INCH BY INCH, ROW BY ROW: IMPLEMENTING URBAN AGRICULTURE PROJECTS IN EUGENE

by

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The City of Eugene is advocating for garden projects by expanding their Composting Program to include Urban Agriculture. This research uses 19 in-depth, personal interviews with gardening experts in Eugene to explore the factors that make urban agriculture projects successful and sustainable based on specific areas for capacity building identified by the researcher and City staff. Using qualitative analysis, I found that each identified area for capacity building could be perceived as a barrier to establishing garden space. ‘Successful’ and ‘sustainable’ gardens confront multiple barriers to garden implementation and remain diverse and productive over time. The results of this study provide insight into how and why the City is choosing to remove barriers to people who grow their own food, and justification for the need for the City’s Urban Agriculture Program.

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CHAPTER I

INTRODUCTION

The topic of urban agriculture is of growing interest among residents, government officials, nonprofit organizations, community groups, and many others in the Eugene area. A walk around any residential neighborhood is likely to yield at least one compost pile, a few raised beds, and most likely some chickens. While gardening may seem like a way of life in this town, many residents perceive barriers that get in the way of significant gardening efforts. Barriers include a lack of education about gardening practices, as well as the cost and maintenance of constructing a garden, the amount of time it takes to keep a garden, and acquiring enough land to have an appropriate amount of garden space (Coyne & Knutzen, 2008).

Perhaps the most significant barrier is in place for those wanting to receive a Community Garden plot through the City's Parks and Open Space program. To receive a plot, a person must enter a community garden lottery. If he does not receive a spot, he must wait on a waiting list through the growing season and try again the following year. However, once a plot is secured, a resident can keep it for as long as they wish for an annual fee. In an effort to 1) create greater urban agriculture capacity without the expense of building new community gardens and 2) encourage greater backyard composting through urban gardening, the City's Waste Prevention and Green Building Program recently broadened the scope of its Composting program to encompass Urban Agriculture. Urban agriculture is defined as "the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities" (Bailkey & Nasr, 2000 in Brown & Carter, 2003). By advocating for urban

agriculture projects, the shift allows the City to guide residents through zoning and code requirements. To do this, the City has shifted an existing 1 Full Time Employee Compost Specialist to work half time as the Urban Agriculture Coordinator to work specifically with residents wanting to build individual, neighborhood, or community gardens.

The same walk around many Eugene neighborhood yields vacant space. There are empty lots in downtown and in neighborhoods, along bike paths, next to schools, around apartment complexes, next to shopping centers, and many more. Why are there so many vacant spaces? Is it possible to transform these spaces into neighborhood garden plots? Are there individuals in town that are willing to allow for temporary use of their land for garden space? Is it legitimate to use public or private land as neighborhood garden space in the City? Is it possible for community members to utilize these spaces for gardens? This report analyzes these questions, and looks to plausible solutions.

Problem Definition

There are two defining barriers in the City's Community Gardens Program that limit the number of people able to participate:

1. The current system does not have enough spaces to meet the current need (supply/demand): there are about 70 people on the waiting list to receive a garden plot for this year (Hallett, 2011). Assuming the 300 community garden plots serve exactly 300 residents, the 70 people on the waiting list represent another potential 23% of the total people served by community gardens;
2. The more critical capacity issue is that the City does not have the capital or operational resources to continue to maintain the existing system without

programmatic changes, nor does it have any way to support expansion of the program, despite the fact that the price of garden plots has increased by about 67 percent between 2010 and 2011 in an effort to make the program cost neutral (Hallett, 2011).

Research Questions

In order to address these barriers, this research answers the following questions:

- What factors make a neighborhood garden successful and sustainable?
- Under the current system and city code, how and why does the city remove barriers to people who grow their own food?
- What is the justification for the financial investment into the City's Urban Agriculture Program?

