (see Figure 2).

This comparative study points to Gardenripe as offering the best price for the goods offered. One notable exception in the data was the inclusion of berries in the Gardenripe share. None of the grocery stores surveyed had the type of berries Gardenripe offered. A pint of berries (approximately 1 pound) at a grocery store usually costs about \$3-\$4, and the Gardenripe share includes 25 pounds of berries. This would add an additional \$75 - \$100 or more to each grocery store's total price, which represents about one-fourth of the entire cost of a Gardenripe share. While CSA shares offer produce at lower prices than grocery stores, the manner in which CSA shareholders get their produce differs from grocery store shopping, and in fact differs amongst individual CSA's.

(Figure 2: Projected price comparison of a Gardenripe full-share and 6 area grocery stores.)



Community Supported Agriculture farms use different, sometimes unique distribution methods to get their crops to shareholders. Some CSA's require the shareholder to come to the farm to pick up the harvest basket, while others deliver the harvest baskets to the shareholder's home. Farms can also set up distribution points, usually near the largest concentrations of shareholders, where produce can be picked up on certain days at certain times. The following outlines the

distribution models of two area CSA's--Vickie's Flowers and Produce and Deep Roots Farm.

Vickie's Flowers and Produce of Forest Grove became a CSA two years ago by dedicating 27 acres of land to growing "natural" fruits and vegetables on their 120-acre farm; they distribute this produce in different ways. Produce is sold at 12 farmers' markets with locations in Astoria, Seaside, Tillamook, Beaverton, Hillsboro, Hillsdale, and Portland. Weekly deliveries are also made to the three area Intel campuses, located in Portland, Beaverton, and Hillsboro. They will be adding four additional pick-up locations for the 2005 growing season, two at Portland State University and two in Beaverton. Produce boxes are provided from early June until October, and they vary depending on the season. Subscribers receive berries, rhubarb, cabbage, apples, lettuce, tomatoes, carrots, squash and many other fruits and vegetables. Vickie's offers shares at \$400 for a full-share (recommended for four people), and \$300 for a half-share (two people). Because they fertilize their crops with manure, their produce is termed "natural" and cannot be certified "organic" (Vanher, 2004).

Deep Roots of Albany, OR, is offering 100 shares in 2005. Subscribers pay \$360 for a large share, \$270 for a medium share, and \$180 for a small share. Like Vickie's, they sell produce at farmers' markets in Corvallis, Beaverton, Hillsdale, St. Helens, Port Blakely, and Portland. Customers pick up their produce at independent farm stand locations at their convenience, as Deep Roots offers flexible pick up times and dates. (Bolster, 2004)

The research shows that CSA produce is a viable alternative to that of grocery stores. Anyone who has purchased organic produce from a supermarket knows how pricey it can be. Through a CSA, organic and natural foods can be purchased for less than the chemically treated produce most grocery stores offer. CSA's are a worthwhile option to explore as a citizen in the Portland Metro area, especially considering the discriminating taste of this city's locals for fresh produce.

To help meet this demand, some of Portland's premier restaurants have incorporated produce grown at local CSA's into their menus. Higgins, located in Portland, buys produce primarily from Sauvie Island Organics LLC. Fresh organic produce undoubtedly contributes to their reputation as one of Portland's signature restaurants. Sauvie Island Organics LLC also sells produce to Wildwood Restaurant and Bar, however neither restaurant is considered a shareholder. While these restaurants are not shareholders in the conventional sense, marketing to restaurants is a significant task. To this end, Sauvie Island Organics LLC employs a year round restaurant accounts manager. The accounts manager is in charge of contacting new restaurants, maintaining contact with current clients and taking their produce orders bi-weekly, directing restaurant harvests, making deliveries, and attending functions. In most cases, Sauvie Island Organics LLC makes the first

contact with prospective restaurants, but a few restaurants have contacted them. The restaurant sales help drive Sauvie Island Organics toward its financial goals in several ways. Restaurant sales have bolstered their income and helped garner their reputation, as the chefs from Higgins and Wildwood are public figures who love to tell satisfied customers where their produce comes from (Raider, 2005).

CSA's are building a strong business platform and appear likely to play a prominent role in the future of urban agriculture in the Portland area. Many lesser known forms of agriculture struggle because they are not financially viable on a small scale. CSA's appear to be financially viable and may even be capable of raising prices as demand increases. However, if grocery store prices remain the same, CSA's may experience a price ceiling, in the form of price resistance. To be viable, CSA's have to remain a less expensive alternative.



Farmers' Markets

Farmers' Markets

Farmers' Markets have become one of the essential elements in a sustainable regional food distribution system. A regional food system aims to create more direct links between producers (farmers) and consumers by growing food or raising livestock in close proximity to the markets where it is sold. Such a system has many advantages. Consumers know where their food comes from, farmers and consumers benefit economically by keeping money within the community, and the environmental and nutritional degradation related to shipping and trucking food over long distances is minimized (The Humane Society of the United States, 2004). One of the keys to maintaining a regional food system is the success and livelihood of regional farmers. Subsisting as a farmer in this country has become exceedingly more difficult with the competition from overseas farms. Though the American agricultural sector is highly productive and efficient, the US is not a low-cost producer, compared to other countries. Foreign products can be grown and transported here for less than an American farmer can simply grow them. Though the prices of produce commodities are about the same, the costs of production in the US, which includes irrigation, fuel, petroleum-based sprays, and labor expenses, have increased. Many US-grown products are more expensive, so food retailers and manufacturers have turned to other countries for less expensive produce (Sustainable Agriculture Research and Education Program, University of California, 2002). Alternative, revenue generating commercial endeavors, such as CSA's and farmers' markets allow for increased financial stability and profitability for farmers. The current situation of farmers' markets in the Portland Metro region is explored and detailed data and analysis of Oregon farmers' markets will be outlined to illustrate their value and reveal their under-representation within the region. The general opinion of today's farmers' markets, however, is that they are novelty shopping outlets, but their importance to farmers and the communities they serve is significant. To see why, a brief history of the farmers' market in western culture is necessary.

The paradigm of growers or craftsman bartering their goods at a local market or bazaar may be as old as the concept of trade itself. These early markets were not supplementing food distribution as today's farmers' markets do, but were an essential component of the early towns forming within and around castles in medieval Europe (Vance, 1990: 129). These markets began in Europe and eventually spread to North America following European colonization. The first such market in the history of the United States was located in an English colony in 1634, under Governor John Winthrop of Boston (Dane County Farmers' Market, 2004).

Today farmers' markets are a fashionable place for the middle and upper-middle classes to purchase fresh produce, novelty food items, and enjoy weekend mornings with family and friends. An example of this new type of farmers' market is the downtown Portland Farmers'

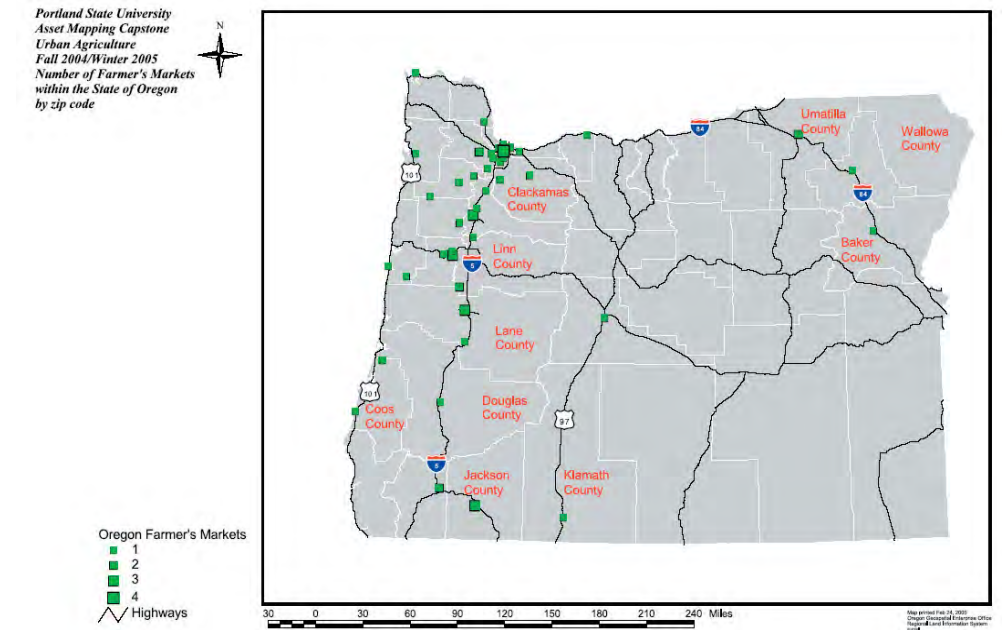
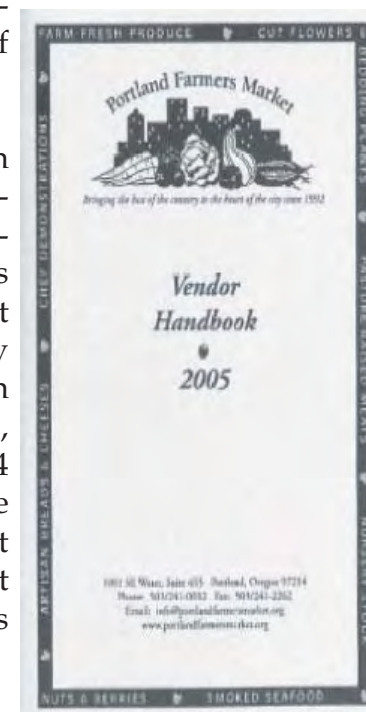


Photo 9-Portland Farmers' Market

Market. It was founded in 1992 by three local community activists who wanted to "bring the country into the city." On their own time, and using their own money, they set out to create a new source of revenue for local farmers, a means of providing education about farming, gardening, and food preparation, and to help build a local community in a large urban setting. They posted flyers and advertised their project in local newspapers, and on Saturday, June 13, 1992, thirteen vendors opened for business on the parking lot of the Albers Mill Building in downtown Portland. The Portland Farmers' Market was officially open for business (Portland Farmers' Market, 2004). In 1999, the market increased the number of operating days to include Wednesdays, and eventually the number of vendors grew. Today the Portland Farmers' Market is one of the largest in the city, with over 140 vendor stalls open for business on Wednesdays, Thursdays and Saturdays during the months of operation (Stefani-Ruff, 2005).

The information below sheds more light on the importance of farmers' markets and illustrates some of the spatial and price-comparison data for Oregon's farmers markets and local grocers within the region. The first step was to identify how many and exactly where the farmers' markets are located in the state of Oregon. Sixty-one markets, mostly clustered around the I-5 and I-84 corridors, were identified throughout the state (see map 5). These markets may not constitute an exhaustive list due to the fact that small, unidentified roadside markets may be located throughout the state.

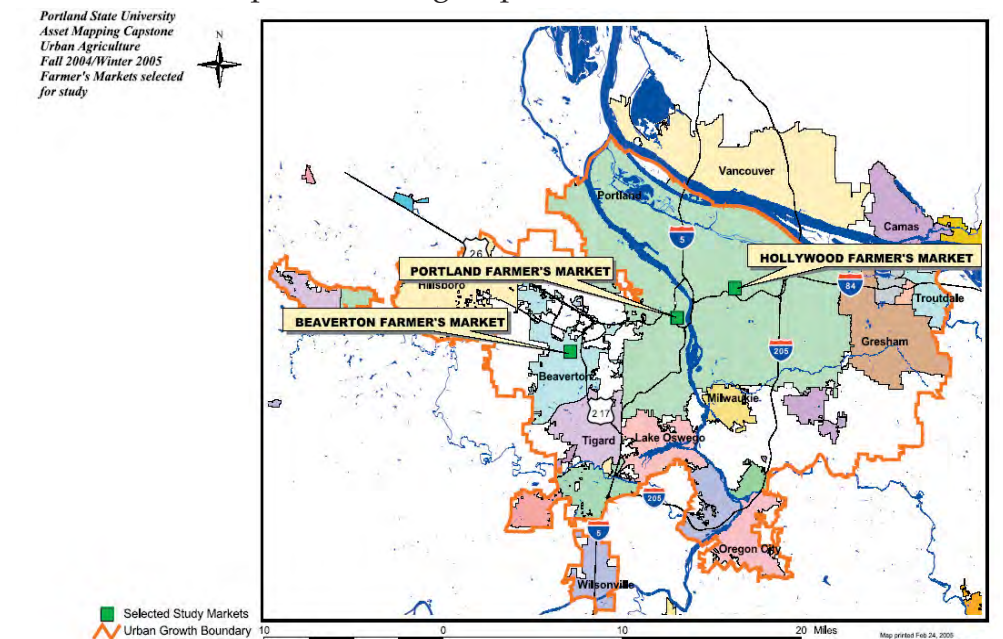
(Figure 3: Portland Farmers' Market Vendor Handbook)



(Map 5-Oregon's Farmers' Markets)

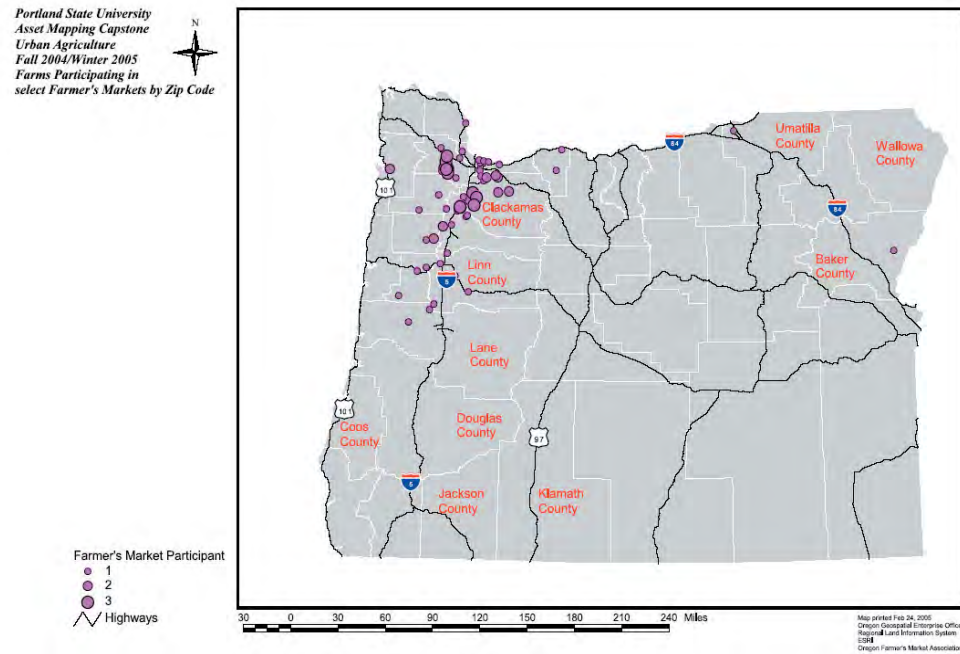
However, the sixty-one markets identified comprise the large scale, multi-vendor, centrally organized farmers' markets in Oregon. The next step was to identify the farms that participate in these sixty-one farmers' markets, but first the scope of the study needed to be narrowed.

Three farmers' markets within the Urban Growth Boundary were identified as a representative group.



(Map 6-The 3 studied farmers' markets)

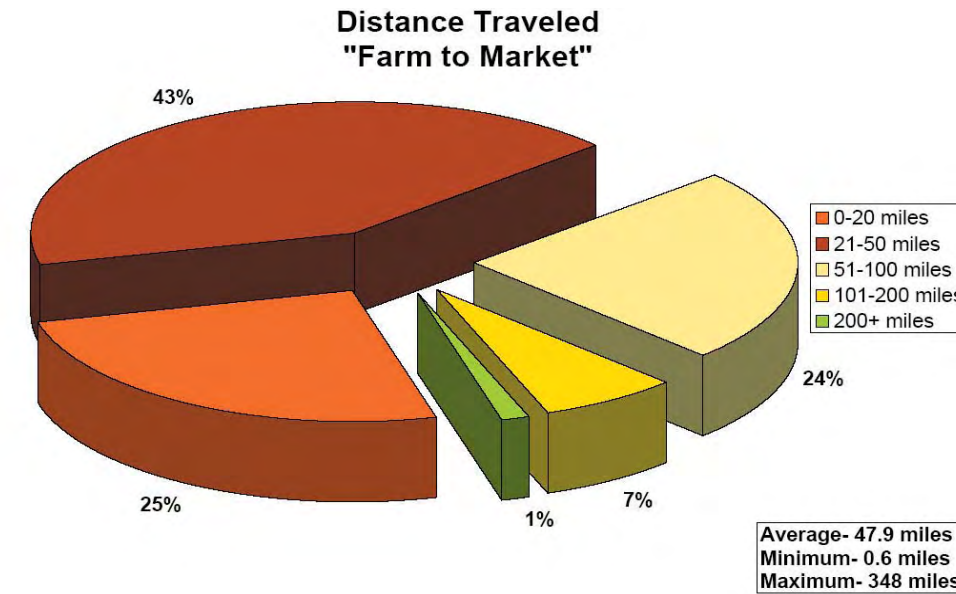
These markets are the Beaverton, Portland and Hollywood Farmers' Markets (see map 6). Seventy-one individual farms participate in one or more of the chosen representative farmers' markets (see map 7). Due to the fact that farms may participate in two or more of the three representative markets, it is safe to assume they comprise an accurate depiction of those farms that serve the Portland Metro region.



(Map 7-Farms participating in local farmers' markets.)

If additional farmers' markets were added to the study, the number of participating farms would most likely not increase significantly. For example, Liepold Farms (Boring, OR), Packer Orchards (Hood River, OR), and Unger Farms (Cornelius, OR) participate in the Portland, Beaverton and Hollywood Farmers' Markets. The relative locations of the participating farms are worth noting as well, as the farms are also clustered near the I-5 and I-84 corridors. This clustering would seem to make sense because it is easier for the farms with quick access to those major transportation corridors to get their product to the markets, especially when you consider exactly how far some farmers are willing to travel to participate in the Portland Metro regions local farmers' markets. For example, Eagle Creek Orchards (Richland, OR) travels an estimated 304 miles from Baker County to participate in the Beaverton Farmers' Market. If Eagle Creek Orchards was not located within reasonable distance to Interstate-84, it is unlikely they would be willing to transport their produce to such distant markets. The logistics of transportation must be one of the most important factors a farmer considers when deciding to participate in a farmers' market. This assumption seems reasonable when you consider the wide range of distances traveled by participating farms. Of the 71 farms identified that participate in the representative study group (the Portland, Beaverton and Hollywood Farmers' Markets), 43% travel between 21 and 50 miles to market, 24% travel between 51 and 100 miles, and 7% travel over 100 miles. On average, the farms included in this study travel 47.9 miles to deliver their produce to the Portland Metro region's local Farmers' Markets (for a full breakdown of the "distance traveled" distribution, (see figure 4).