Project Purpose

The purpose of this study is to get a general understanding of how neighborhood gardens function in relation to Community Gardens. This research also analyzes the planning and policy impacts of the Urban Agriculture Program on the City itself, providing a justification for the program in the public sector. This research will contribute to the development of an Urban Agriculture Manual for residents, who can utilize this information to determine if there is space within their own neighborhood to create garden space on their own.

Background and Significance

Gardens in Eugene are significant. There are 300 total City Community Plots in Eugene, serving at least 300 people (one per plot) although likely more because people share plots and feed their families the vegetables that are grown in that space (Hallett, 2011). Additionally, there are 33 schools that currently have school gardens with the School Garden Project in Lane County. Of the nonprofits involved in this research that have garden space, FOOD for Lane County Annually staff and volunteers harvest over 140,000 pounds of fresh, organic produce from all three gardens. Of that, about 90,000 pounds are distributed to low-income households and the remaining 50,000 pounds are sold through a youth-run farm stand and a community-supported agriculture program (FOOD for Lane County, 2011). Nonprofit Huerto de la Familia (The Family Garden) serves 53 Latino families (roughly 200 people) through their garden plot program (Cantril, 2011), and the local Victory Gardens group has put in roughly 600 backyard gardens since the mid-2000s (Anthony, 2011).

Figure 1.1 shows garden distribution in Eugene for those interviewed for this project, as well as School Garden Project school participants for the 2010-2011 academic year, and the distribution of City Community Gardens. Victory Gardens are not represented here, but it is important to keep in mind that they make up a large portion of individuals that have gardens in their homes.

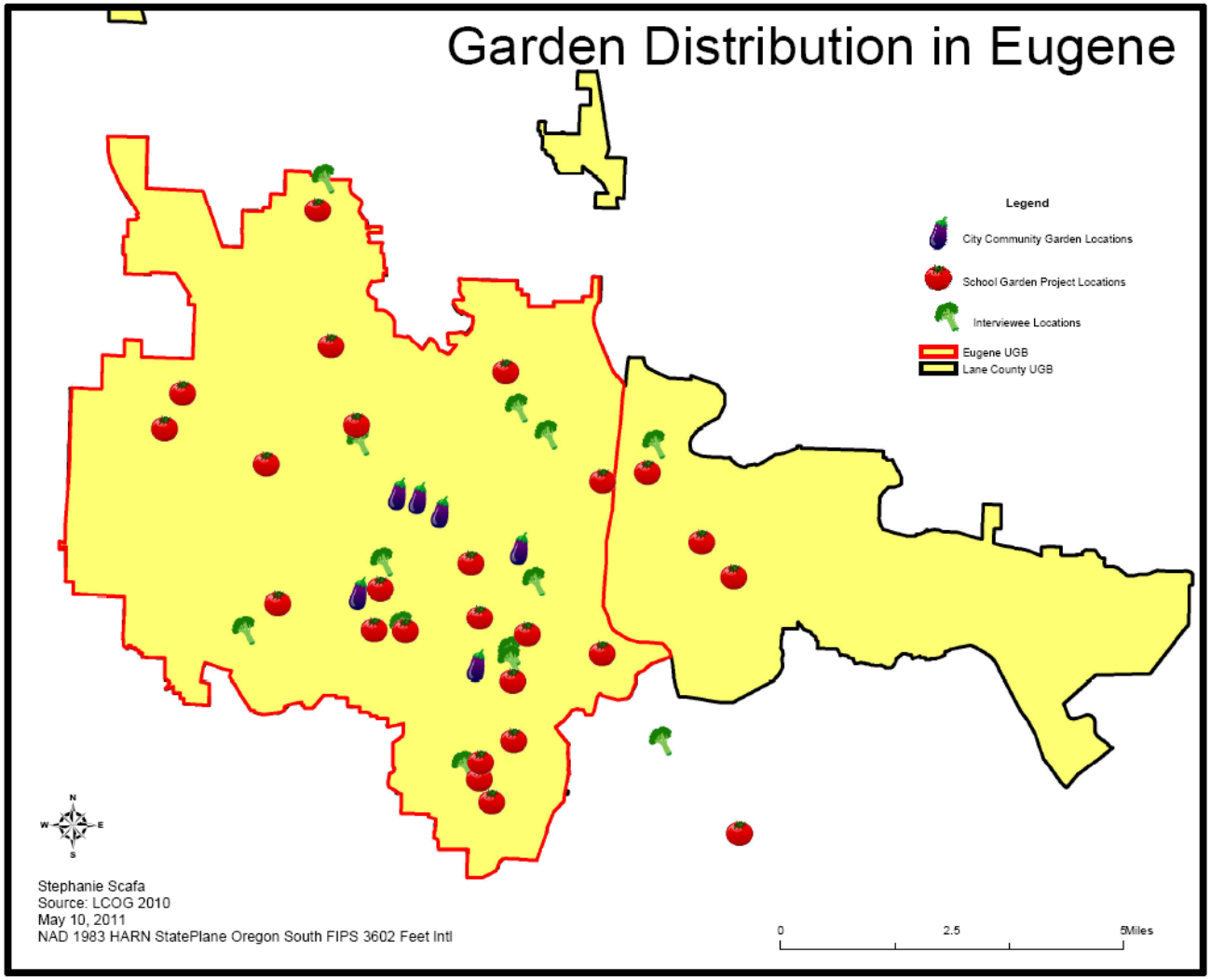

Figure 1.1. Garden Distribution in Eugene

One of the first objectives of the City's Urban Agriculture Program is to empower residents to start gardens on their own. This is a bottom-up approach that is intended to provide residents with the know-how to create garden space on their own or with a group of neighbors. The Urban Agriculture Manual (Manual) includes examples of private and public garden space in the City that can serve as models for interested citizens. The Manual encourages residents to find clarity within City regulations and seeks out useful resources that address the barriers to garden development and construction. The Manual also includes an assessment of the due diligence residents can complete in order to find accessible land to be used for garden space. The City is using this model to motivate citizens to construct their own gardens by providing access to resources and clarity about the City's rules and regulations. The Manual will be complete in the summer of 2011.

There is an extensive amount of literature explaining how urban agriculture projects such as community gardens provide economic (Stringer, 2009; Patel, 1991; Hancock, 2001; Lazarus, 2000), environmental (Irvine et al, 1999; Smit & Nasr, 1992), health (Armstrong, 2000; Wakefield et al, 2007), and social (Armstrong, 2000; Shinew et al, 2004; Twiss et al, 2003; Glover, 2004), benefits to their users. There is also ample research that has been completed in the field on the growing importance of urban agriculture in cities (Bailkey & Nasr, 1999; Mougeot, 2000; Pothukuchi & Kaufman, 2000; Hendrickson & Heffernan, 2002; Brown & Carter, 2003; American Planning Association, 2006; American Planning Association, 2007; Pothukuchi, Glosser, & Kaufman, 2007; Meyers, 2008).

This particular research localizes this knowledge into an understanding of how a Manual such as the one the City is producing can significantly change residents'

behavior. By focusing on interviews with experts in the field of urban agriculture, this research contributes to a body of planning and public policy knowledge in the following ways:

1. Generates information for the City of Eugene: this research is useful on the local level, and
2. Explores a method of assessing the feasibility of urban agriculture programs in cities.

The Community

When the Manual is complete, residents will easily be able to access information on: 1) how to select a site for an urban agriculture project, 2) considerations for how to raise chickens, 3) community models for gardens of various sizes, 4) advice from gardening experts in the City, 5) resources available to help projects succeed, and 6) clarification of city zoning regulations (City of Eugene, 2011). This research provides identification of the main policy instruments and resources that are driving this work.