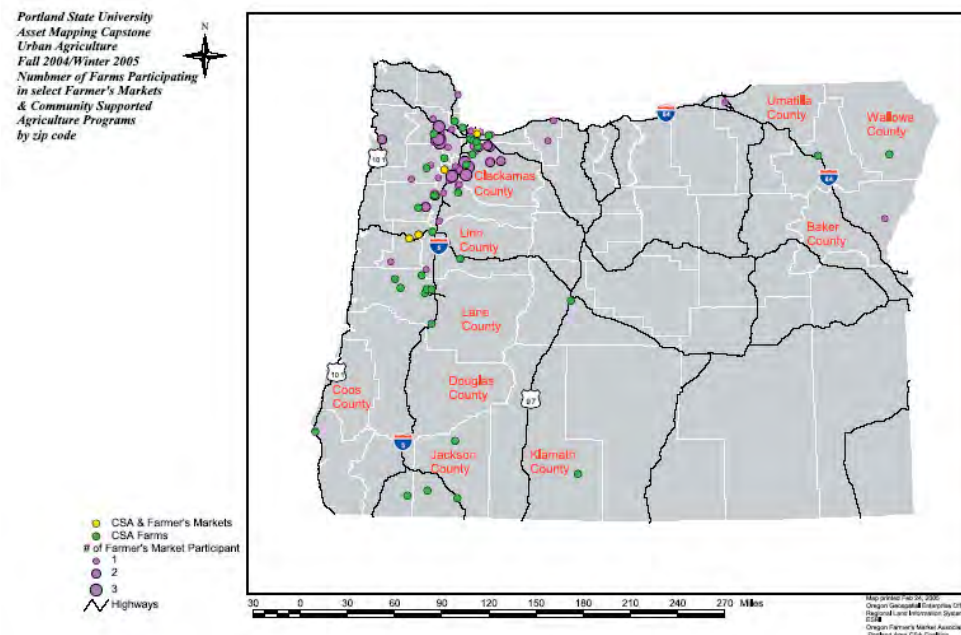
The assumption can be made that farmers' markets in the Portland Metro region meet the requisite requirement of a "Regional Food System". As stated earlier, a regional food system aims to create more direct links between producers (farmers) and consumers by



(Figure 4: Distance Traveled from farm to market.)

growing food or raising livestock close to the markets where the products are sold. Sixty-eight percent of farms participating in the Portland, Beaverton, and Hollywood Farmers' Markets are located within 50 miles of the market.

As previously mentioned, participation in a farmers' market is one way a farmer can generate alternative streams of revenue. Of the seventy-one farms that participate in the three representative Portland metro region markets, only four of them are also Community Supported Agriculture farms. These farms are highlighted in yellow on the map (see Map 8).



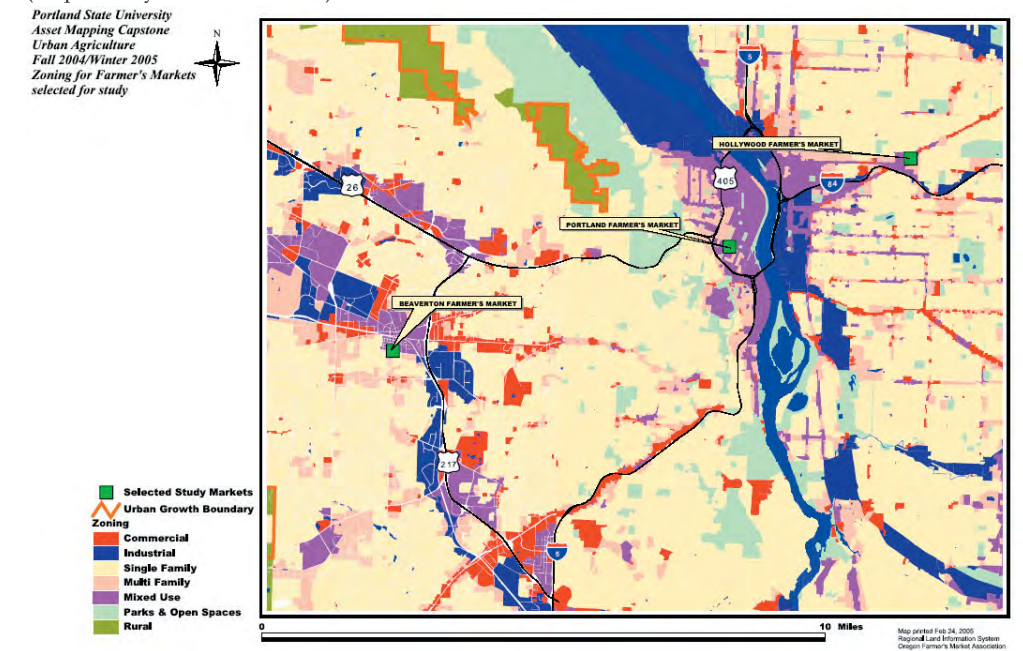
(Map 8: Farmers' Market Participants.)

An initial assumption was that many of the farms that participate in farmers' markets would also have a Community Supported Agriculture program as an additional source of revenue. However, this seems not to be the case. Increased research into this topic is needed to discern why. After discovering where the larger farmers' markets are

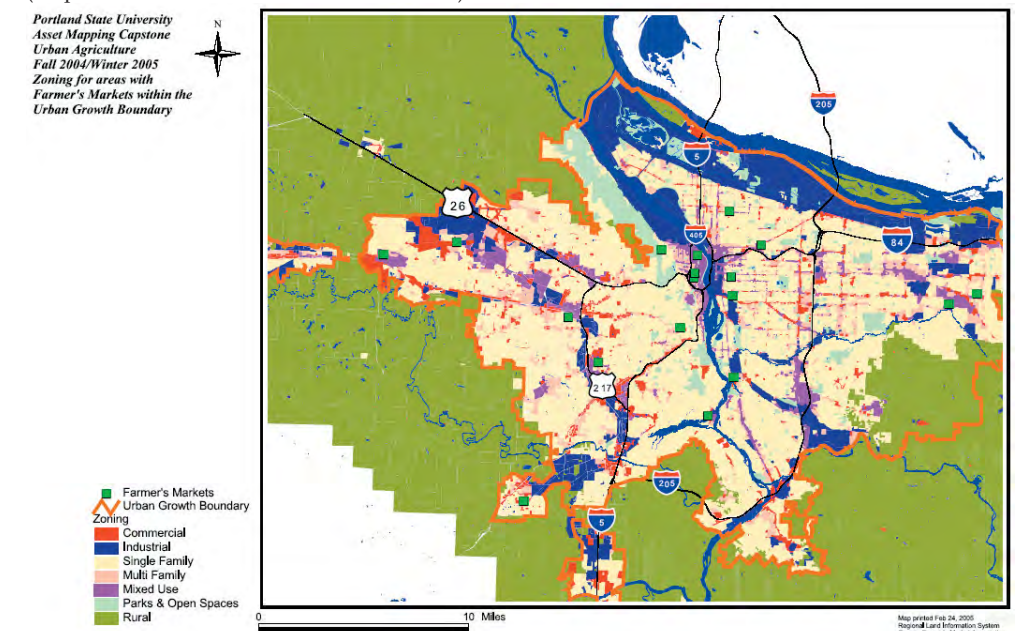
located and which farms participate in a sample of the Portland Metro regions farmers' markets, the next step was to research, in more detail, exactly why the farmers' markets are located where they are.

The representative group of three Portland area farmers' markets was again used, this time to create detailed zoning maps of the areas surrounding the representative markets. These maps demonstrate that Portland's local farmers' markets tend to be located in "mixed-use" areas (see Map 9 & 10). A second key feature of location is the demography of the surrounding neighborhoods. These surrounding neighborhoods have a significantly higher median income (see Map 11 & 12) (US Census Bureau, 2000). It would seem that in addition to the concern about the appropriate space to host a farmers' market, the location relative to customers is equally important. The idea would be

(Map 9-Study Market Locations)

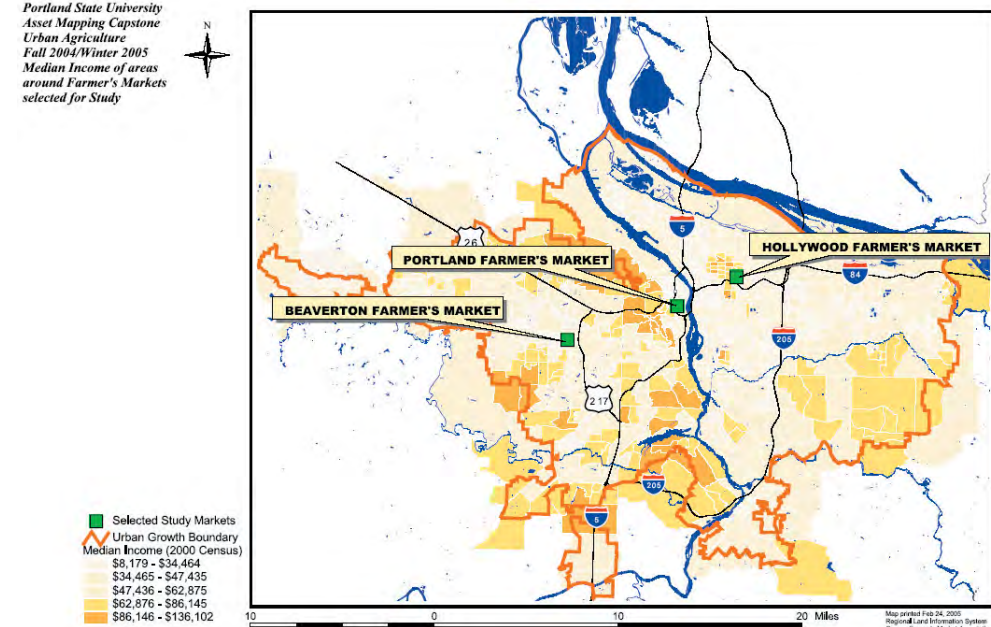


(Map 10-Local Area farmers market locations.)

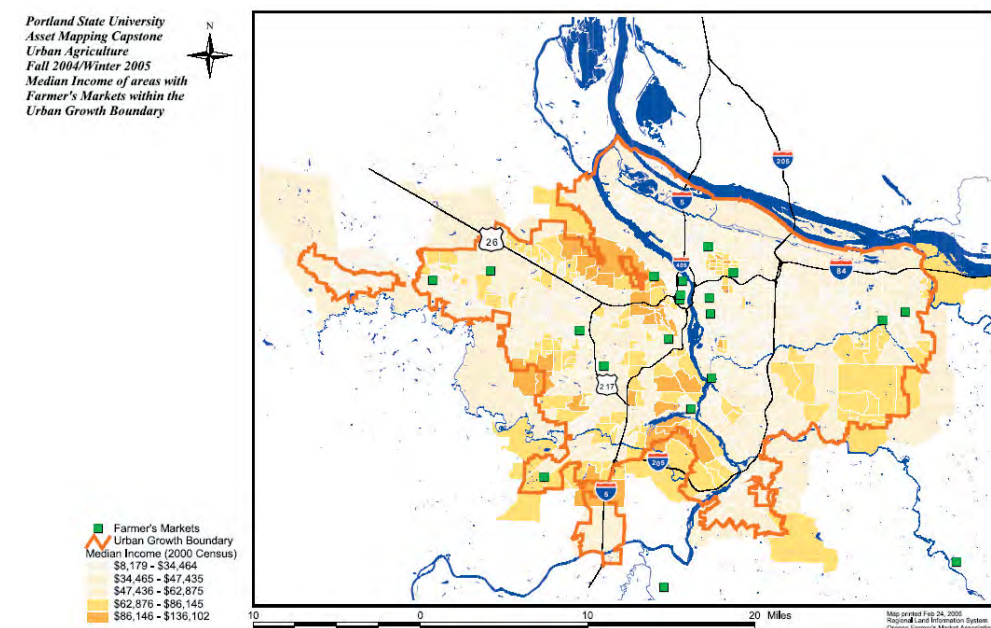


to locate a market in a mixed-use area. Here, customers have access to good parking and transportation hubs. Such a location ensures that the available spaces are easily accessible to your customers, and in this case, easy accessibility means being located in areas adjacent to your customers. Site location is one of the most important aspects to establishing and sustaining a profitable farmers' market. In 1999, the Peninsula People's Farmers' Market in North Portland began operations only to close two years later due to dwindling crowds and farmers no longer leasing vendor stalls. Patt Opdyke, one of the original founders of the Peninsula People's Farmers' Market, believes that some of the reasons the market failed included poor location and local residents' lack of disposable income (Anderson, 2005). The Peninsula People's Farmers' Market lacked a prime location, and as a result was not able to sustain itself as a business venture. The next step was to collect and compare price data from the three representative farmers' markets

(Map 11-Three studied markets in relation to income.)

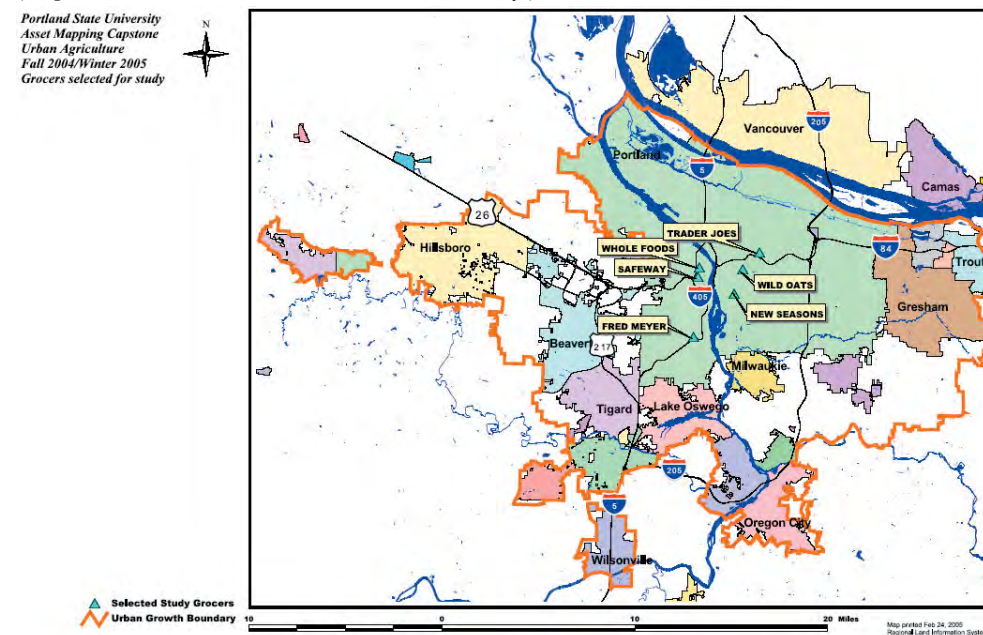


(Map 12-All UGB farmers' markets in relation to income.)

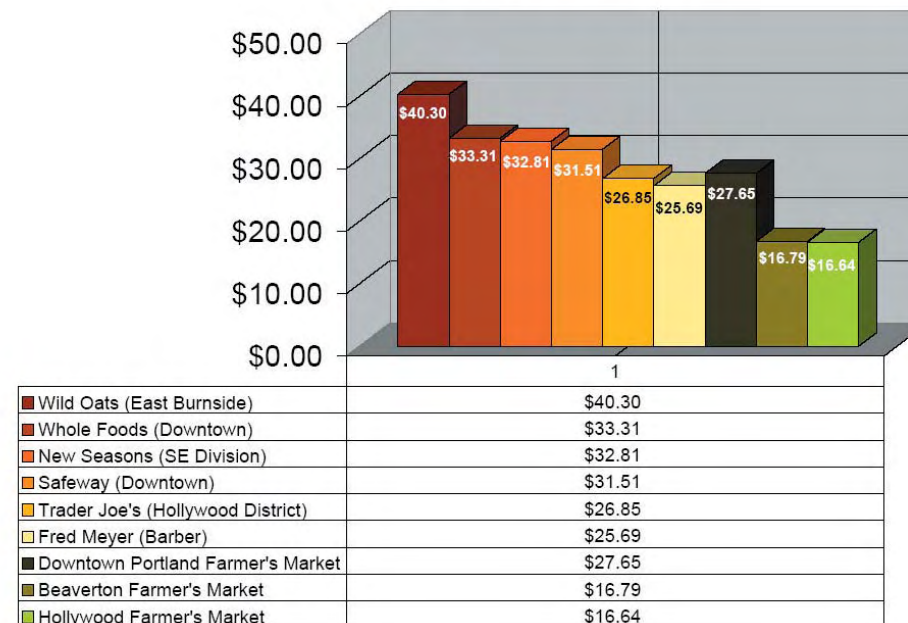


with a group of representative supermarkets from a similar location. After identifying four commercial supermarkets (Wild Oats-East Burnside, Whole Foods-Downtown, New Seasons-SE Division, Safeway-Downtown, Fred Meyer's and Trader Joe's-East Portland) (see Map 13), price data was collected for a specific group of items from all seven locations (three farmers' markets and four supermarkets). The specific group was made up of eleven identified produce items which constituted a "basket of produce" which could be compared across vendors. The "basket" included basil, bell peppers, spinach, cauliflower, red potatoes, apples, flower bunch, broccoli, green beans, and cherry tomatoes. Once the data was collected and graphed, it became clear that produce sold at the farmers' markets is cheaper than for all four of the identified supermarkets for this comparative study (see Figure 5).

(Map 13-The 6 Commercial Markets used in the study.)



Cost per Sample Food Basket



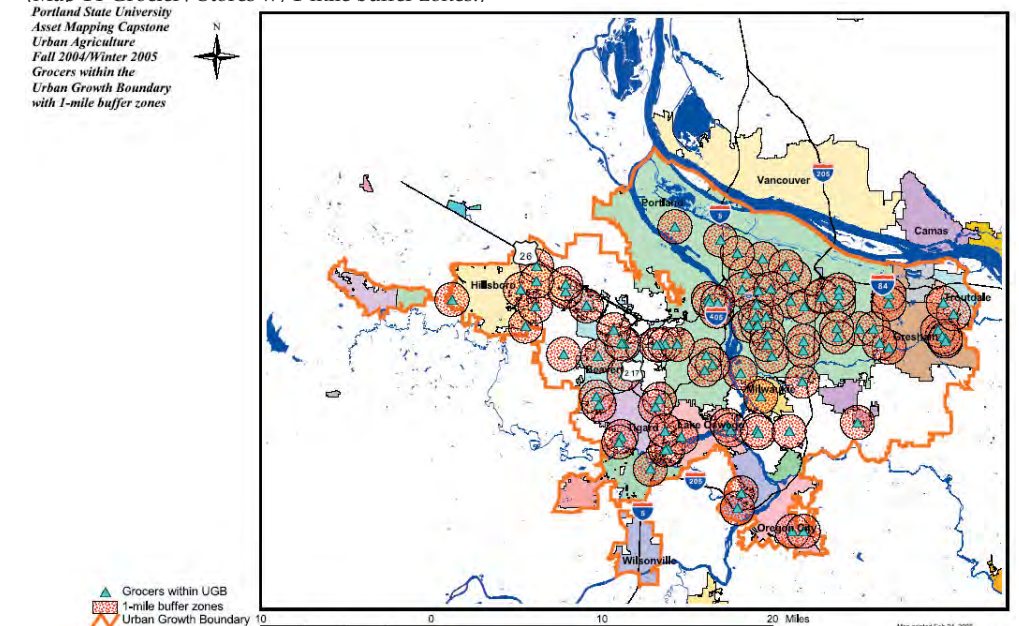
(Figure 5: Cost per Sample Food Basket.)

This finding seems to go against the general opinion that the cost of

produce at farmers' markets is inherently more expensive than at a supermarket. This idea is a widespread misconception. Dianne Stefani-Ruff, a representative of the Portland Farmers' Market, stated that prices would be higher than at local grocery stores due to the freshness of the produce offered at the market, which is counter to these findings. Increased research is necessary for a conclusive answer to the price differentiation of farmers' markets, supermarkets, and grocers. The price data collected for this study was compiled in the early fall, the end of the farmers' market season. It is possible that prices at farmers' markets are lower towards the end of the season.