The concept of urban agriculture is not new in Eugene. The City's Community Gardens Program began in 1978 (Hallett, 2011) and the University of Oregon Urban Farm started as a grassroots 'guerrilla gardening' effort in the late 1970s (Keeler, 2011). Eugene's rich agricultural history plays a major role in analyzing how current urban agriculture practices affect policy and planning decisions. Local agricultural assistance offered by Oregon State University Extension Service as well as the City's composting efforts to reduce waste has increased awareness about the importance urban agriculture activities in Lane County. Additionally, the Lane County Local Food Market Analysis

(September, 2010) presents opportunities to expand local markets for locally produced food and provides ideas for economic development and economic drivers currently available to the County.

The motivation for developing the City's Urban Agriculture program came from policy guidance to reduce waste from the landfill and from the following projects:

- **Eugene Food Security Resource and Scoping Plan (April, 2010):** This scoping plan was developed to identify how the City can remove barriers to increasing urban agriculture activities while creating a more effective and efficient working local food system with community partners. This document also provides the necessary next steps in advancing the concept of food security planning in the community.
- **Eugene Climate and Energy Action Plan (September, 2010):** The City created this plan with three goals in mind. To 1) reduce community-wide greenhouse gas emissions 10 percent below 1990 levels by 2020, 2) reduce community-wide fossil fuel use 50 percent by 2030, and 3) identify strategies that will help the community adapt to a changing climate and increasing fossil fuel prices. The third chapter of this document is dedicated to Food and Agriculture. Specifically, Objective 9 is to increase the availability of home-grown and locally sourced food in Eugene by expanding the number of community gardens on public and private lands, encouraging planting of non-invasive fruit-bearing trees, and reevaluating limitations of numbers and types of animals permitted on residential property (City of Eugene, 2010).

A common theme in these two documents is the concept of educating people about how and why they should grow their own food. Related to educating people is the importance of Food Policy Councils (FPCs) in educating citizens. Lane County's FPC is an advisory body that reviews and recommends policies to strengthen the local food economy and improve access to healthy and nutritious food. Generally speaking, FPCs bring together stakeholders from a variety of food-related sectors, and the structures of FPCs vary from one Council to another. The mission of Lane County's FPC is "to foster community food security and local food system development in Lane County" (Lane Food Policy Council, n.d.).

A preferred educational method for learning how to garden in Eugene is gardening with a group of people. A model of gardening that has recently become popular is the concept of 'neighborhood gardens.' For the sake of this research paper, I distinguish between *Neighborhood Gardens* and *Community Gardens* as follows:

- **Neighborhood Gardens** are spaces where residents create their own garden(s) with minimal city intervention. These spaces can be public or private and differ in organizational structure depending on who is in charge of the site and depending on how the neighborhood functions as a whole. This garden model relies on volunteers to maintain the project.
- **Community Gardens** are individual plots assigned to individuals or families on an annual user-fee basis. This model is used by the City of Eugene, as described above; residents pay for a space (roughly 20' x 30' plot) on a yearly basis to the Parks and Open Space Department. The fee for a plot is $100. Two other organizations in town that use this model are Huerto de la Familia and FOOD for

Lane County; the plots through these organizations are assigned to families and the fee is needs-based.

Why Gardens?

The American Community Gardening Association recognizes that community gardening improves people's quality of life by providing a catalyst for neighborhood and community development, stimulating social interaction, encouraging self-reliance, beautifying neighborhoods, producing nutritious food, reducing family food budgets, conserving resources and creating opportunities for recreation, exercise, therapy, and education (American Community Gardening Association ACGA, n.d.). These economic, environmental, health, and social benefits are vital to any neighborhood. Additionally, it is the objective of the City's Waste Prevention program that by investing in Urban Agriculture activities, residents will continue and increase their diversion of organic wastes from the solid waste disposal stream into beneficial uses.

Limitations

There are three limitations to this research. The first limitation is that because the interviews were conducted in Eugene and with a relatively small sample, these results cannot be generalized outside of this geographic area. Additionally, because interviews were conducted in one specific moment in time, with certain individuals who happen to see gardening as a way of life at this point in their lives, this study is subject to selection bias, which occurs when there may be an error in choosing individuals or groups to take part in a study. This bias is inherent in the nature of this study, but could be alleviated if

this study was completed with the same participants over a lengthier period of time (thus making the study longitudinal in nature).

The second limitation is lack of recorded data regarding general gardening practices in Eugene. In describing the significance of gardens in Eugene, there is not enough quantifiable evidence to provide an estimate of the percentage of people involved in gardening efforts in the City. While the Background and Significance section above provides some quantifiable measures through organizations, there is no data on the number of individuals that garden in their homes in the City. Nor is there data showing how much food people are able to eat out of their home gardens. However, using anecdotal evidence through the interview process, I find that experienced gardeners are able to eat at least one fruit or vegetable out of their gardens year round (Clark, 2011; Donahue, 2011; Fischer, 2011). This always involves some sort of processing (canning, drying, freezing, etc.) in summer months when there is an abundance of fruit and vegetables in order to have a preserve of food for the winter months when crops are less productive and diverse. There is also no hard data on the proportions of food home gardeners eat, for instance, data measuring the proportion of food that is grown versus food that is purchased.

The final limitation in this study is that I distinguish between Community and Neighborhood Gardens in the Methodology, but because the concept of Neighborhood Gardens is so broad, there is much room for subgroups in this category. This is further addressed in Recommendations for Future Study later in the report.

Organization of this Report

This report is organized as follows:

Ch. II Literature Review: This chapter provides a detailed literature review of existing research related to urban agriculture in the US, specifically urban gardens.

Ch. III Methodology: This chapter outlines the methods used to complete this study. The methods section will begin with a brief discussion of the research objectives and sample population, and continue with a detailed description of the data collected for this project.

Ch. IV Findings: This chapter focuses on the results of the interviews with urban agriculture experts in Eugene and targets each of the Areas for Capacity Building.

Ch. V Analysis: The Analysis section relates the findings back to the study's initial research question. This section provides a policy analysis of the City's Urban Agriculture Program while providing justification for the program.

Ch. VI Conclusion: This chapter provides a final summary of the research completed. The research includes specific recommendations for the City based on findings from the analysis.

CHAPTER II

LITERATURE REVIEW

Introduction: Overview of Urban Agriculture's Role in Planning and Policy

Food systems planning is a relatively new concept in the United States. Due to economic crises occurring in the world today, planners and policy makers now realize the need to plan for fair, equitable food from a safe, secure food system. Quon (1999) states that the link between urban planners and urban agriculture is inextricably linked: as more people migrate to urban areas planners will be forced to discuss and do something about the demand for food, potable water, shelter, transportation and health and recreation services; an urban influx will pose additional stress on natural and cultural resources. Currently, about 49 percent of the US population lives in urban areas, up from 29 percent in 1950 and 10 percent 100 years ago (Population Reference Bureau, 2011). Urban agriculture forms part of the "survival strategy" of urban dwellers all over the world, and has historically been integral to urban areas (Drakakis-Smith, 1996; Mougeot, 1994 in Quon, 1999). Quon (1999) states that the importance and prevalence of urban agriculture will continue to grow as urban populations increase.

Rising oil prices and the socioeconomic impacts of importing and exporting food in and out of the US raise additional concerns for the ever-increasing global food system. On average, Lang (2001) states that the typical American prepared meal contains ingredients from at least five countries outside the United States. However, the inexpensive fossil fuels that our community and country depend on for transportation, food production, and industry are projected to become increasingly expensive (US Department of Energy, 2007 in Climate and Energy Action Plan, 2010). Additionally, as

large multinational companies increasingly control the food industry, small-scale local farmers suffer (Burbach & Flynn, 1980). Large distributors drive prices on imported goods, forcing many small farms to either export their crop as a raw commodity or replace regional crops with something more profitable. This phenomenon limits the potential for local self-sufficiency and increases dependency on outside sources (National Sustainable Agriculture Information Service, 2008). In short, this model of food production is not sustainable, meaning that one day it will no longer be possible to obtain our current amount of food shipped in from outside of the country using current methods.