It has been shown that location is a key aspect of a successful market and that it can be cheaper for customers to shop for produce at a farmers' market. It is reasonable to think that the information and data presented herein is reliable and true, so why aren't farmers' markets as ubiquitous as the local supermarket or grocery store? One reason may be the culture behind the creation of a farmers' market, and the subsequent dependency the markets have on this culture to function as a profitable business venture. As noted earlier, the Portland Farmers' Market was founded in 1992 by three local community activists who wanted to "bring the country into the city" (Portland Farmers' Market, 2004). The Portland Farmers' Market is a not-for-profit organization, meaning that any revenue generated is used to cover the operating costs of the market. Due to this nonprofit business model, the Portland Department of Parks and Recreation charges a small nonprofit rate to the Portland Farmers' Market for use of the Park Blocks on Wednesdays. Portland State University only charges customers for the use of their parking and bathroom facilities for the Saturday market clientele (Stefani-Ruff, 2005). The Library parking-lot location of the Beaverton Farmers' Market is provided free of charge by the City of Beaverton (Rapport, 2005). Because location expenses are kept low, the savings are transferred to the participating farms by the relatively inexpensive cost of vendor stalls.

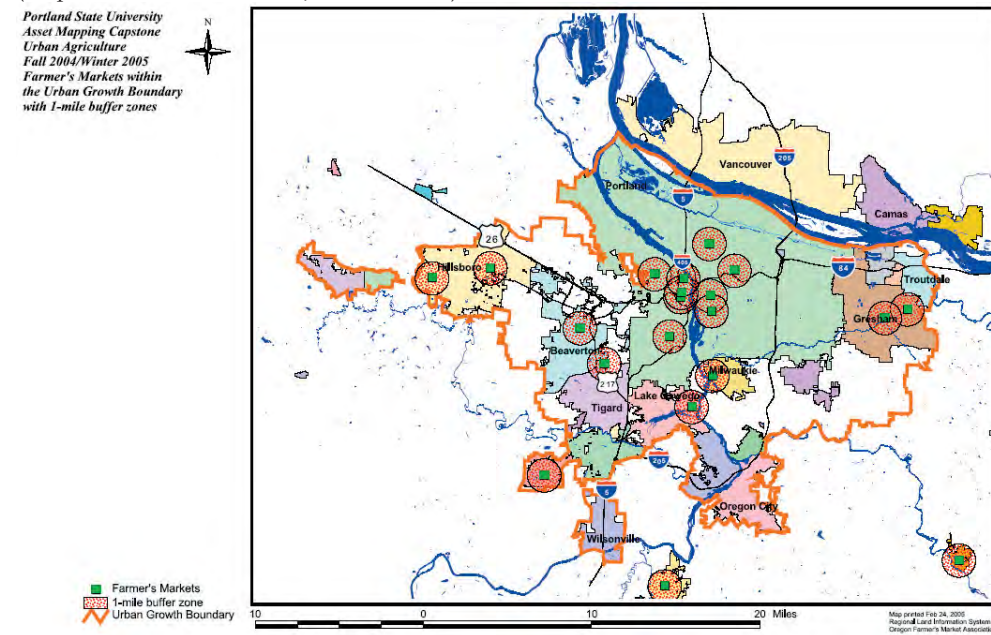
(Map 14-Grocery Stores w/1-mile buffer zones.)



At the Portland Farmers' Market, a 10'x10' stall costs \$31.50 per day, and a simple umbrella stand costs as little as \$20 per day (these prices assume advance and multiple week registration) (Portland Farmers' Market, 2004). Patt Opdyke stated that she believes some of the reasons the Peninsula People's Farmers' Market failed included poor location and local residents without disposable income (Anderson, 2005). Obviously, the success of a farmers' market is dependent on good location and low operating costs, which in this case indicates low physical site expenses. It seems safe to assume that if a farmers' market is subject to market-rate land leasing prices for prime locations, the market would not be a viable business venture. Farmers' markets need the assistance of local governments, non-profit organizations, and private land owners to ensure the practicality of running such a venture. Due to this, the number of farmers' markets will likely remain low and not pose much competition for supermarkets and local grocers.

Finally to assess the availability of farmers' markets to the general public. Since the research demonstrated that it is possible to purchase produce at cheaper prices from a farmers' market than from a supermarket, it would seem a wise economic and health-conscious choice for more people to shop at these markets rather than their local supermarkets. Location data was collected from Safeway, Albertsons, Trader Joe's, WinCo Foods and Whole Foods, all within the Portland Metro/Tri-County area. Once this location data was collected, a GIS point map with 1-mile radius buffer zones around each point, was created. These buffer zones are meant to represent the distance someone would be willing to travel to purchase groceries (see Map 14). When this map is compared to a map of all the farmers' markets within the same region (also with the same 1-mile buffer zones), the side-by-side comparison illustrates that farmers' markets are clearly underrepresented within the area and that most people do not live close enough to one to make it an economical or convenient place to shop (see Map 15).

(Map 15-Farmers' Markets w/1-mile buffer.)



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Appendix

Education, Environmental Issues, Action-

Education Map FEED Schools	From Page 2	17
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Community Gardens-

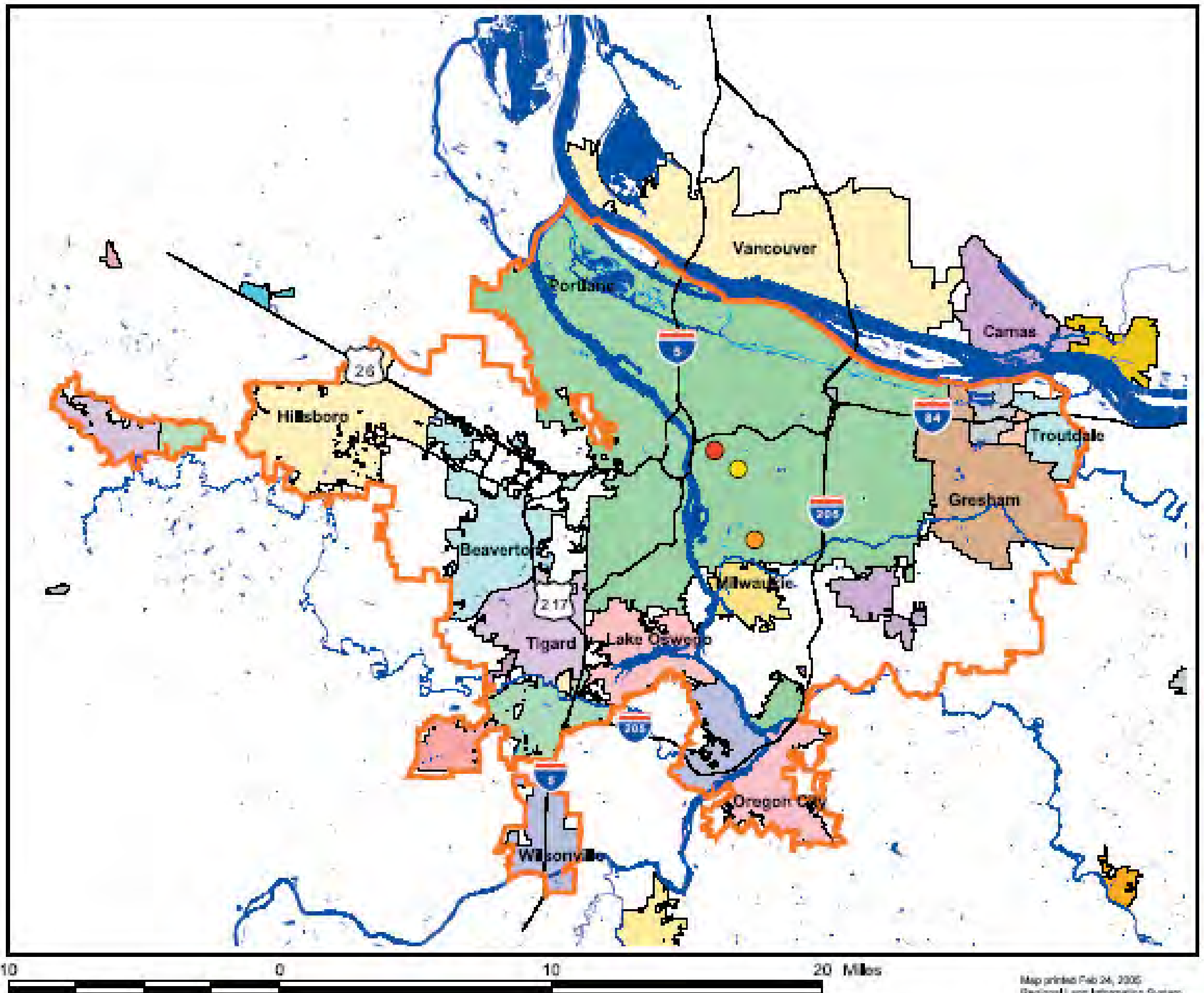
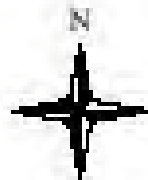
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- FEED Programs
- Buckman ES
 - Edwards ES
 - Lewis ES
 - ▬ Urban Growth Boundary

Results for Annual Survey of Gardeners

Number of surveys returned: 415

Totals for people who work in garden plots:

Number of children (0-13): 754
Number of youth (14-18): 204
Number of young adults (19-30): 324
Number of mid-adults (31-61): 998
Number of adult seniors (62+): 186

Total number of people: 2466

Top reasons for participating in a community garden:

- 1) Food Quality
- 2) Need gardening space
- 3) Relaxation
- 4) Gardening Experience
- 5) Environment
- 6) In neighborhood
- 7) Exercise
- 8) Food Savings

Average distance traveled to garden: 14.3 blocks

Most common form of transport to garden: Car

Totals for hours spent in garden each week:

Spring: 3259
Summer: 3890
Fall: 2454
Winter: 882

Total hours for entire year: 10,485

Other Relevant Information

Total number of gardeners: 854
Total number of garden managers: 32
Total number of plots: 981
Total number of raised beds: 76
Total number of people on wait list: 517

Number of gardens around the city:

Northeast: 5
Northwest: 1
North: 6
Southeast: 11
Southwest: 5

Gardens with longest wait list: Colonel Summers (SE), Sewallcrest (SE), Blair (SE)

Gardens with no wait list: Portsmouth (N), Brentwood (SE), Cully (NE)

Number of gardens owned by:

Portland Parks & Recreation: 15
Portland Public Schools: 4
Churches: 4
Public agencies: 4
Private individual: 1

Survey conducted by Leslie Pohl-Kosbau of Portland Parks and Recreation

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

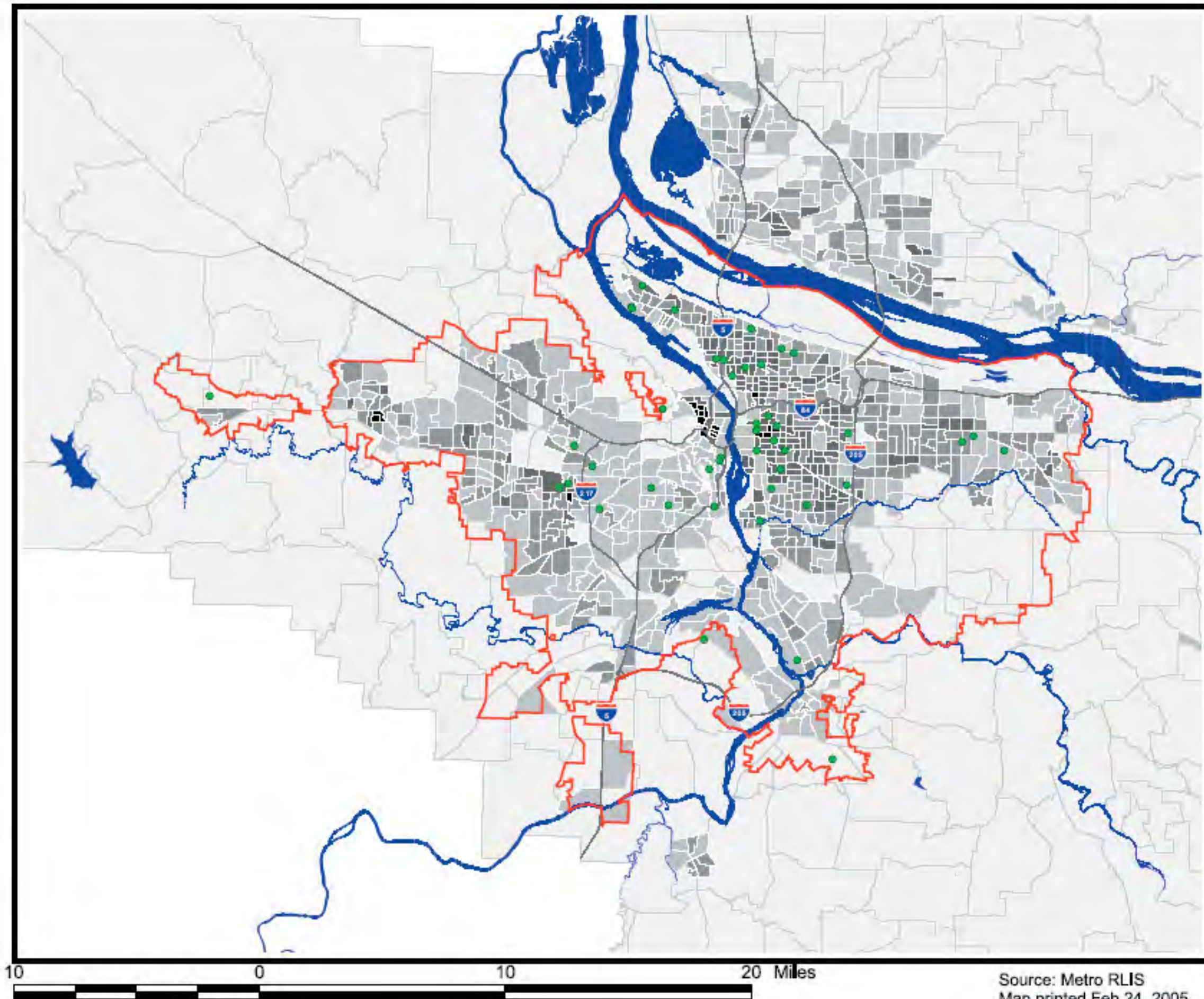
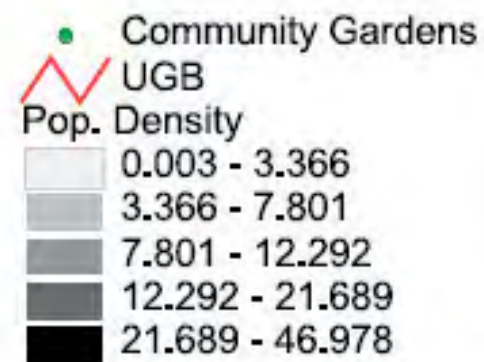
WHEREAS, The City can support the creation of additional community gardens and agricultural opportunities by allowing, where appropriate, City-owned lands to be used for those efforts.

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:

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.

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 will be examined for their potential to become community gardens or used for other agricultural uses.

Adopted by the Council,
Commissioner Dan Saltzman
Brendan C. Finn
November 24, 2004
GARY BLACKMER
Auditor of the City of Portland
By: Deputy
(Portland Online, 2005)
Possible Locations for Community Gardens



Source: Metro RLIS
Map printed Feb 24, 2005

Land size	accessible raised garden beds	#plots with community space
7,500 sq. ft. (75x100)	3	12
fencing/gates cyclone:	\$5,250	
vinyl cyclone:	\$7,000	
mow strip, concrete:	\$2,000	
raised beds, surface:	\$2,000	
soil prep/amendments:	\$2,500	
Water meter/backflow:	\$6,500	
Irrigation/ four outlets:	\$3,000	
Gravel/ paved pathway shed:	\$1,500	
picnic table:	\$500	
sign:	\$500	
bulletin Board:	\$500	
TOTAL ESTIMATE	\$32,750	

Land size	accessible raised garden beds	#plots with community space
15,000 sq. ft. (100 x 150)	2	24
fencing/gates cyclone:	\$7,500	
vinyl cyclone:	\$10,000	
mow strip, concrete:	\$2,500	
raised beds, surface:	\$2,000	
soil prep/amendments:	\$3,500	
Water meter/backflow:	\$6,500	
Irrigation/ four outlets:	\$4,800	
Gravel/ paved pathway shed:	\$3,000	
picnic table:	\$2,000	
sign:	\$500	
bulletin Board:	\$500	
TOTAL ESTIMATE	\$43,300	

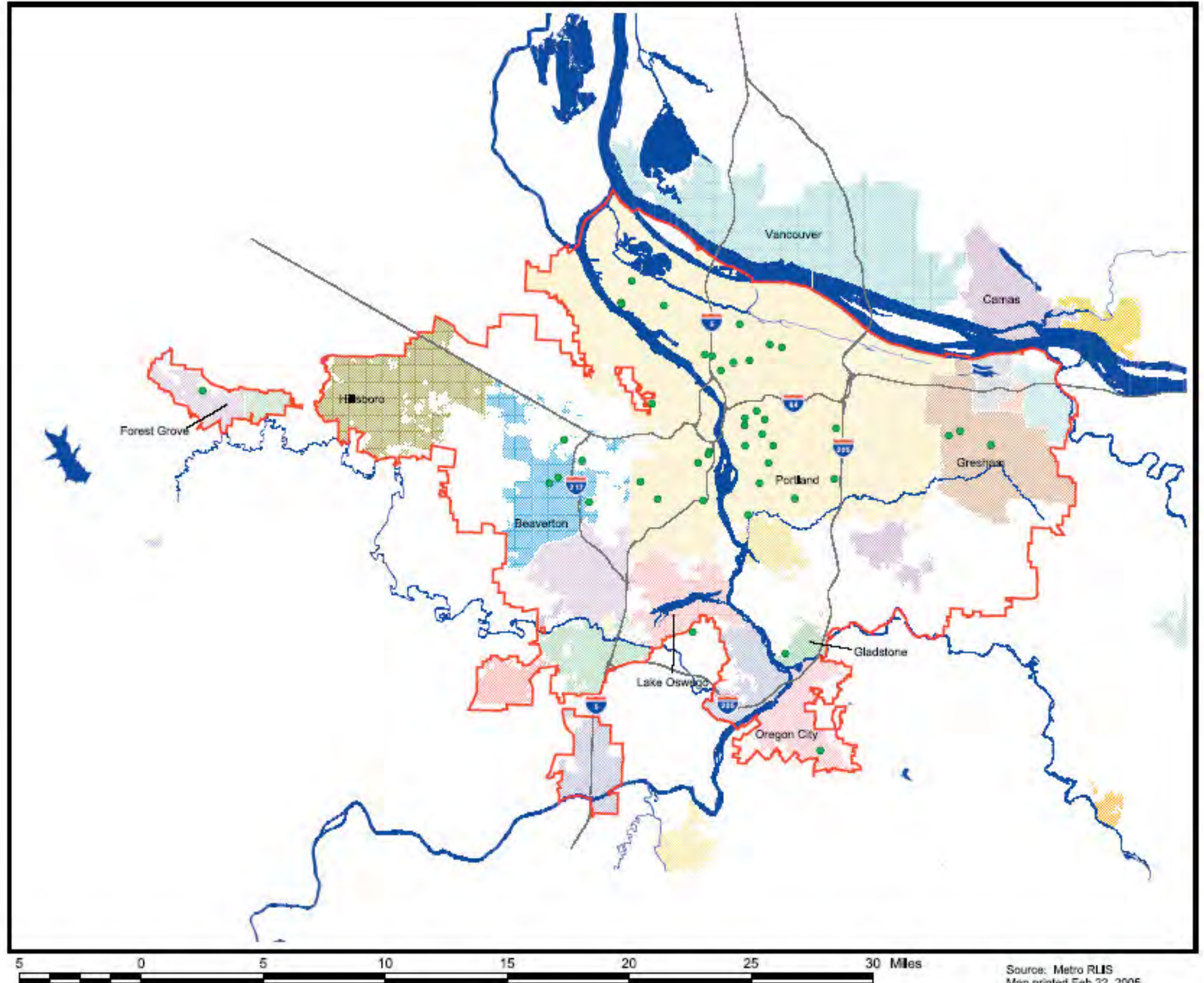
Land size	accessible raised garden beds	#plots with community space
22,500 sq. ft. (150 x 150)	4	44
fencing/gates cyclone:	\$9,000	
vinyl cyclone:	\$12,000	
mow strip, concrete:	\$3,000	
raised beds, surface:	\$2,800	
soil prep/amendments:	\$4,500	
Water meter/backflow:	\$6,500	
Irrigation/ four outlets:	\$5,500	
Gravel/ paved pathway shed:	\$3,400	
picnic table:	\$3,000	
signs:	\$500	
bulletin Board:	\$1,000	
TOTAL ESTIMATE	\$51,700	

Possible Cemetery Locations for Community Gardens

Cemetery Name	Physical Address	City, State Zip	Mailing Address	City, State Zip	Phone	Contact	ACRES	AREA ft.
Anthony Cemetery							1.161	60582.833
Beth Israel Cemetery	426 SW Taylors Ferry Rd.	Portland, OR	1972 N.W. Flanders St.	Portland, OR 97209	503-222-1089	Christine Gardner	1.212	62789.513
Beth Israel Cemetery	427 SW Taylors Ferry Rd.	Portland, OR	1972 N.W. Flanders St.	Portland, OR 97209	503-222-1070	Christine Gardner	1.265	55113.972
Crescent Grove Cemetery	9925 SW Greenburg Rd.	Tigard, OR 97223	9925 SW Greenburg Rd.	Tigard, OR 97223	503-839-5347	Nancy Carr	5.380	234354.920
Douglas Cemetery	Hensley Rd. & SE 257th	Troutdale, OR	2115 SE Morrison St.	Portland, OR 97214	503-988-3622	Janelle Geddes	3.336	145325.053
Emanuel Cemetery	Susabauer Road	Cornelius, OR	P.O. Box 505	Cornelius, OR 97113	503-357-3377	Gail Hering	0.884	38485.686
Fir Lawn Cemetery	1070 West Main Street	Hillsboro, OR 97123	1070 West Main Street	Hillsboro, OR 97123	503-648-1732	Clifford Nielsen	12.150	529251.017
Gethsemane Cemetery	11666 S.E. Stevens Road	Portland, OR 97266	11666 S.E. Stevens Road	Portland, OR 97266	503-659-1350	Tim Corbett	7.400	322348.310
Lone Fir Cemetery	2115 S.E. Morrison St.	Portland, OR 97214	2115 S.E. Morrison St.	Portland, OR 97214	503-988-3622	Janelle Geddes	6.702	291934.456
Mountain View Cemetery	500 Hilda St.	Oregon City, OR 97045	500 Hilda St.	Oregon City, OR 97045	503-657-8299	Larry Potter	2.199	95769.465
Oswego Cemetery	16525 Stafford Road	Lake Oswego, OR	51764 Grey Ln	Adams, OR 97810	503-636-8355	Ethel Schaubel	0.796	34681.393
Rose City Cemetery	5625 N.E. Fremont St.	Portland, OR 97213	5625 N.E. Fremont St.	Portland, OR 97213	503-281-3821	Jay Ollerenshaw	8.724	360007.661
St. John the Apostle Ceme	451 Warner St.	Oregon City, OR 97045	P.O. Box 340	Oregon City, OR 97045	503-655-7148	Gary Avery	3.679	160259.015
Sunset Hills Memorial Par	6801 SW Sunset Hwy	Portland, OR 97225	6801 SW Sunset Hwy	Portland, OR 97225	503-292-6654	Shawn Elliot	6.355	276822.405
Valley Memorial Park Cem	3609 S.W. Tualatin-Valley Hwy	Hillsboro, OR	1070 West Main Street	Hillsboro, OR 97123	503-648-5444	Clifford Nielsen	27.075	1179399.551

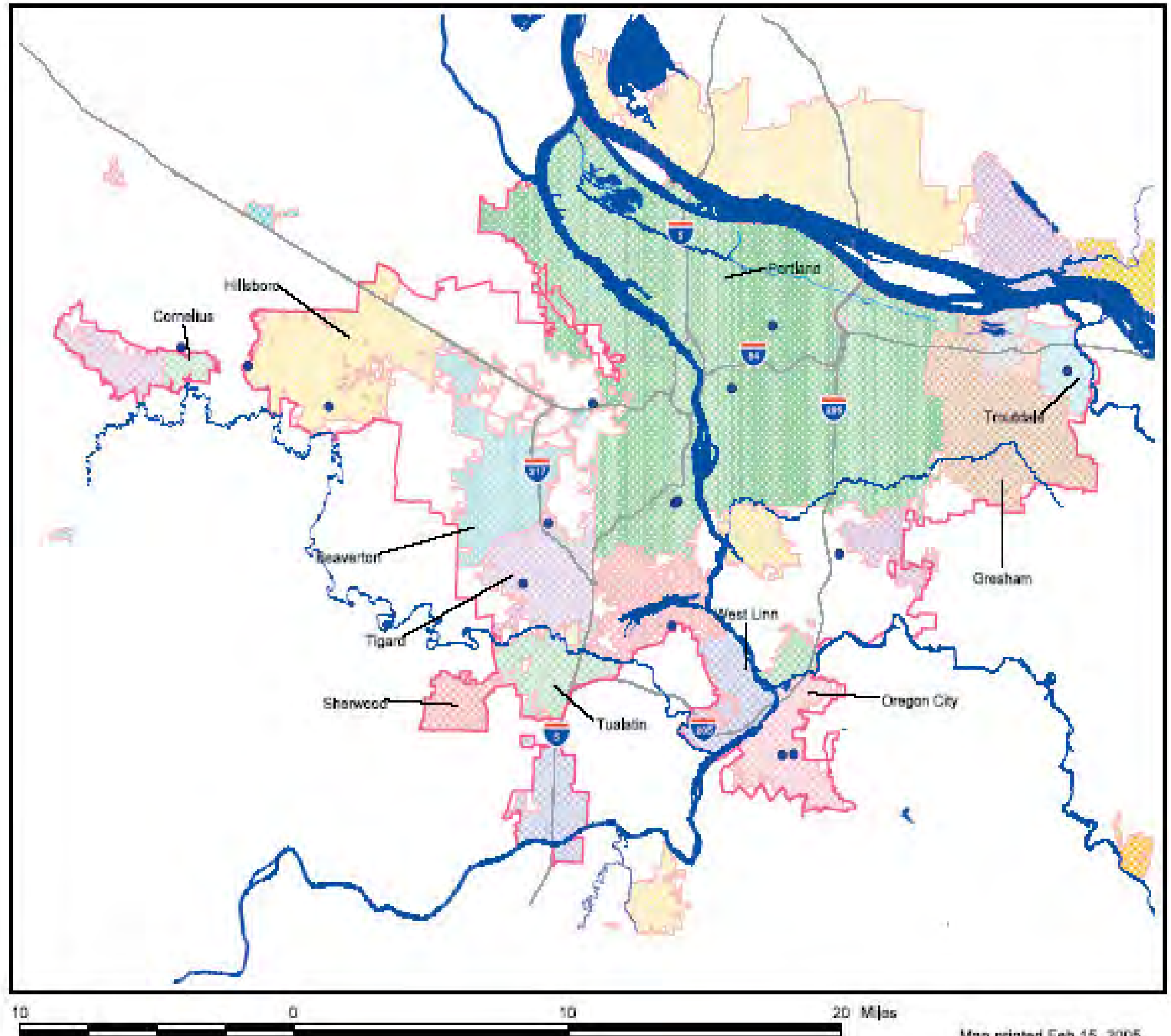
Possible Church Locations for Community Gardens

OWNER	Site Address	City State Zip	Acres	Area ft
Aloha Christian Life Cent	5585 SW 209th Avenue	Aloha, OR	4.249	185108.024
Assemblies of God	P.O. Box 133	Hillsboro, OR	1.620	70560.668
Bethany Presbyterian Chur	15505 NW Springville Rd	Portland, OR	5.382	234461.472
Bethlehem Baptist Church	17979 SW Stafford Rd	Lake Oswego, OR	1.519	66183.791
Bethlehem Lutheran Church	18865 SW Johnson	Aloha, OR	1.742	75896.015
Calvin Christian Reformed	16001 SE Main St.	Portland, OR	0.248	10759.068
Church Latter Day Saints	50 E North South Temple	Salt Lake City, UT	2.201	95866.390
Church of Jesus Christ of	50 East N Temple	Salt Lake City, UT	4.348	189400.982
Clackamas PK Friends Chur	8120 SE Thiessen Rd	Milwaukie, OR	0.685	29826.463
Corp of Presiding Bishop	50 E North Temple		0.987	43002.816
Corp of Presiding Bishop	50 E North Temple	Salt Lake City, UT	0.649	28270.066
Creator Lutheran Church	13250 SE Sunny ide Rd.	Clackamas, OR	1.685	73410.737
Damascus Assembly of God	19070 SE Sunnyside Rd	Boring, OR	2.318	100955.153
Eastern Orthdx Ch Annunc	13515 SE Rusk Rd	Milwaukie, OR	0.832	36246.525
Emmanuel Community Church	13361 SE 172nd Ave	Clackamas, OR	2.504	109096.147
First Baptist Church	11075 SW Gaarde	Tigard, OR	1.344	58552.877
First Free Methodist Chur	P.O. Box 3127	Gresham, OR	3.196	139203.940
First Presbyterian Church	1321 Linn Ave	Oregon City, OR	4.352	189559.190
Greater Portland Baptist	17800 SE Main St	Portland, OR	1.149	50047.141
Gresham United Methodist	620 NE 8th St.	Gresham, OR	1.124	48957.711
Harvest Community Church	21235 NW Quatama Rd	Beaverton, OR	0.398	17344.794
Hillcrest Miss Baptist Ch	P. . BOX 2071	Oregon City, OR	1.126	49037.711
Hillsboro Church of the N	1310 NE 21st Ave.	Hillsboro, OR	1.803	78552.018
Immanuel Bible ellowship	20805 SW Farmington Rd	Beaverton, OR	0.467	20335.766
Intl Ch Foursquare Gospel	1100 Glendale Blvd	Los Angeles, CA	0.443	19309.810
Japanese International Ba	8500 SW Spruce St.	Tigard, OR	0.785	34216.298
Lake Baptist Church	4565 Carman Dr	Lake Oswego, OR	1.463	63730.321
Light of Life Lutheran Ch	7390 SW Grabhorn Rd	Aloha, OR	1.936	84339.924
Living Hope Fellowship	P.O. Box 7400	Aloha, OR	1.203	52418.696
Methodist Ch of Sherwood	1035 E. Willamette	Sherwood, OR	0.593	25842.738
Methodist Church of Tuala	P.O. Box 6	Tualatin, OR	1.450	63167.183
Mt Scott Church of God	10603 SE Henderson	Portland, OR	1.572	68493.526
Mt. Hood Christian Center	2500 SE Palmblad Rd	Gresham, OR	0.995	43342.621
North Willamette Christia	444 N. Holly St	Canby, OR	1.572	68466.426
Our Redeemer Lutheran Chu	12256 SW 135th Ave	Tigard, OR	2.664	116025.067
Portland Korean UTD Metho	18788 SW Pilkington Rd	Lake Oswego, OR	1.429	62258.731
Pre bytery of the Cascade	12250 SW Denny Rd.	Beaverton, OR	0.757	
Presbytery of Portland of	18630 SE Division St	Gresham, OR	1.689	72897.281
Roman Catholic Archbishop	2636 E Burnside	Portland, OR	1.389	60518.462
Roman Catholic Archbishop	2636 E Burnside	Portland, OR	0.924	40262.503
Spring Mtn Bible Church I	12152 SE Mather Rd.	Clackamas, OR	0.672	29278.294
Spring Mtn Bible Church I	12152 SE Mather Rd.	Clackamas, OR	0.572	24907.179
Tigard Assembly of God	11265 SW Gaarde St.	Tigard, OR	0.485	21140.136
Trinity Church of the Eva	10900 SW 121st Ave	Tigard, OR	2.318	100972.315
Trinity Evangelical Luthe	5520 NE Killingsworth S	Portland, OR	0.807	35133.665
Tualatin Valley Community	511 SW 211th	Aloha, OR	1.193	51966.447
Valley Christian Church	11185 SW Wilsonville Rd	Wilsonville, OR	1.837	80040.997
Village Baptist Church	330 SW Murray Rd	Beaverton, OR	1.170	50946.405
Western OR Conf Ass 7-day	13455 SE 97th Ave	Clackamas, OR	0.478	20838.645
Western OR Conf Assn 7-Da	13455 SE 97th Ave	Clackamas, OR	1.851	80643.228
Western Oregon Conference	13400 SE 97th Ave	Clackamas, OR	0.732	31873.664
Wood Village Baptist Chur	23601 W Arata Rd	Troutdale, OR	1.136	49466.907



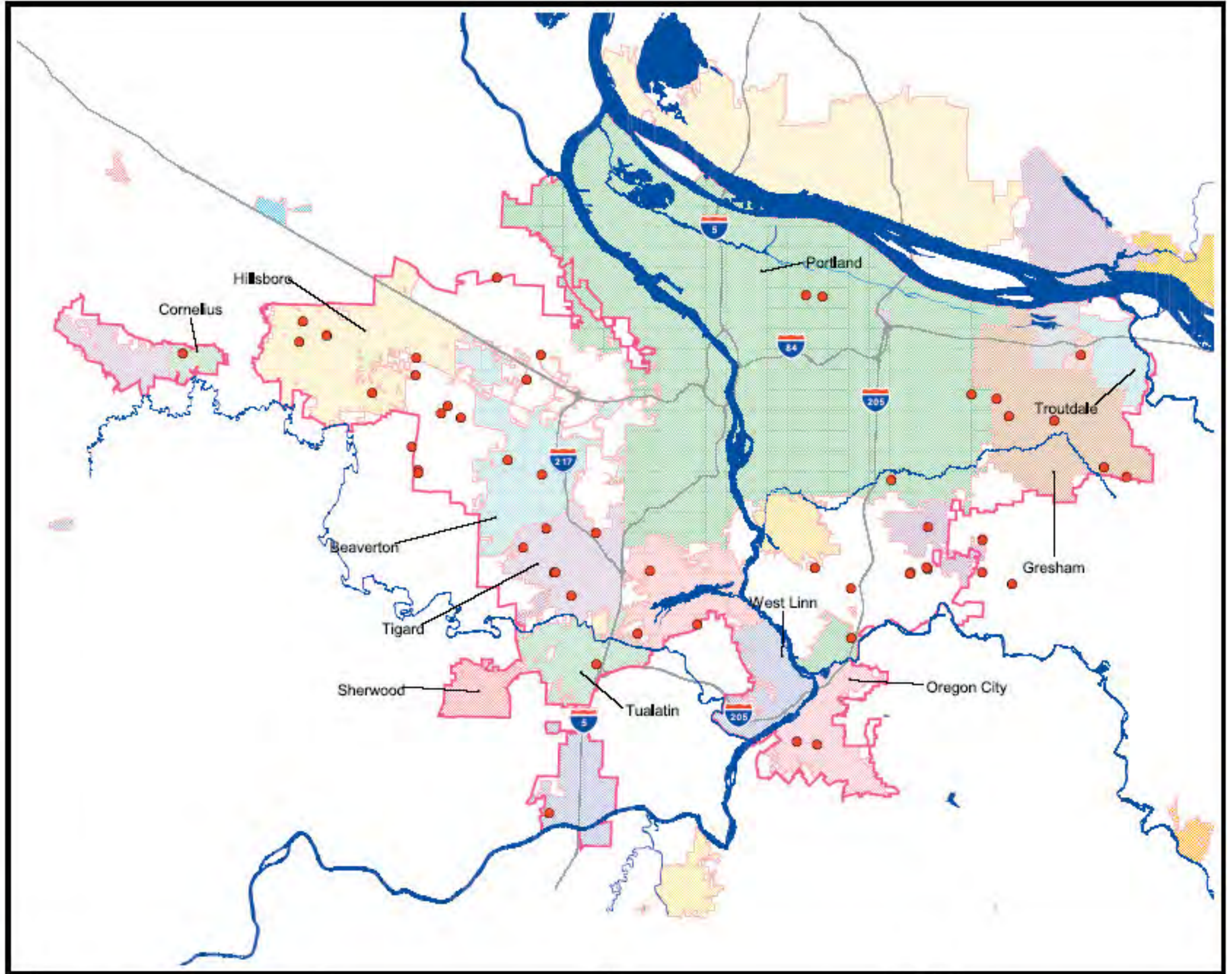


-  Cemeteries
-  Rivers
-  UGB
-  Freeways





-  Churches
-  Rivers
-  UGB
-  Freeways



10 0 10 20 Miles

Studied Grocery Stores - Price Comparisons

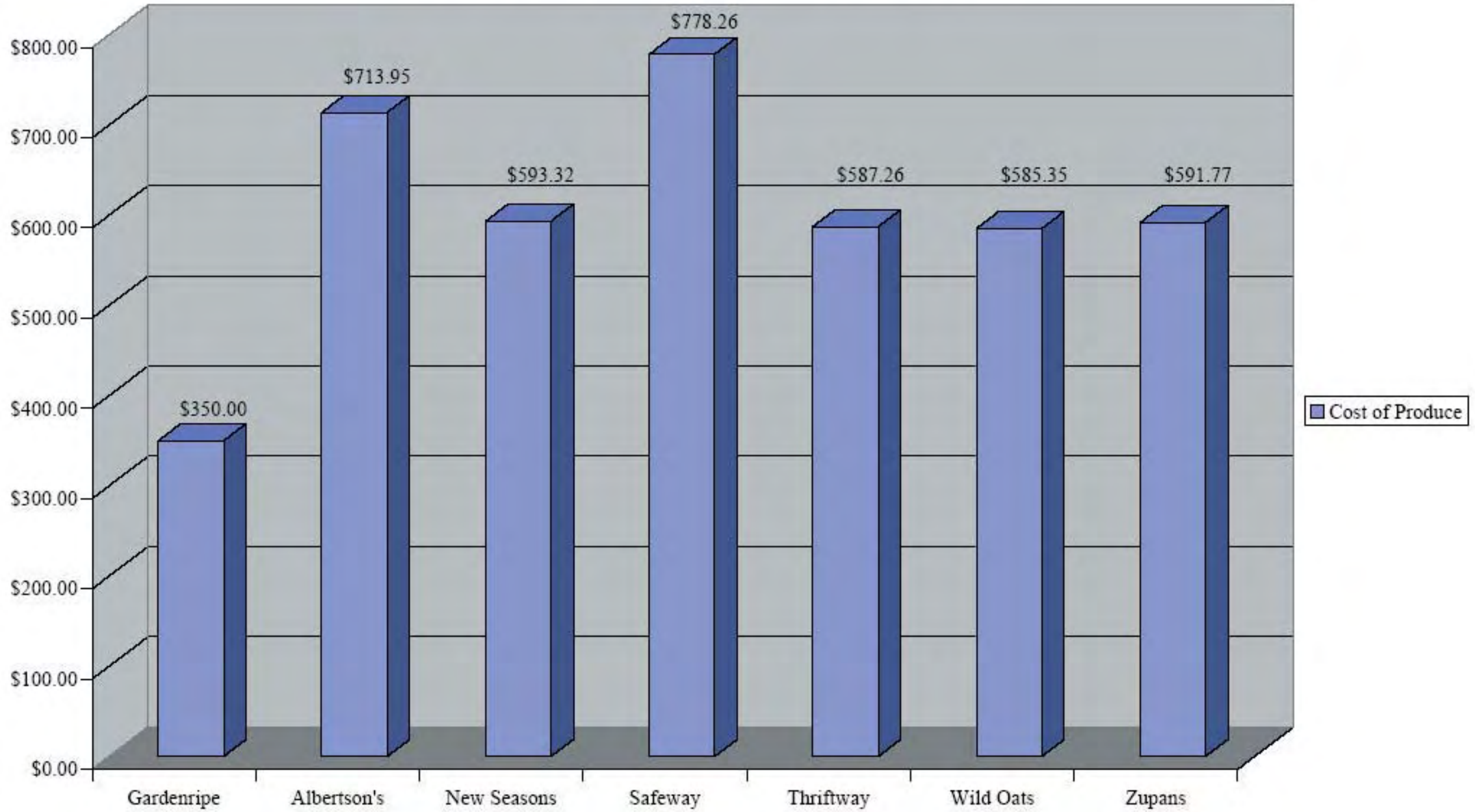
	Total (Verified) Costs*	Comparison Matches** (%)	Useful Matches*** (%)	Projected Costs****
Gardenripe	\$350.00	100%	100%	\$350.00
Albertson's	\$713.95	77%	72%	\$990.32
New Seasons	\$593.32	84%	51%	\$1,159.67
Safeway	\$778.26	74%	63%	\$1,239.45
Thriftway	\$587.26	77%	53%	\$1,097.92
Wild Oats	\$585.35	63%	42%	\$1,398.33
Zupans	\$591.77	72%	53%	\$1,106.36

* Based only on useful matches.
 ** The grocery store carried the product Gardenripe included.
 *** These matches had compatible measurement units for a given item (e.g. a cucumber by weight and cucumber by quantity was **not** a useful match).
 **** Calculates the total cost using the useful match percentage.