Before 2007, the food system was "a stranger to the [land use] planning field," as described by Kameshwari Pothukuchi and Jerome Kaufman (2000) in one of the first articles interrogating the field of planning about its lack of attention to food systems. Pothukuchi and Kaufman (2000) conducted a survey with 22 planning agencies to understand why planners were not involved in food systems planning projects. Based on these surveys, they listed five main reasons for the limited amount of attention paid to the planning field: 1) the food system is not a planner's "turf," 2) food systems planning is a rural issue—not an urban issue, 3) the belief that the food system is driven primarily by the private market, 4) planning agencies are not funded to plan for food systems, and 5) the assumption that there is nothing wrong with the current food system. Additionally, they determined two other categories that were indirectly suggested by the interviewees: 1) there is a lack of focal agency or 'department of food' that a community planner has to work with and 2) planners felt as though they did not know enough about the food system to make a contribution (Pothukuchi & Kaufman, 2000).

Based on the work of Pothukuchi and Kaufman, the American Planning Association (APA) legitimized the field of food systems work in their *Policy Guide on Community and Regional Food Planning* (2007), which gave professional planners a framework to implement and change food policy at the local level. In 2006 the APA's Food System Planning Committee prepared a white paper on the importance of planning for food systems, defining the 'system' as "the chain of activities connecting food production, processing, distribution and access, consumption, and waste management, as well as all the associated supporting and regulatory institutions and activities" (APA, 2006). The policy guide is intended to be used by planners, who have the opportunity to exert their professional knowledge, skills, and relationships to develop creative community and regional food projects, and advocate for state and federal policies to support them (APA, 2007). This guide stresses the role of community and regional food planning to related issues of public health, accessibility, transportation, and economic development.

The Eugene Food Security Scoping and Resource Plan uses Figure 2.1 to depict the variety of inputs, activities, and resources required for a working local food system (without the red circles):

Figure 2.1. Working Local Food System Model Elements[1]

Urban agriculture projects play a huge role in this food system. As stated earlier, urban agriculture is defined as "the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities" (Bailkey & Nasr, 2000 in Brown & Carter, 2003). Circled in red are the areas where urban agriculture projects in Eugene integrate into the City's working local food system model. The circled areas are defined as follows:

- **Food Production:** Soil, water, amendments, seeds, starts, livestock, skills, knowledge and labor, machinery, capital equipment, business models, sustainable

[1] Adapted from *Jessica Chaney, "Planning our Food Future: The Role of Food Policy Councils" (2005)* in *City of Eugene Food Security Scoping and Resource Plan (2010)*

practices, urban agriculture, certifications (Salmon Safe, pesticide-free, USDA Organic, OMRI, TILTH, etc), and greenhouse gas emissions.

- **Direct Markets:** Community supported agriculture, farm stands, farmers markets, and direct sales represent the distribution aspect of the definition.
- **Consumer Interaction, Education, and Networking:** Home-scale food preservation, training programs, community equipment, and local food events and programs meet the processing aspect of the definition.
- **Food Assistance:** Food pantries, food recovery, meal sites, and meal delivery represent additional distributional aspects of the definition.
- **Food Waste Processing:** Composting is related to intensive plant cultivation in and around cities.
- **Government Role - Local, State, and Federal:** Laws, policy, financial incentives, technical assistance, adult education, K-12 school curriculum, university research, and school and community gardens have the opportunity to link plant cultivation and animal husbandry in and around cities.

In addition to playing such a large role in food systems planning in general, there are other specific areas where urban agriculture benefits society. These areas include: food security, the local economy, the surrounding environment, public health, community engagement, and a more localized food system.