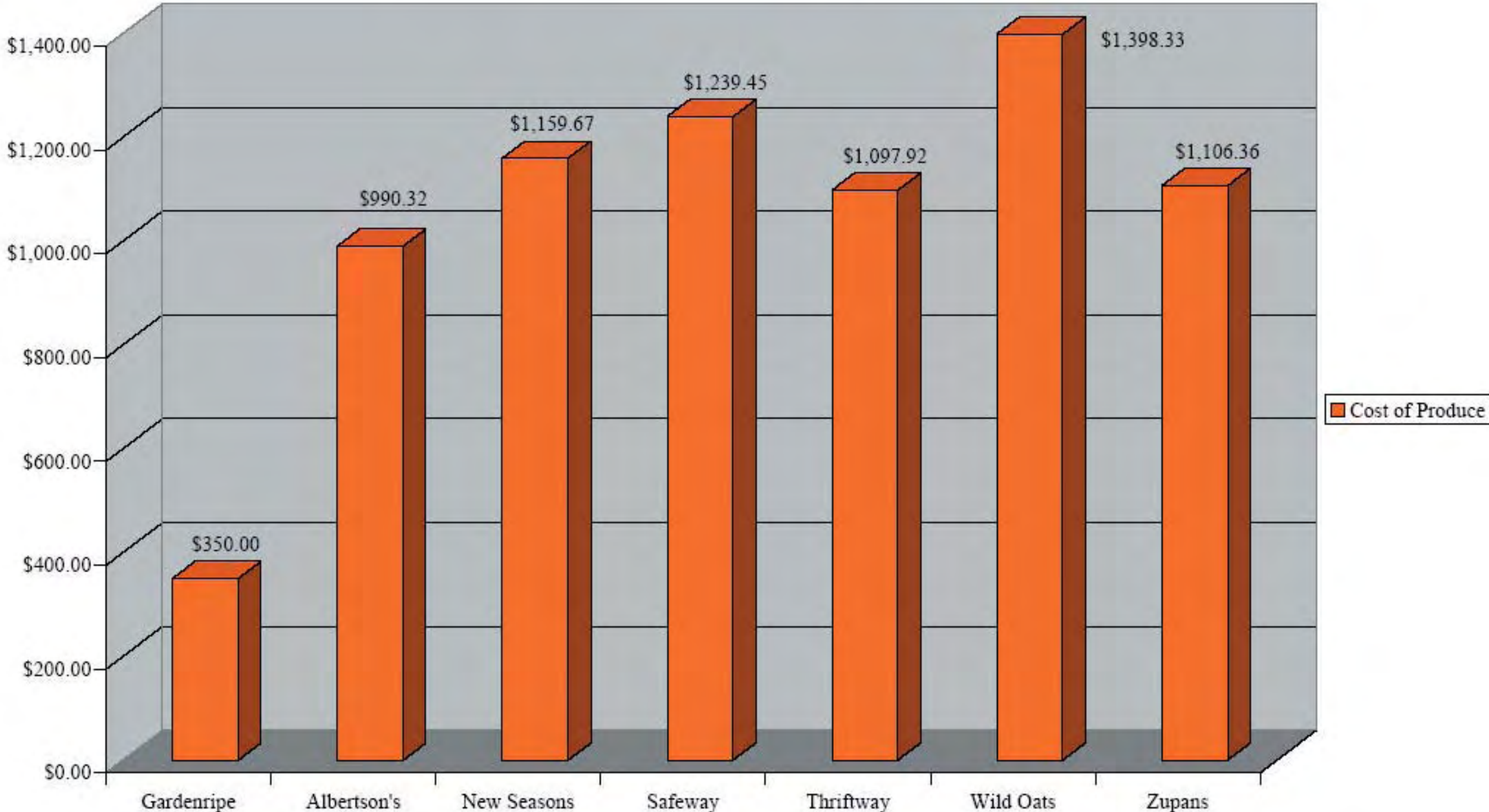
Studied Grocery Stores - Produce Weight to Price Conversions

Item	Quantity	Average Weight	Units	Data Source	Average group weight
Canteloupe	1	2.66	lbs	Safeway.com	2.66
Cabbage	1	2	lbs	Safeway.com	2.00
Cauliflower	1	1.66	lbs	Safeway.com	1.66
Garlic (Elephant)	1	0.1875	lbs	Safeway.com	0.19
Honeydew	1	4.16	lbs	Safeway.com	4.16
Onions (White/Yellow Keeping)	1	0.66	lbs	Safeway.com	0.66
Zucchini	1	0.34	lbs	Safeway.com	0.34
Acorn Squash	1	1.9	lbs	Safeway.com	
Butternut Squash	1	2.9	lbs	Safeway.com	2.77
Spaghetti Squash	1	3.5	lbs	Safeway.com	
Watermelon	1	16	lbs	Safeway.com	16.00

Studied Grocery Stores - Verified Costs of Produce



Studied Grocery Stores - Projected Costs of Produce

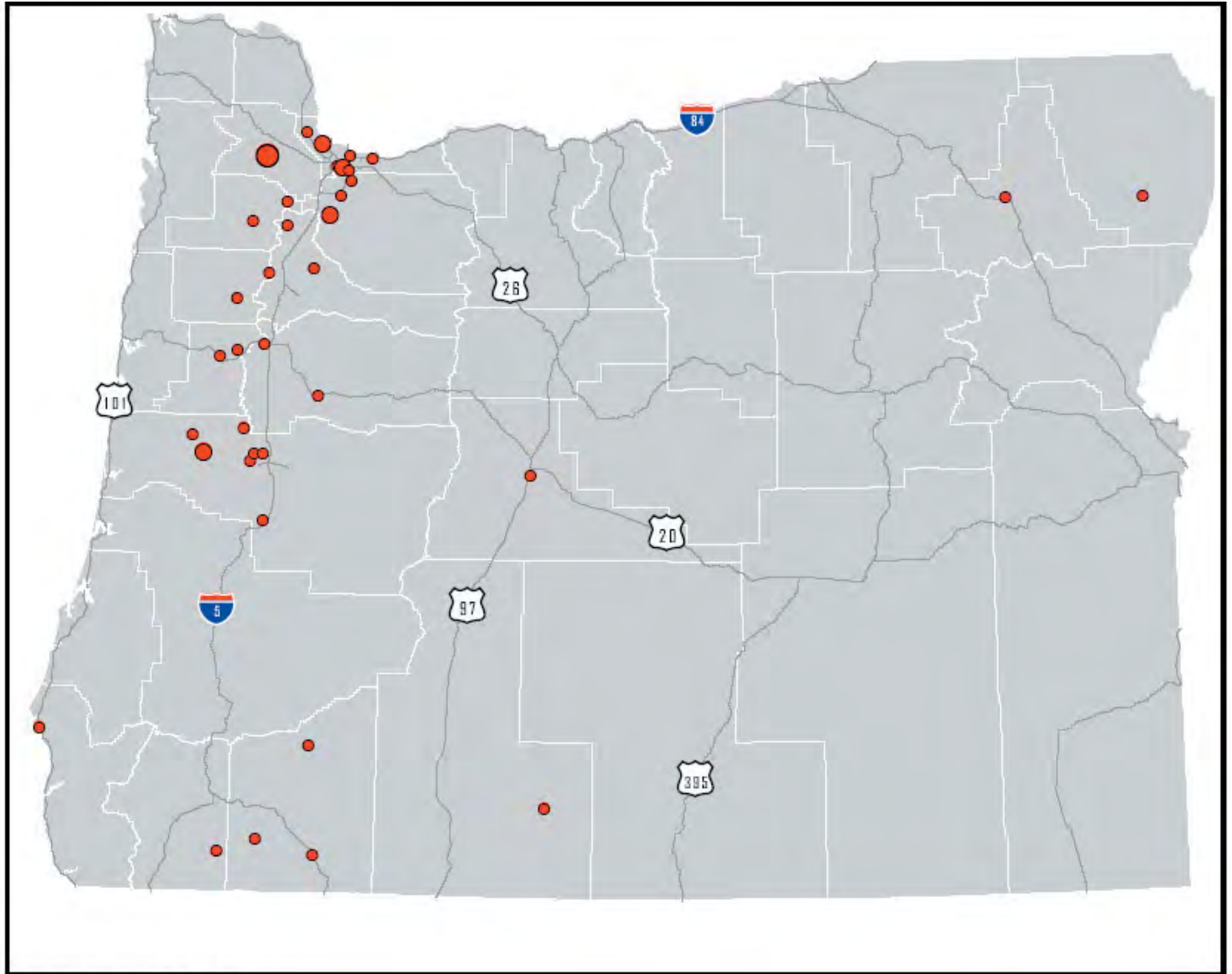




CSA Farms

- 1
- 2
- 3

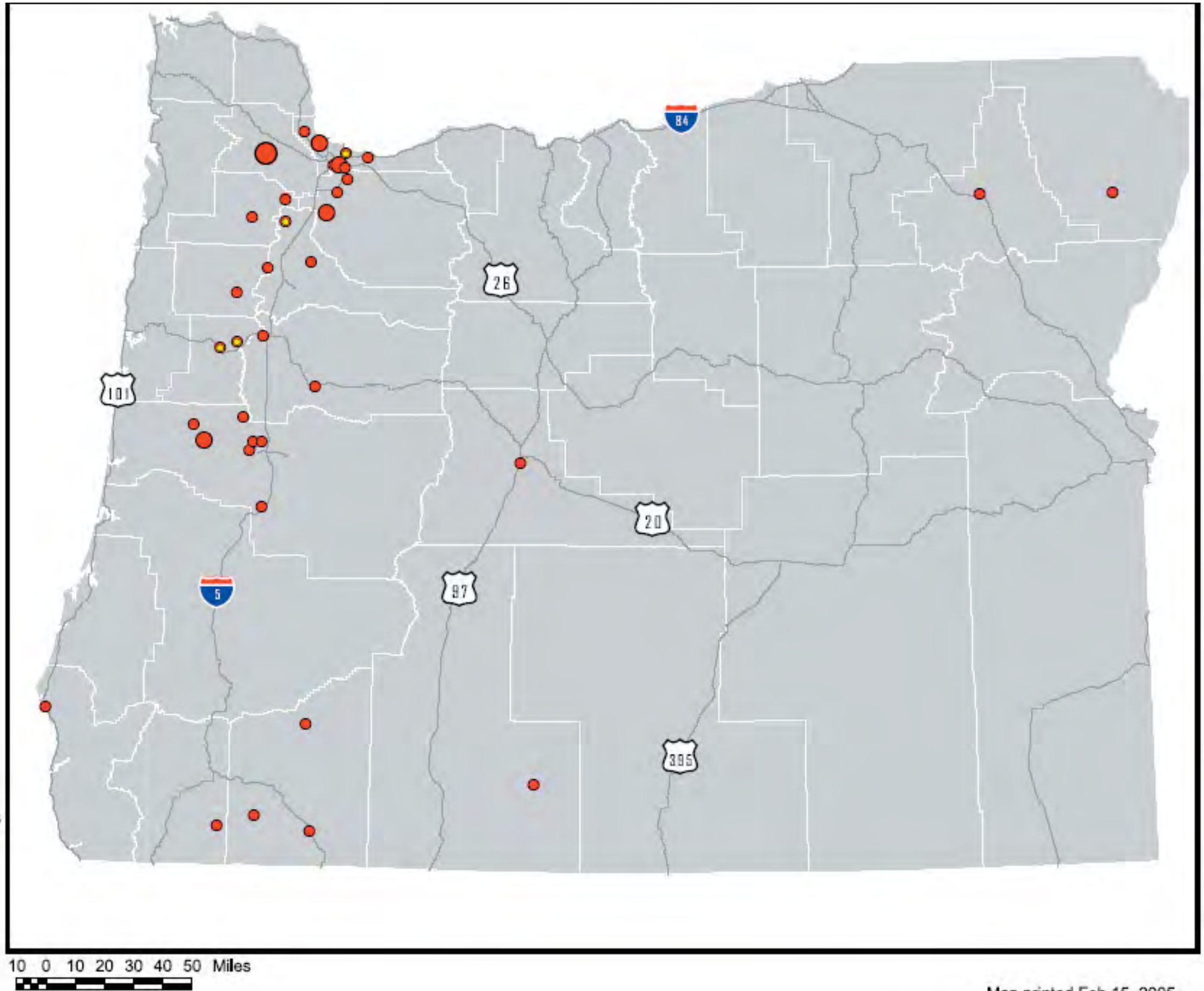
- Major Highways
- Counties



10 0 10 20 30 40 50 Miles



- Farmer's Market CSA's
- CSA Farms
- 1
- 2
- 3
- Major Highways
- Counties



Studied Grocery Stores - Produce Prices Data Set (Page 1 of 2)

Produce	Gardenripe (CSA)				Albertsons			New Seasons			Safeway		
	Deliveries	Quantity	Units	Total Quantity	Quantity	Units	Total Price	Quantity	Units	Total Price	Quantity	Units	Total Price
Basil	8	0.25 lbs		2 lbs	19.96 lbs		\$ 39.92	47.84 lbs		\$ 95.68	23.92 lbs		\$ 47.84
Beans (String)	8	2 lbs		16 lbs	1.99 lbs		\$ 31.84	2.49 lbs		\$ 39.84	3.49 lbs		\$ 55.84
Beet Greens	3	1 lbs		3 lbs				0.99 lbs		\$ 2.97	1.99 each		
Beets	5	2.5 lbs		12.5 lbs				1.99 lbs		\$ 24.88			
Berries (Boysen/Marion)	3	25 lbs		75 lbs									
Broccoli	3	1.5 lbs		4.5 lbs	1.99 lbs		\$ 8.96	1.79 lbs		\$ 8.06	1.99 lbs		\$ 8.96
Cantaloupe	4	2 melons		8 melons	0.99 lbs		\$ 21.07	0.89 lbs		\$ 18.94	2.37 melons		\$ 18.96
Carrots	4	2 lbs		8 lbs	0.79 lbs		\$ 6.32	1.49 lbs		\$ 11.92	1.29 lbs		\$ 10.32
Chives (Garlic)	3	1 small bag		3 small bag	1.99 small bag		\$ 5.97	1.99 lbs			1.99 small bag		\$ 5.97
Cilantro	1	1 small bag		1 small bag	0.50 small bag		\$ 0.50	1.29 lbs			0.59 small bag		\$ 0.59
Corn	6	12 ears		72 ears	0.69 ears		\$ 49.68	0.59 lbs			1.24 ears		\$ 89.28
Cucumbers (Slicing)	10	5 each		50 each	0.69 each		\$ 34.50	1.49 lbs			0.99 each		\$ 49.50
Cucumbers (Lemon)	8	3 each		24 each				1.99 lbs					
Cabbage	4	1 small head		4 small head	0.98 small head		\$ 3.92	0.99 lbs			1.38 small head		\$ 5.52
Cauliflower	3	1 head		3 head	2.49 head		\$ 7.47	1.49 lbs		\$ 7.42	2.97 head		\$ 8.91
Broccoli	5	2 crowns		10 crowns	1.99 crowns		\$ 19.90	1.99 lbs			1.99 crowns		\$ 19.90
Eggplant (Oriental)	7	5 Pieces		35 Pieces	1.99 Pieces		\$ 69.65	1.79 lbs			1.86 Pieces		\$ 65.10
Garlic (Elephant)	1	2 heads		2 heads	3.99 heads		\$ 7.98	4.99 lbs		\$ 1.87	2.99 heads		\$ 5.98
Ground Cherries	6	0.75 lbs		4.5 lbs									
Honeydew	1	1 melon		1 melon	0.99 lbs		\$ 4.12	1.79 lbs		\$ 7.45	4.12 melon		\$ 4.12
Joi Choi	2	2 large plants		4 large plants				1.99 lbs					
Kale	3	1 lbs		3 lbs				1.79 lbs		\$ 5.37	1.29 each		
Kohlrabi	2	2 each		4 each									
Leaf Lettuce (Blend of Varieties)	14	1 lbs		14 lbs	0.99 each			1.49 lbs		\$ 20.86	1.59 each		
Onions (Green)	10	1 Large Bunch		10 Large Bunch	0.69 Large Bunch		\$ 6.90	0.99 lbs			0.50 large bunch		\$ 5.00
Onions (Walla Walla)	5	2 each		10 each	1.29 lbs			0.99 lbs			0.82 each		\$ 8.20
Onions (White/Yellow Keeping)	1	5 lbs		5 lbs	0.94 lbs		\$ 4.70	0.69 lbs		\$ 3.45	0.50 lbs		
Pear (Sugar Snap)	6	2 lbs		12 lbs	3.99 lbs		\$ 47.88	4.99 lbs		\$ 59.88	4.99 lbs		\$ 59.88
Peppers (Ancho)	7	2 peppers		14 peppers	1.00 peppers		\$ 14.00	1.99 lbs			0.50 peppers		\$ 7.00
Peppers (Ancho)	6	2 peppers		12 peppers									
Peppers (Bell)	6	2 peppers		12 peppers	1.29 peppers		\$ 15.48	2.99 lbs			2.00 peppers		\$ 24.00
Peppers (Jalapeno)	3	6 peppers		18 peppers	0.75 peppers		\$ 13.50	1.99 lbs			0.50 peppers		\$ 9.00
Potatoes (Red)	1	5 lbs		5 lbs	0.89 lbs		\$ 4.45	0.69 lbs		\$ 3.45	0.29 each		
Pumpkins	1	2 each		2 each	1.00 each		\$ 2.00						
Shallots (French)	1	3 lbs		3 lbs									
Squash (Patty Pan)													
Squash (Yellow Crookneck)	9	5 Variety		45 Variety									
Squash (Zucchini)					2.99 lbs		\$ 45.75	1.49 lbs		\$ 22.80	0.51 each		\$ 7.80
Squash (Acorn)					0.57 each		\$ 1.52	0.99 lbs		\$ 2.64	1.50 each		\$ 4.80
Squash (Butternut)					0.69 lbs		\$ 5.09	1.49 lbs		\$ 3.97	2.87 each		\$ 11.48
Squash (Hubbard)	2	4 Variety		8 Variety									
Squash (Spaghetti)					0.99 lbs		\$ 7.30	1.79 lbs		\$ 4.77			\$ 9.25
Squash (Sweet Dumpling)													
Tomatillos	6	1 lbs		6 lbs	1.49 lbs		\$ 8.94						
Tomatoes	9	5 lbs		45 lbs	2.39 lbs		\$ 107.55	2.49 lbs		\$ 112.05	4.00 lbs		\$ 180.00
Tomatoes (Pear and Cherry)	7	2 lbs		14 lbs	2.65 lbs		\$ 37.10	3.99 lbs		\$ 55.86	3.99 lbs		\$ 55.86
Watermelon	5	1 melon		5 melon	0.39 lbs		\$ 80.00	0.99 lbs		\$ 79.20			
Total Price				350.00			713.95			593.32			778.26

Bold items: Estimates based on average weight conversions

Blue items: grouped together in the Gardenripe share. If multiple prices were found, the prices were averaged.

Red items: grouped together in the Gardenripe share. If multiple prices were found, the prices were averaged.

Total Useful Matches: 31
Comparison Matches: 33

Total Useful Matches: 22
Comparison Matches: 36

Total Useful Matches: 27
Comparison Matches: 32

Studied Grocery Stores - Produce Prices Data Set (Page 2 of 2)

Produce	Gardenripe (CSA)			Thriftway			Wild Oats			Zupans			
	Deliveries	Quantity	Units	Total Quantity	Quantity	Units	Total Price	Quantity	Units	Total Price	Quantity	Units	Total Price
Basil	8	0.25 lbs		2 lbs	2.49	each		2.99	each			lbs	
Beans (String)	8	2 lbs		16 lbs	2.99	lbs	\$ 47.84	3.99	lbs	\$ 63.84		lbs	
Beet Greens	3	1 lbs		3 lbs	2.29	each		1.99	each		2.49	bunch	
Beets	5	2.5 lbs		12.5 lbs	2.29	each		1.99	each		2.99	bunch	
Berries (Boysen/Marion)	3	25 lbs		75 lbs		lbs			lbs			lbs	
Broccoli	3	1.5 lbs		4.5 lbs	2.39	lbs	\$ 10.76	1.39	lbs	\$ 7.16	1.99	lbs	\$ 8.96
Cantaloupe	4	2 melons		8 melons	0.99	lbs	\$ 21.07	0.89	lbs	\$ 18.94	0.89	lbs	\$ 18.94
Carrots	4	2 lbs		8 lbs	0.59	lbs	\$ 4.72	1.99	lbs	\$ 15.92	1.49	lbs	\$ 11.92
Chives (Garlic)	3	1 small bag		3 small bag	2.49	small bag	\$ 7.47		small bag			small bag	
Cilantro	1	1 small bag		1 small bag	0.59	small bag	\$ 0.59	1.59	each		0.99	small bag	\$ 0.99
Corn	6	12 ears		72 ears		ears			ears		0.79	ears	\$ 56.88
Cucumbers (Slicing)	10	5 each		50 each	0.59	each	\$ 29.50	0.89	each	\$ 44.50	0.99	each	\$ 49.50
Cucumbers (Lemon)	8	3 each		24 each		each			each			each	
Cabbage	4	1 small head		4 small head	0.99	lbs	\$ 7.92	1.49	lbs	\$ 11.92	0.59	lbs	\$ 4.72
Cauliflower	3	1 head		3 head	1.99	lbs	\$ 12.40	2.49	lbs	\$ 12.40	1.99	lbs	\$ 9.91
Broccoli	5	2 crowns		10 crowns	2.39	lbs	\$ 23.90	2.49	crowns	\$ 24.90	1.99	lbs	
Eggplant (Oriental)	7	5 Pieces		35 Pieces		Pieces			Pieces			Pieces	
Garlic (Elephant)	1	2 heads		2 heads	3.99	lbs	\$ 1.50	4.99	lbs	\$ 1.87	5.99	lbs	\$ 2.25
Ground Cherries	6	0.75 lbs		4.5 lbs		lbs			lbs			lbs	
Honeydew	1	1 melon		1 melon	0.89	lbs	\$ 3.70	0.99	lbs	\$ 4.12	0.99	lbs	\$ 4.12
Joi Choi	2	2 large plants		4 large plants		large plants			large plant			large plants	
Kale	3	1 lbs		3 lbs	2.99	lbs	\$ 8.97	1.99	each		2.99	lbs	\$ 8.97
Kohlrabi	2	2 each		4 each		each			each			each	
Leaf Lettuce (Blend of Varieties)	14	1 lbs		14 lbs	1.99	lbs	\$ 27.86	5.16	lbs		1.49	bunch	
Onions (Green)	10	1 Large Bunch		10 Large Bunch	0.69	each		0.99	each		1.29	Large Bunch	\$ 12.90
Onions (Walla Walla)	5	2 each		10 each	0.69	lbs			each			each	
Onions (White/Yellow Keeping)	1	5 lbs		5 lbs	0.69	lbs	\$ 3.45	0.49	lbs	\$ 2.45	1.29	lbs	\$ 6.45
Peas (Sugar Snap)	6	2 lbs		12 lbs	4.19	lbs	\$ 50.28	4.99	lbs	\$ 59.88	5.99	lbs	\$ 71.88
Peppers (Anasheims)	7	2 peppers		14 peppers	2.99	lbs		2.99	peppers	\$ 41.86	2.99	lbs	
Peppers (Ancho)	6	2 peppers		12 peppers		peppers			peppers		2.99	lbs	
Peppers (Bell)	6	2 peppers		12 peppers	3.99	lbs		2.99	lbs		5.99	lbs	
Peppers (Jalapeno)	3	6 peppers		18 peppers	1.29	lbs		1.99	peppers	\$ 35.82	2.99	lbs	
Potatoes (Red)	1	5 lbs		5 lbs	0.50	lbs	\$ 2.50	0.99	lbs	\$ 4.95	0.59	lbs	\$ 2.95
Pumpkins	1	2 each		2 each	0.16	lbs		0.59	lbs			each	
Shallots (French)	1	3 lbs		3 lbs	3.79	lbs	\$ 11.37		lbs		2.99	lbs	\$ 8.97
Squash (Patty Pan)													
Squash (Yellow Crookneck)	9	5 Variety		45 Variety	1.49	lbs	\$ 45.75						
Squash (Zucchini)											0.99	lbs	\$ 15.15
Squash (Acorn)													
Squash (Butternut)								0.99	lb	\$ 21.91	1.99	lbs	\$ 14.68
Squash (Hubbard)	2	4 Variety		8 Variety	0.69	lbs	\$ 15.27				0.99	lbs	\$ 5.48
Squash (Spaghetti)											0.99	lbs	\$ 5.48
Squash (Sweet Dumpling)													
Tomatillos	6	1 lbs		6 lbs	1.29	lbs	\$ 7.74		lbs		1.99	lbs	\$ 11.94
Tomatoes	9	5 lbs		45 lbs	2.69	lbs	\$ 121.05	3.49	lbs	\$ 157.05	3.99	lbs	\$ 179.55
Tomatoes (Pear and Cherry)	7	2 lbs		14 lbs	4.49	lbs	\$ 62.86	3.99	lbs	\$ 55.86		lbs	
Watermelon	5	1 melon		5 melon	0.89	lbs	\$ 71.20		melon		0.99	lbs	\$ 79.20
Total Price		350.00					587.26			585.35			591.77

Bold items: Estimates based on average weight conversions.

Blue items: grouped together in the Gardenripe share. If multiple prices were found, the prices were averaged.

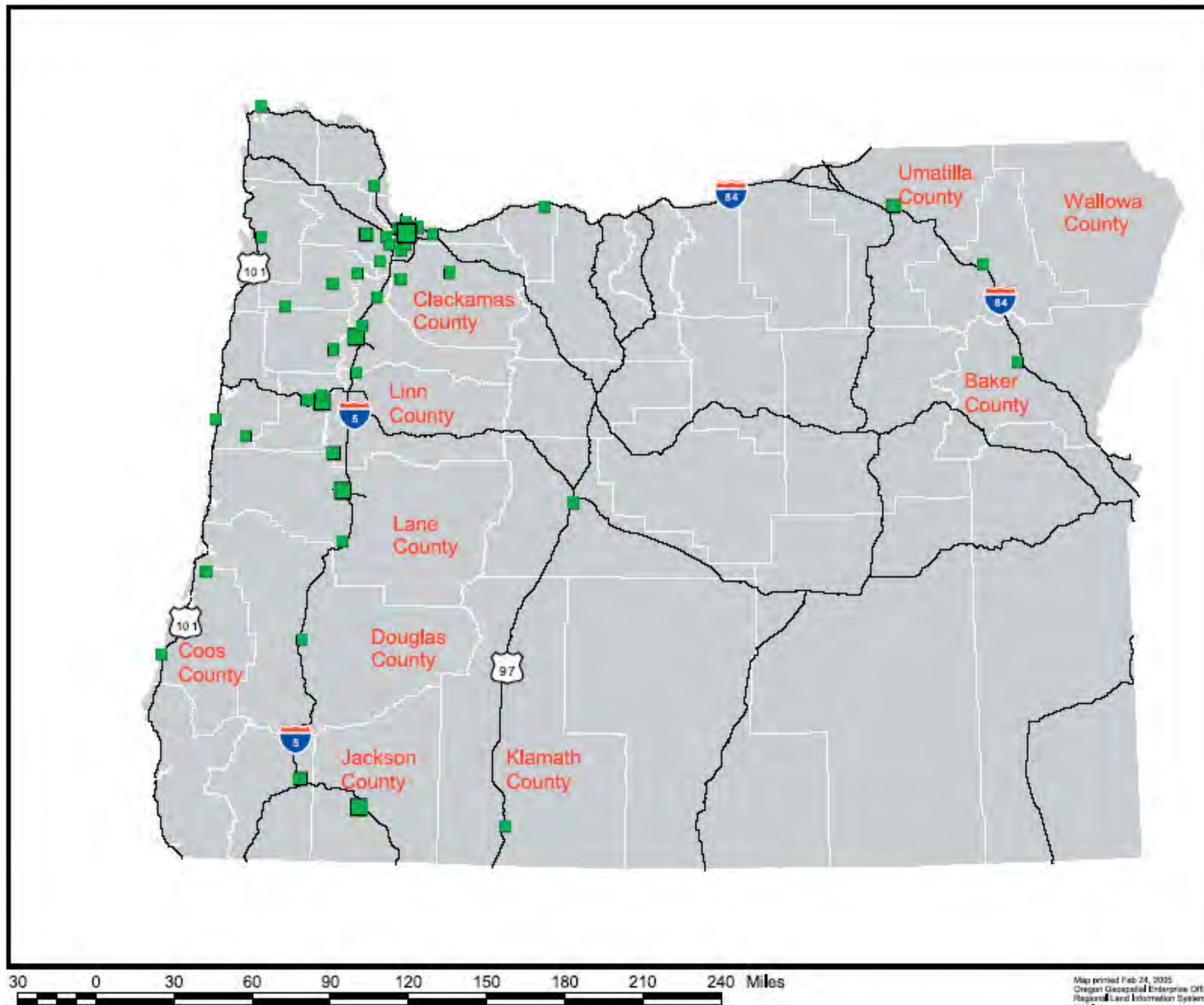
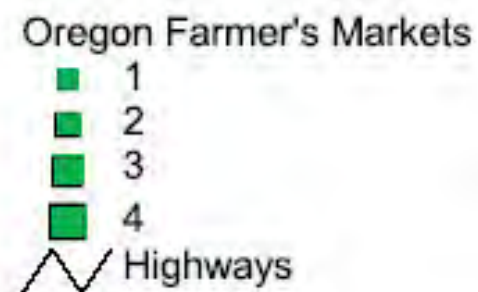
Red items: grouped together in the Gardenripe share. If multiple prices were found, the prices were averaged.

Total Useful Matches: 23
Comparison Matches: 33

Total Useful Matches: 18
Comparison Matches: 27

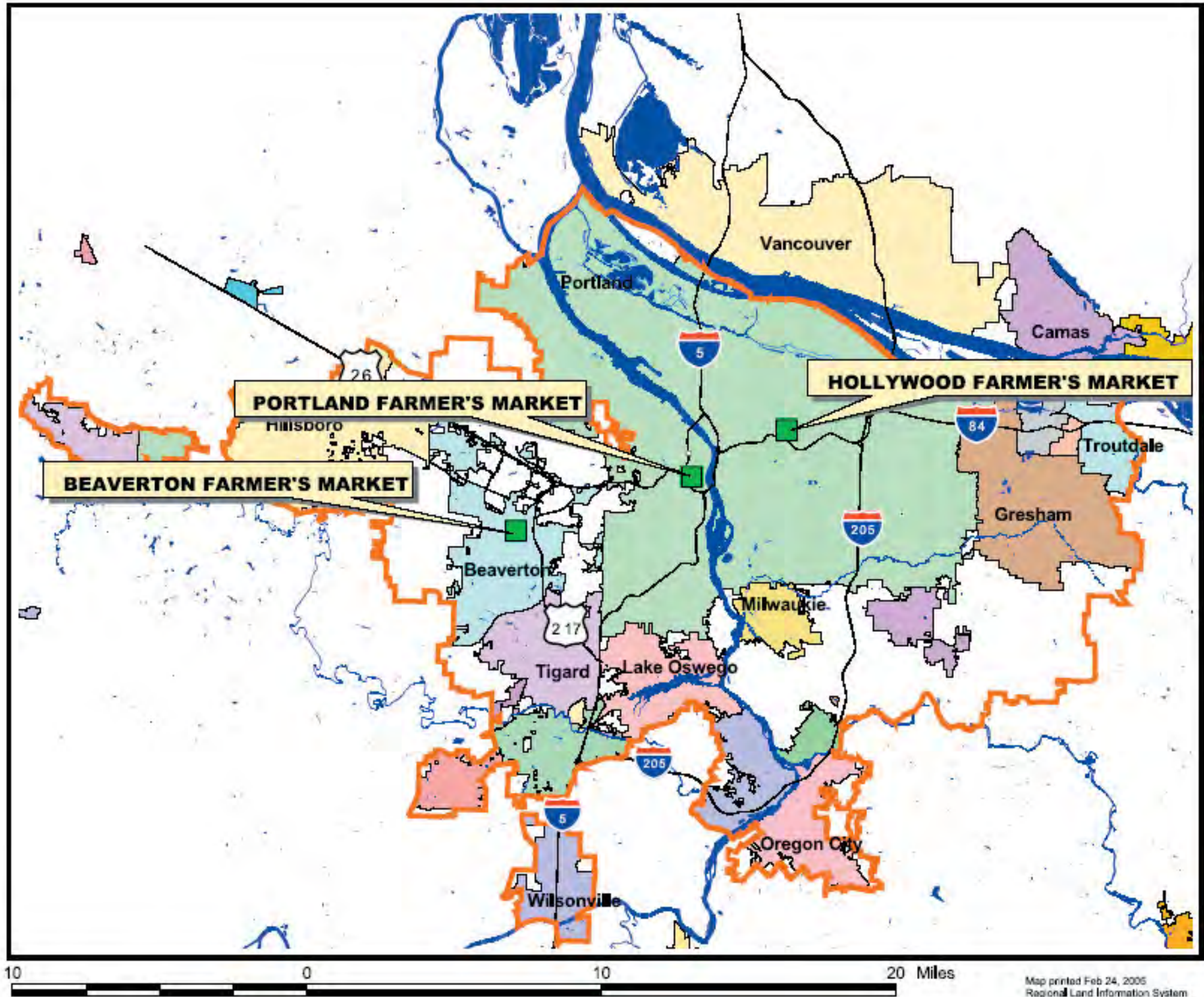
Total Useful Matches: 23
Comparison Matches: 31



Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Number of Farmer's Markets
 within the State of Oregon
 by zip code



Map printed Feb 24, 2005
 Oregon Geospatial Enterprise Office
 Regional Land Information System
 2004
 Oregon Farmer's Market Association

Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Farmer's Markets selected
 for study



 Selected Study Markets
 Urban Growth Boundary

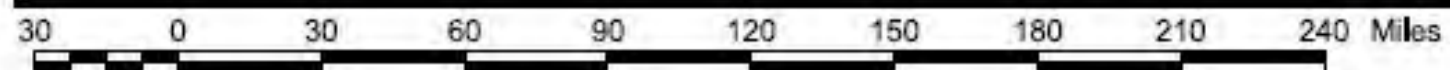
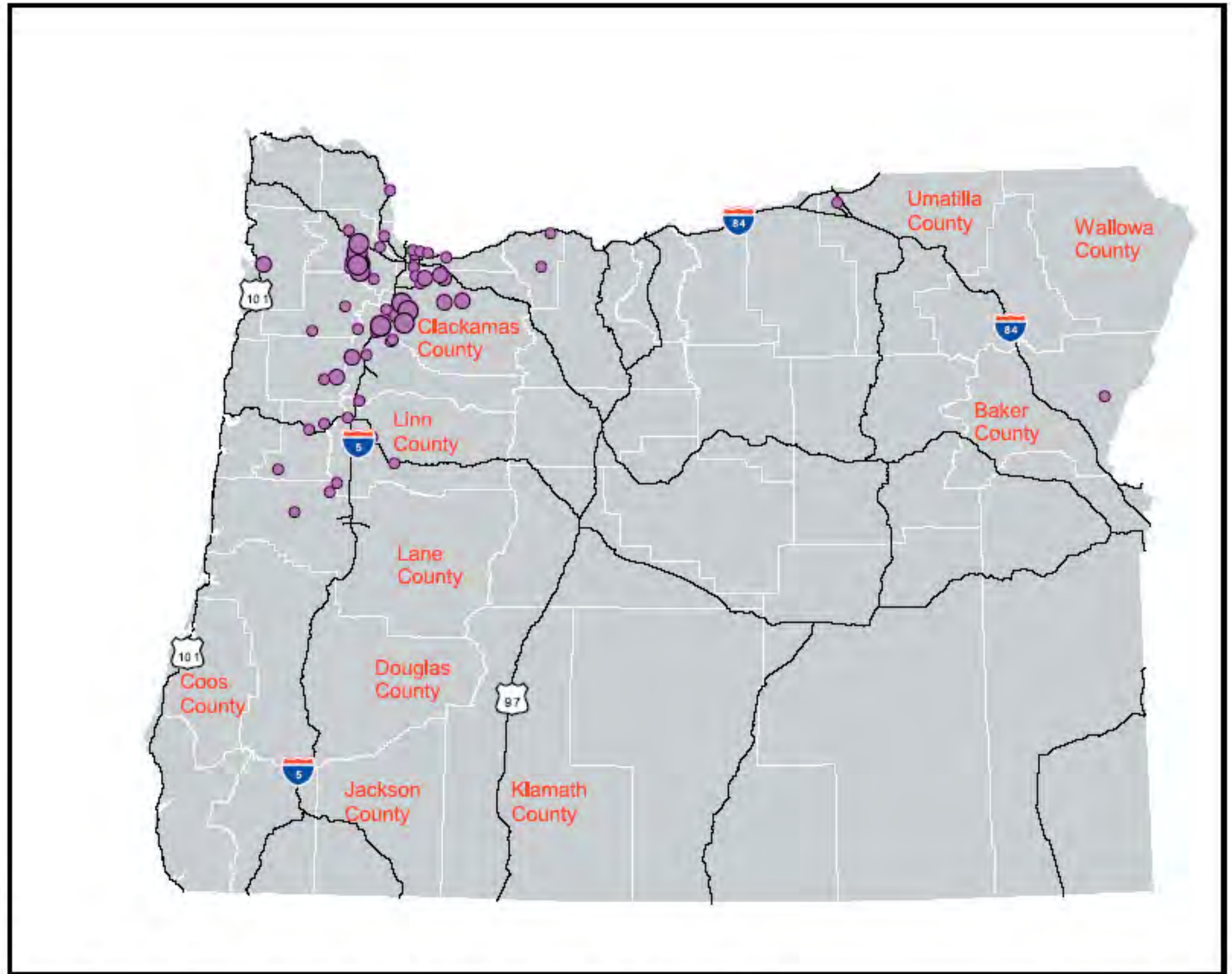
Map printed Feb 24, 2005
 Regional Land Information System
 Oregon Farmer's Market Association