Food Security

Food security is defined as "all persons in a community having access to culturally acceptable, nutritionally adequate food through local, non-emergency sources at all times" (Brown & Carter, 2003). The Community Food Security Coalition (CFSC) is a nationally known and recognized coalition of over 300 organizations. CFSC "catalyzes food systems that are healthy, sustainable, just, and democratic by building community voice and capacity for change" (CFSC, n.d.). In a primer prepared for CFSC's North American Urban Agriculture Committee, Brown and Carter (2003) provide justification and extensive research on the ability of urban agriculture to combat food insecurity in cities in the US. Community and backyard gardens have been a source of fresh produce for America's city dwellers for decades (Meyers, 2008).

Between 2008 and 2009, 13.6% of Oregonians lived below the poverty line (US Census, 2010). In Lane County, one in three people is eligible for emergency food (FOOD for Lane County, 2009-2010). The US Department of Agriculture describes those that are food insecure as households that struggle to afford enough food (Nord & Coleman-Jensen, 2009). Brown and Carter (2003) state that one of the worst paradoxes in human history and one of the consequences of the economic structure of the current food system is hunger in the midst of plenty. Urban agriculture plays an important role in the food security movement. People with access to agricultural space in cities have the opportunities to eat and learn about fresh produce, improve community health and social and economic capacity, and revitalize neighborhood spaces with a functional asset (Brown & Carter, 2003). This research also shows that many larger community and

neighborhood gardens grow food for needy populations and/or supply fresh food to food banks (Anonia, 2011; Bradley, 2011; Donahue, 2011; Purdy, 2011).

Local Economy

Using a variety of creative strategies, there is opportunity for urban agriculture to open up doors to economic development in Eugene. Using information from the Community Planning Workshop's (CPW) Local Food Market Analysis, it is clear that certain varieties of fruits, vegetables, and grains grow in the Willamette Valley. The Local Food Market Analysis focuses on market potential and economic development opportunities: expanding the local food market will contribute to economic development by capturing more of the dollars spent on food back into the local economy. The study CPW cites in this claim is a study of farmers markets in 2005 that concluded each dollar spent at farmers markets in Iowa generated 58 cents in indirect and induced sales, and that each dollar of personal income earned at farmers markets generated an additional 47 cents in the local economy. For every one job supported by the farmers market, nearly another half time job in another local industry was created (USDA, 2010 in CPW, 2010). Local food produced and consumed locally means more money spent and more jobs retained locally.

In New York, the Manhattan Borough President uses Economic Development as one of his four main drivers for enhancing a creative food policy in the City (Stringer, 2009). He includes a recommendation for the City to develop a job incubator program in conjunction with an urban agriculture education program to connect job training with the food industry (Stringer, 2009).

On a smaller scale, there is opportunity for families to reduce the amount of money they spend on food by being involved in a community or neighborhood garden sharing program. By partnering with other neighbors, friends, and family members, a significant amount of food can be grown in a small space. According to Ted Purdy (2011) at FOOD for Lane County's Youth Farm, they grow the equivalent of $120,000 worth of produce on three acres of land (however, it is important to note that this dollar value does not take into account the cost to grow this amount of food, land lease, staff, water and inputs, and volunteer labor). If people knew more about vacant land that could be utilized in their neighborhoods, and knew more about growing techniques and what crops grow best in Eugene at certain times of the year, families could save a significant amount of money on groceries and have access to nutritious, fresh food.

In a study completed in 1991, 'economic well-being' was considered a fringe benefit of being a part of a community garden in New Jersey. The dollar value production of the garden was calculated to be $504, less $25 for average input cost, making average garden savings $475 (about $750 savings in 2010). The percentage return on direct-dollar involvement is equivalent to a $475 tax-free savings. Additionally, greater yields and dollar savings can be coaxed from the garden depending on the size of the plot, length of the growing season, and techniques used (Patel, 1991).