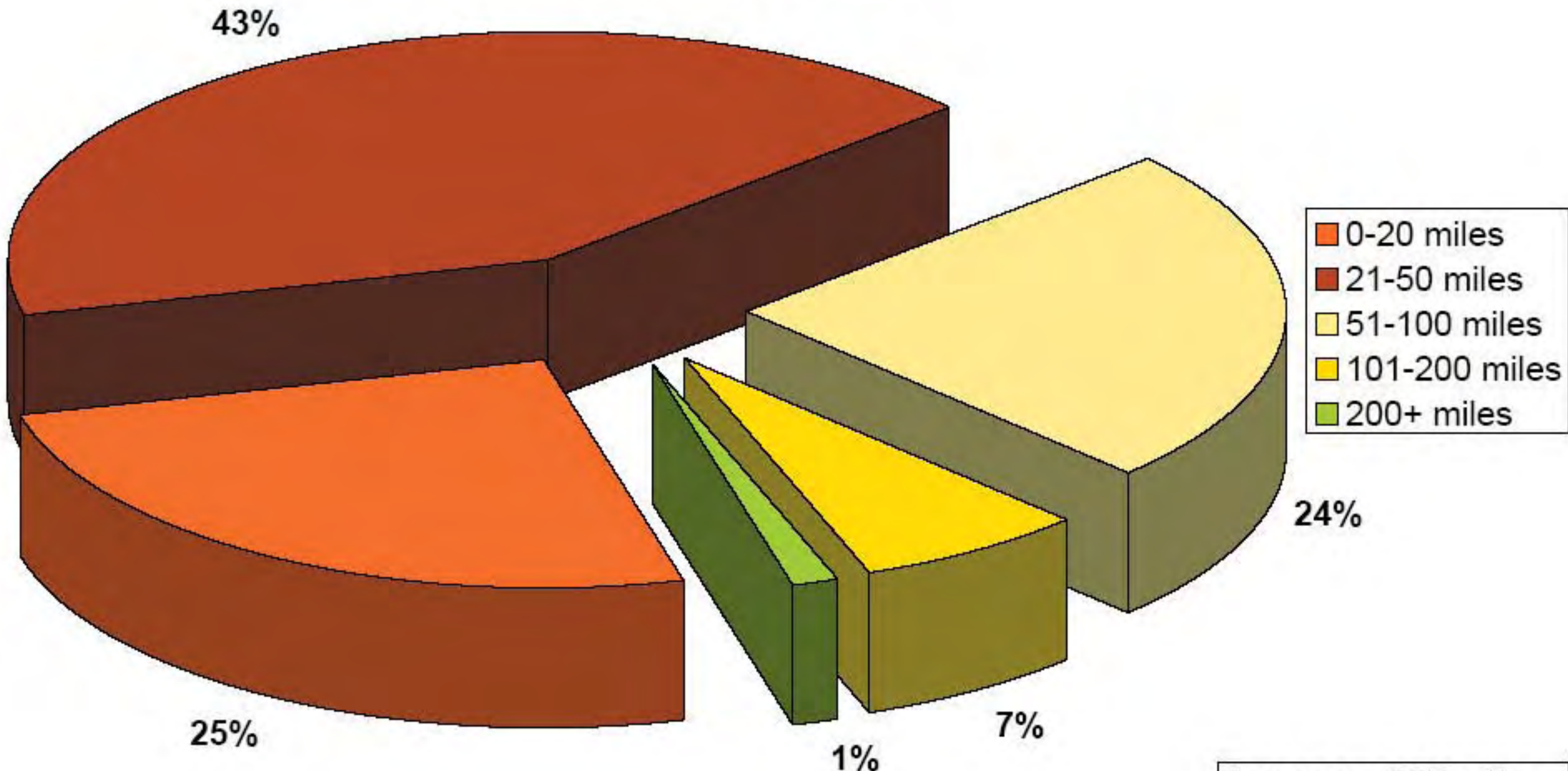
Farmer's Market Participant

- 1
- 2
- 3

Highways

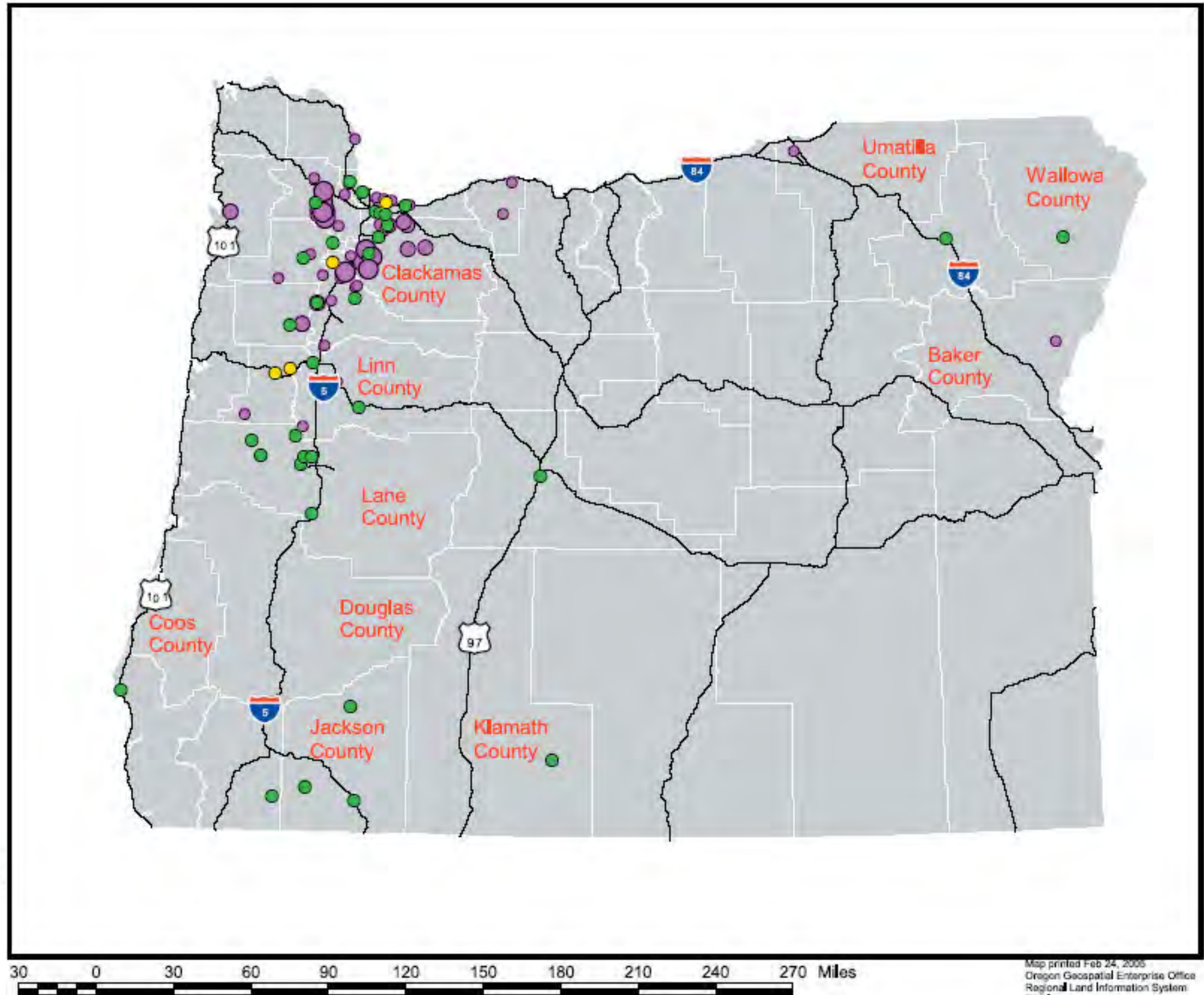


Distance Traveled "Farm to Market"



Average- 47.9 miles
Minimum- 0.6 miles
Maximum- 348 miles

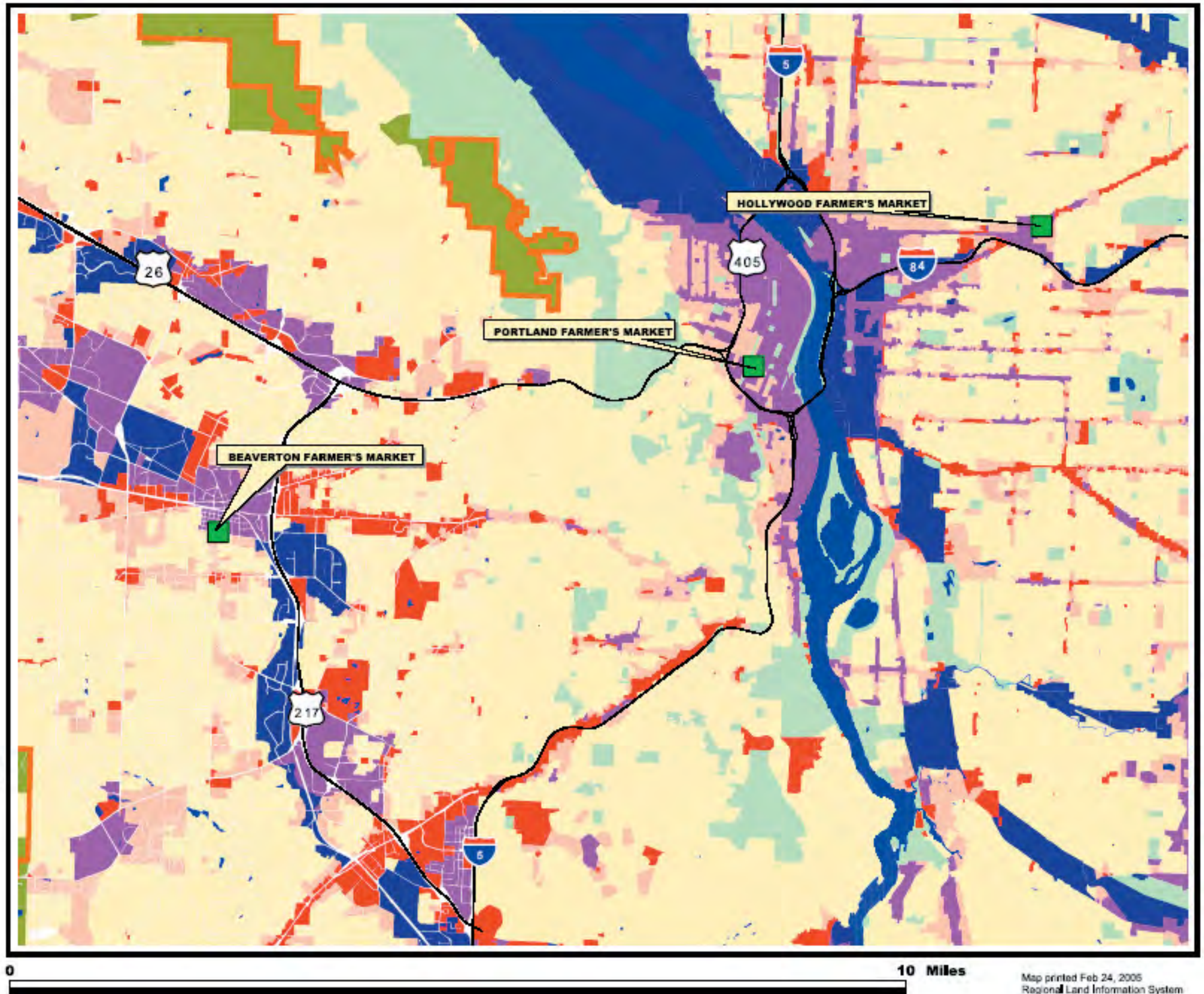
Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Number of Farms Participating
 in select Farmer's Markets
 & Community Supported
 Agriculture Programs
 by zip code



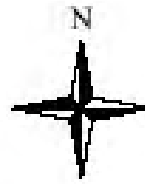
Map printed Feb 24, 2005
 Oregon Geospatial Enterprise Office
 Regional Land Information System
 ESRI
 Oregon Farmer's Market Association
 Portland Area CSA Coalition



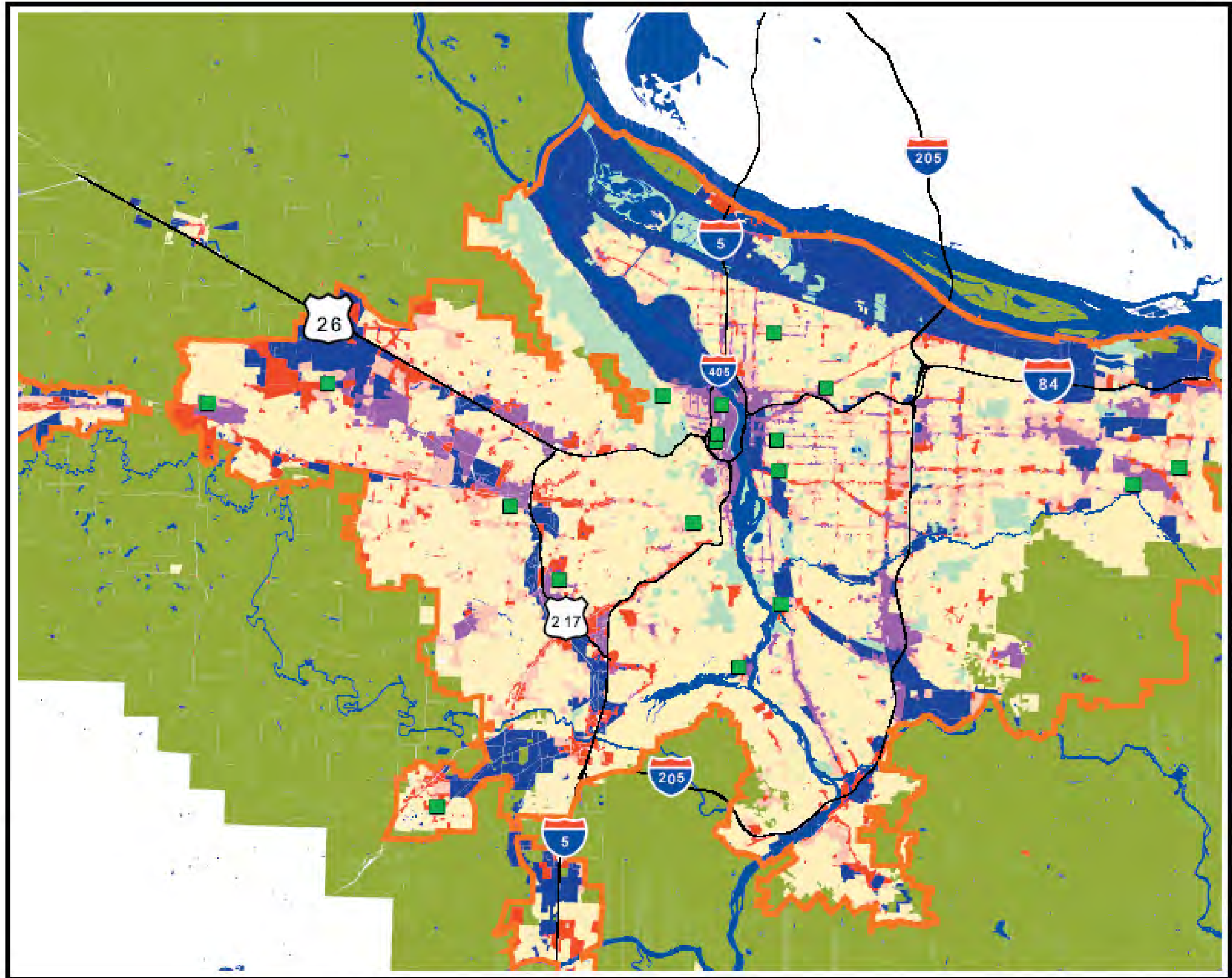
- Selected Study Markets
- Urban Growth Boundary
- Zoning**
- Commercial
- Industrial
- Single Family
- Multi Family
- Mixed Use
- Parks & Open Spaces
- Rural



Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Zoning for areas with
 Farmer's Markets within the
 Urban Growth Boundary



- Farmer's Markets
- ▬ Urban Growth Boundary
- Zoning**
- Commercial
- Industrial
- Single Family
- Multi Family
- Mixed Use
- Parks & Open Spaces
- Rural



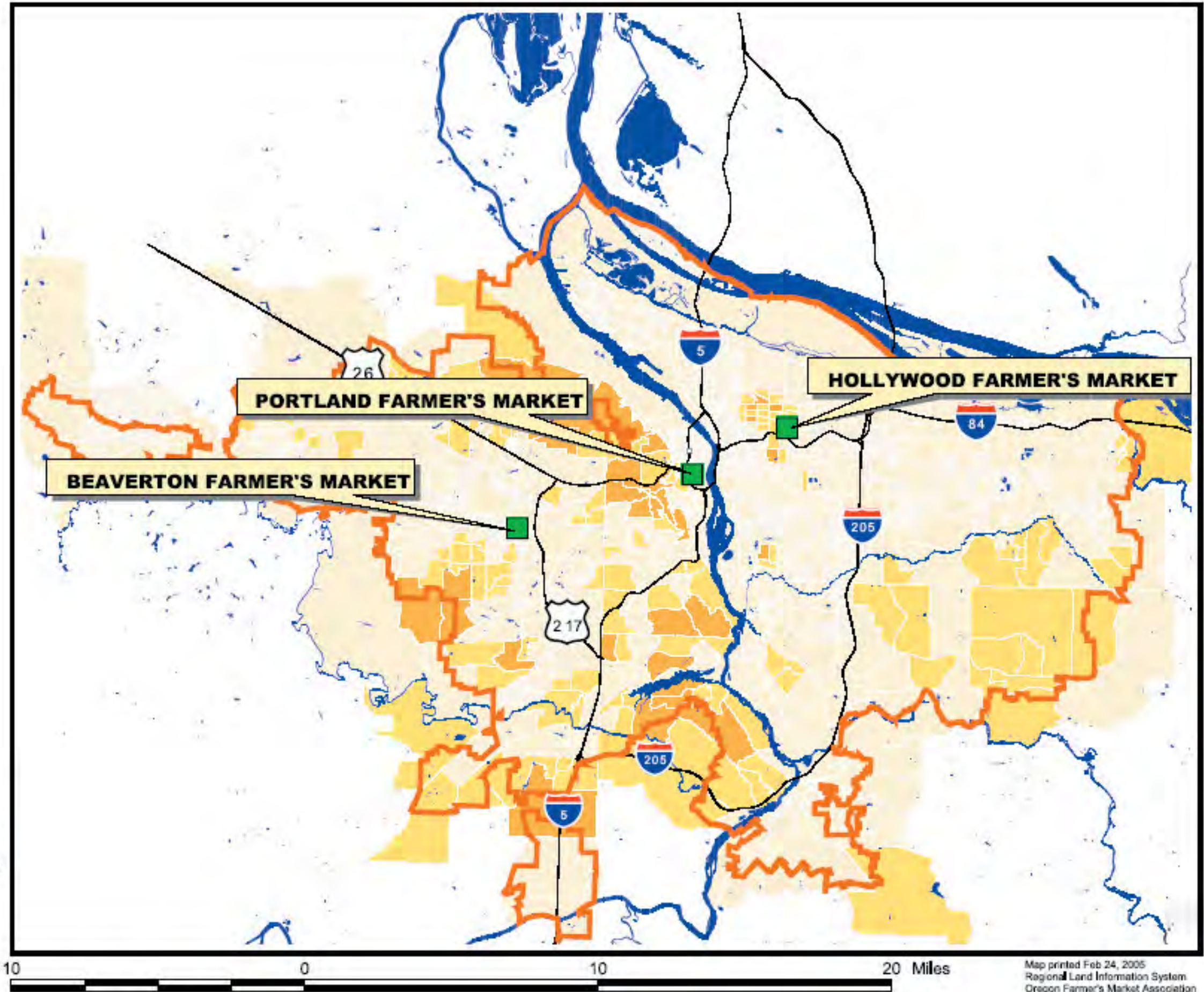
0 10 Miles

Map printed Feb 24, 2005
 Regional Land Information System
 Oregon Farmer's Market Association

Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Median Income of areas
 around Farmer's Markets
 selected for Study








- Selected Study Markets
- ▬ Urban Growth Boundary
- Median Income (2000 Census)
- \$8,179 - \$34,464
- \$34,465 - \$47,435
- \$47,436 - \$62,875
- \$62,876 - \$86,145
- \$86,146 - \$136,102

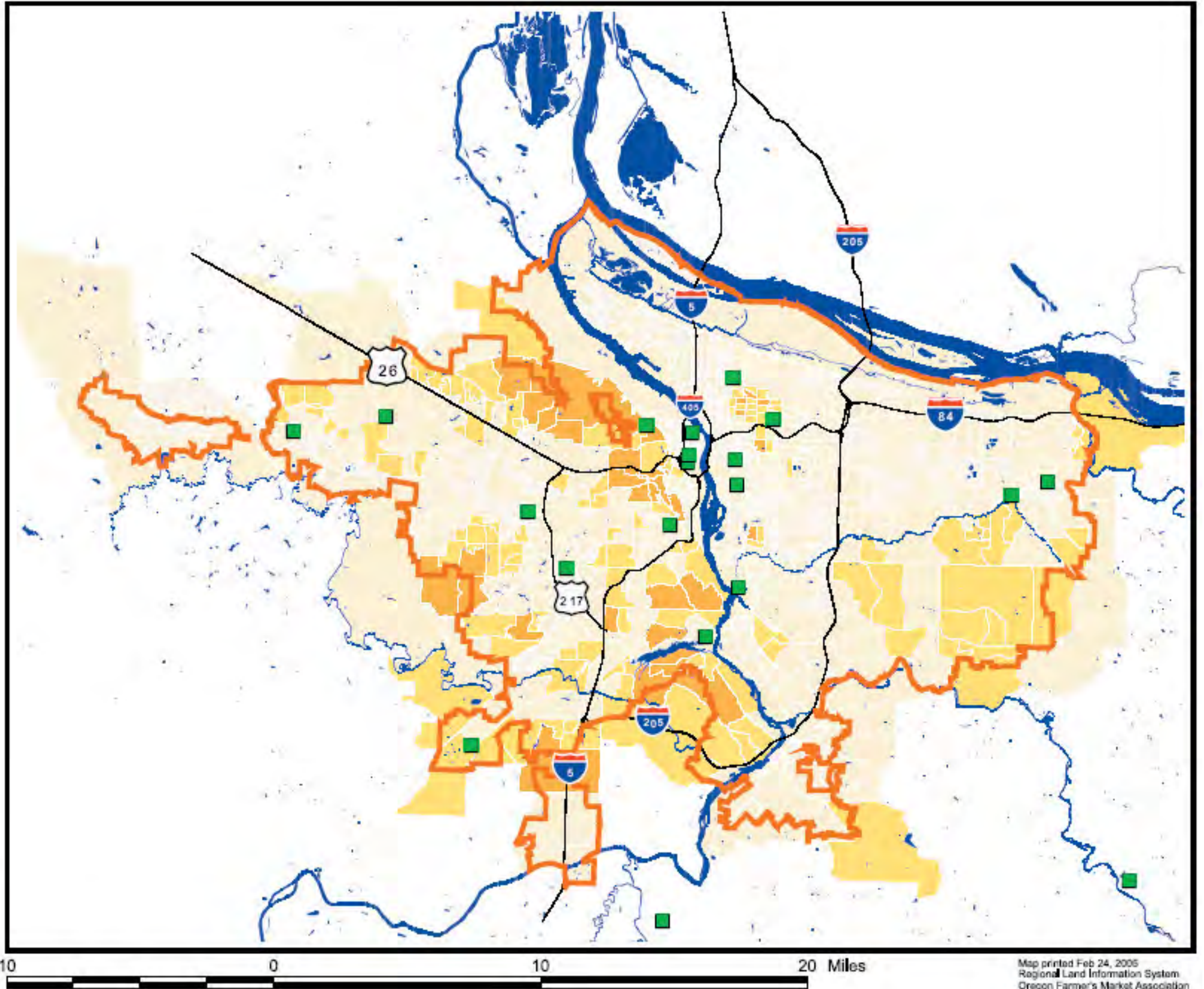


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 Regional Land Information System
 Oregon Farmer's Market Association
 U.S. Census Bureau (2000)

Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Median Income of areas with
 Farmer's Markets within the
 Urban Growth Boundary

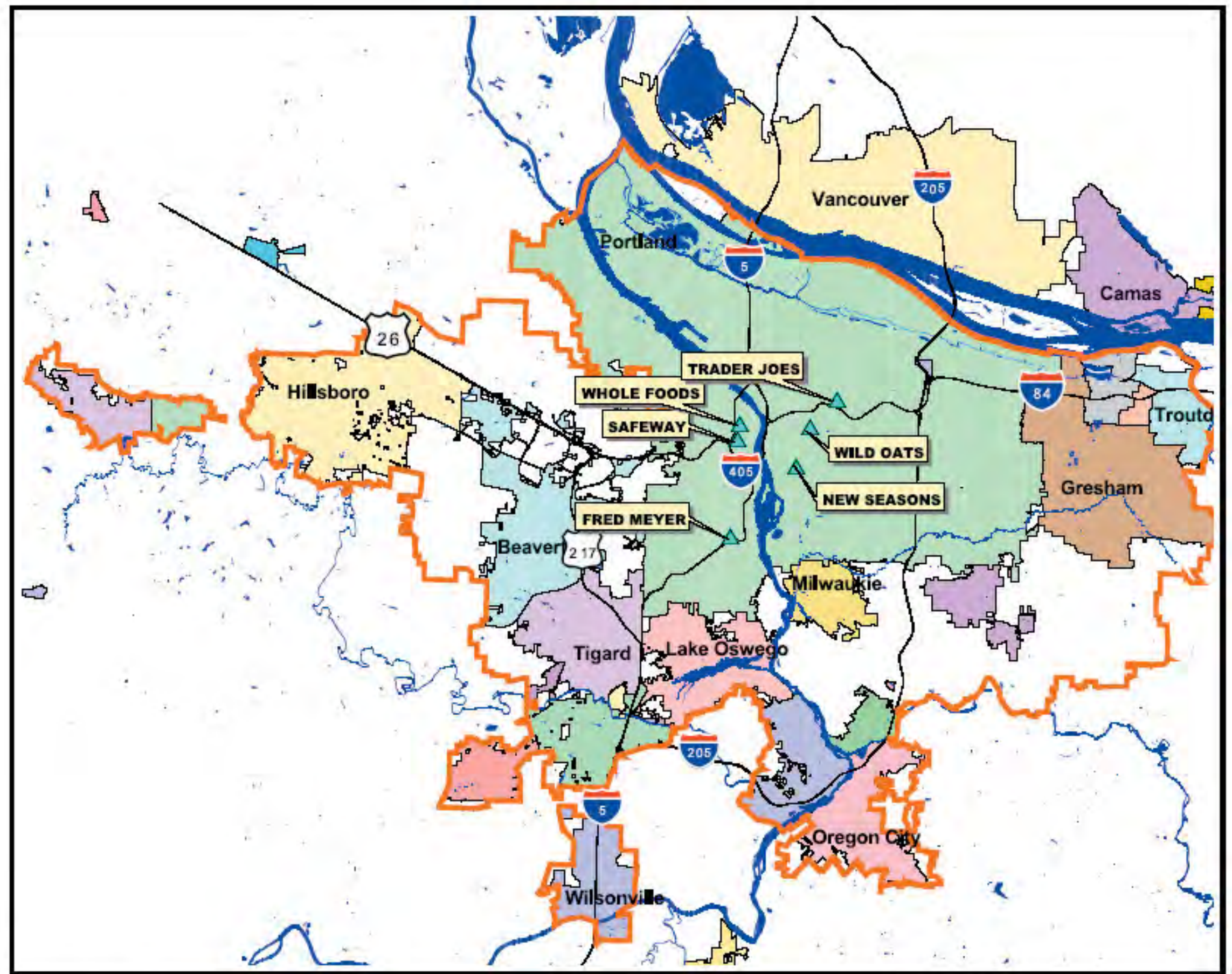




-  Farmer's Markets
-  Urban Growth Boundary
- Median Income (2000 Census)
-  \$8,179 - \$34,464
-  \$34,465 - \$47,435
-  \$47,436 - \$62,875
-  \$62,876 - \$86,145
-  \$86,146 - \$136,102



Map printed Feb 24, 2005
 Regional Land Information System
 Oregon Farmer's Market Association
 U.S. Census Bureau (2000)

Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Grocers selected for study



 Selected Study Grocers
 Urban Growth Boundary



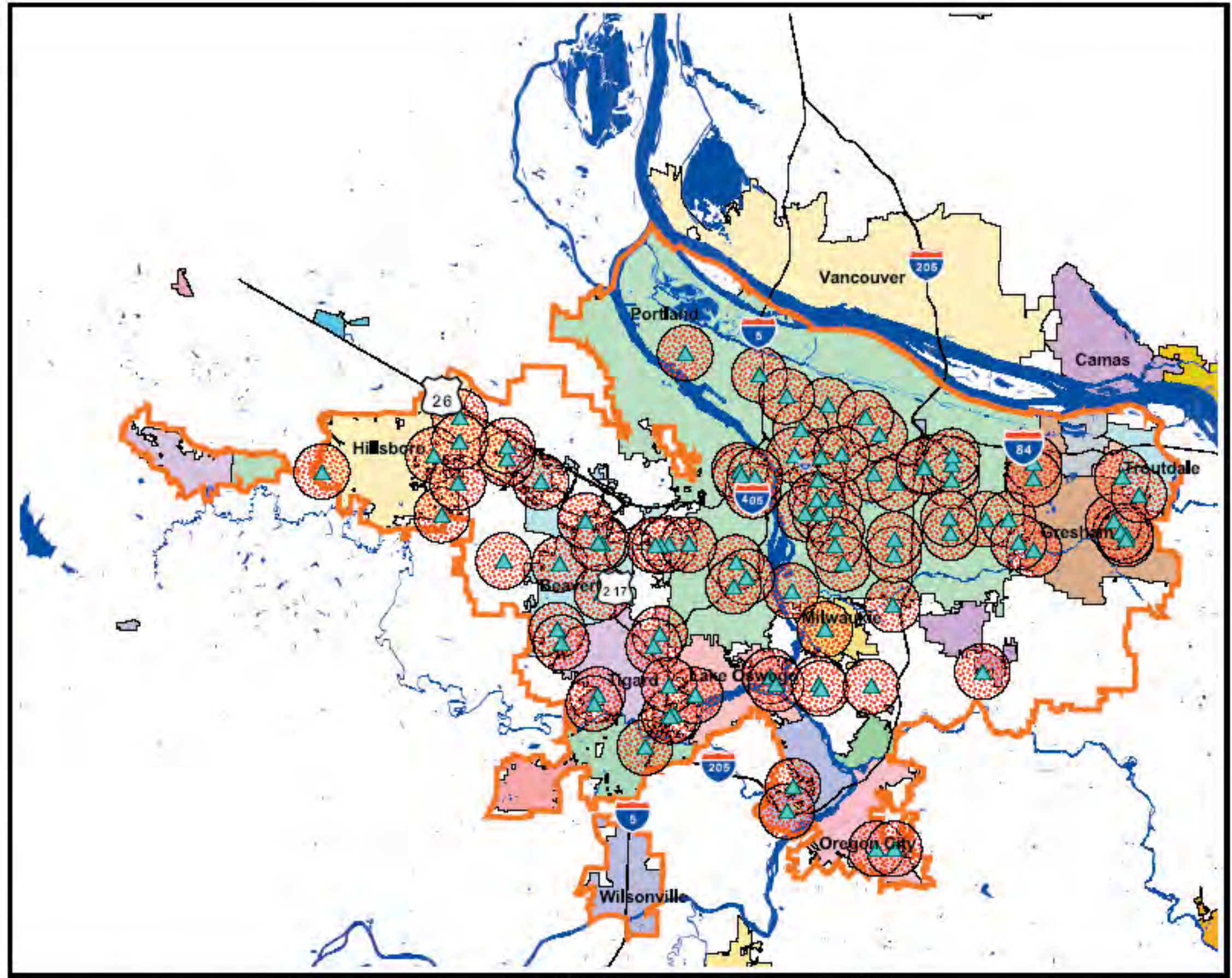
Map printed Feb 24, 2006
 Regional Land Information System




Cost per Sample Food Basket



■ Wild Oats (East Burnside)	\$40.30
■ Whole Foods (Downtown)	\$33.31
■ New Seasons (SE Division)	\$32.81
■ Safeway (Downtown)	\$31.51
■ Trader Joe's (Hollywood District)	\$26.85
■ Fred Meyer (Barber)	\$25.69
■ Downtown Portland Farmer's Market	\$27.65
■ Beaverton Farmer's Market	\$16.79
■ Hollywood Farmer's Market	\$16.64

Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Grocers within the
 Urban Growth Boundary
 with 1-mile buffer zones

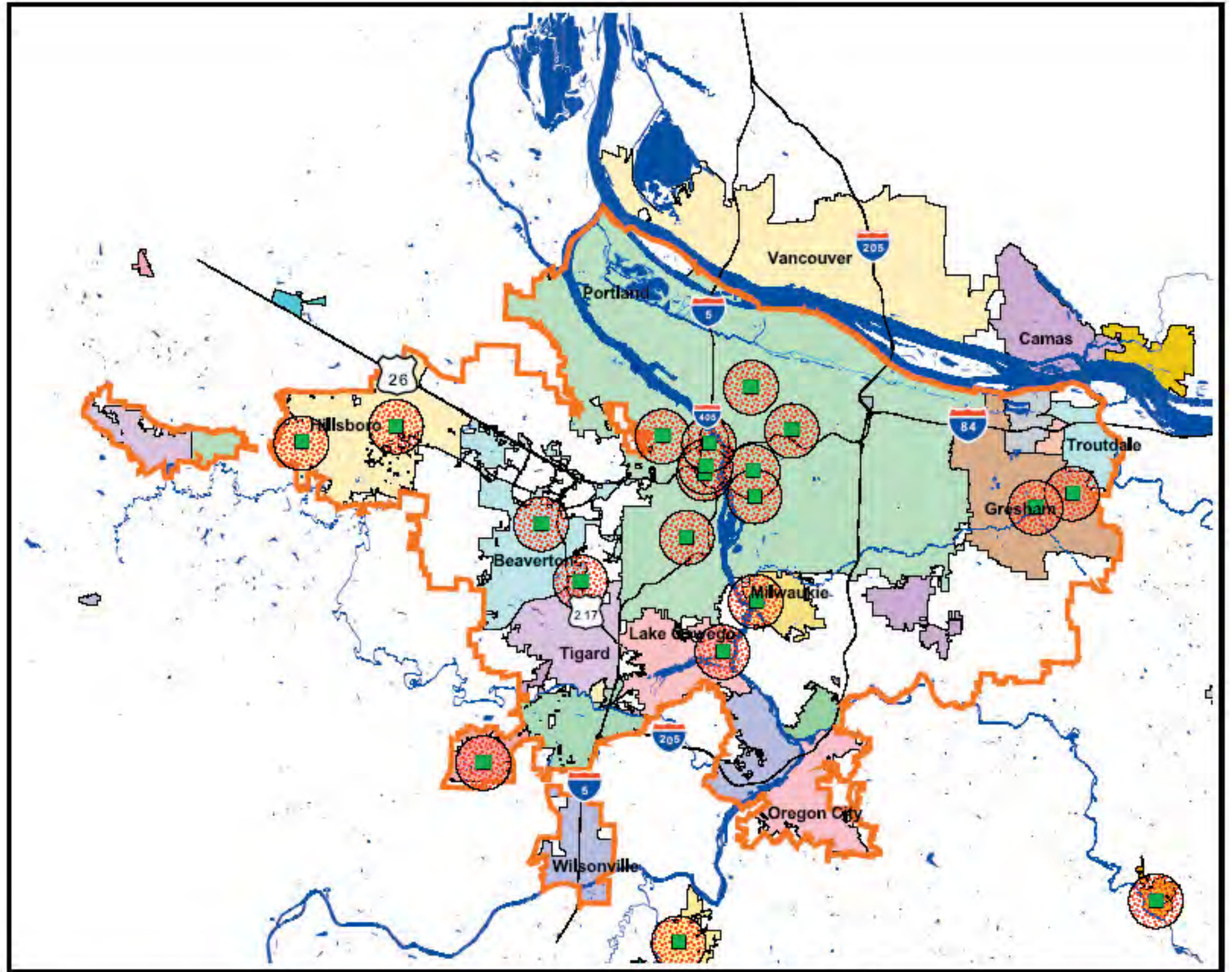


-  Grocers within UGB
-  1-mile buffer zones
-  Urban Growth Boundary



Map printed Feb 24, 2005
 Regional Land Information System

Portland State University
 Asset Mapping Capstone
 Urban Agriculture
 Fall 2004/Winter 2005
 Farmer's Markets within
 the Urban Growth Boundary
 with 1-mile buffer zones



- Farmer's Markets
- 1-mile buffer zone
- Urban Growth Boundary



Map printed Feb 24, 2005
 Regional Land Information System
 Oregon Farmer's Market Association

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