Surrounding Environment

Gardens provide urban residents with the opportunity to reconnect with the surrounding environment and make sites beautiful. Gardens provide children with a natural setting in an urban environment. Campaigns such as No Child Left Inside

(Chesapeake Bay Foundation, 2011) get to the heart of the fear of Nature Deficit Disorder in children: the idea that childrens' deprivation of nature is truly detrimental to a child's development (Louv, 2005). Urban agriculture projects such as gardens provide a natural outlet for children growing up in this environment. Additionally, natural and agricultural settings can work in conjunction with each other. Examples of gardens and other urban agriculture projects in cities and surrounding areas foster connections between the ecology of the landscape, the food that is being grown there, and where food waste ends up.

The Alex Wilson Community Garden in Toronto is one example of this: ecological monitoring and assessment of the naturalized area is carried out by local residents (Irvine et al, 1999). At Lane Community College in Eugene, Rosie Sweetman (2011) described a partnership between her garden and Coast Fork Willamette Watershed Council, who supports projects at the garden and creates a connection between water collection and utilizing the natural environment to actually help grow the crops. This is done through rain water collection techniques, irrigating to specific areas of the garden with reclaimed water, and strategically planting certain crops in locations in the garden based on soil moisture.

David Stucky (2011), a private landowner who has created an urban oasis at his home in Eugene, described a closed-loop system for both water and soil. By creating this system on his land, he minimizes the number of outside materials he brings into his yard, and creates his own ecological system on his property (see Chapter 4). Closing open loops and reducing the through-put of resources in cities and towns makes a large contribution to balancing global ecology (Smit & Nasr, 1992).

An extremely important environmental benefit of urban agriculture is composting, or the redirecting of food waste back into the earth. The US Environmental Protection Agency (EPA) states that "the amount of food wasted in the US is staggering" and that the US generates 34 million tons of food waste every year (EPA, 2011). Figure 2.2 shows food waste is one of the top three components of the waste stream in the US, along with plastics and paper:

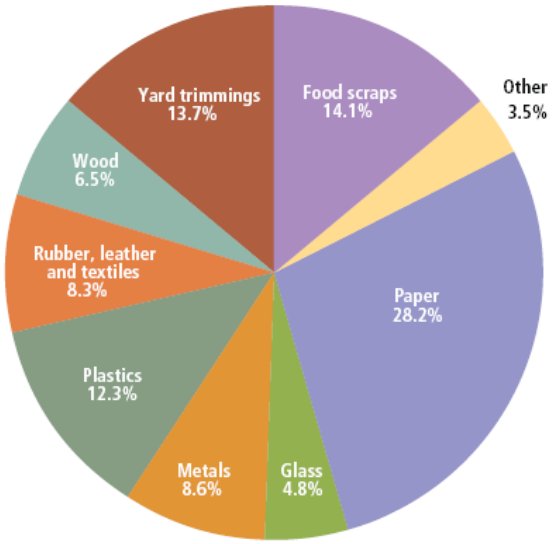

Figure 2.2. Total Municipal Solid Waste Generation (by material), 2009. 243 million tons before recycling.[2]

When food waste is left in a landfill, it quickly rots and becomes a significant source of methane—a powerful greenhouse gas with 21 times the global warming potential of carbon dioxide (EPA, 2011). Composting provides urban areas with less GHGs emitted into the atmosphere as well as healthier communities with improved soil

[2] *Source: EPA MSW Generation, Recycling, and Disposal in the United States: Facts and Figures for 2009.*

health, increased drought resistance, and a reduction in the need for supplemental water, fertilizers, and pesticides (EPA, 2011).

Public Health

More than one third of US adults and 17% of US children are obese (Center for Disease Control (CDC, 2011). From 1980 through 2008, obesity rates for adults have doubled and rates for children have tripled (CDC, 2011). With skyrocketing obesity rates in the US, there are many aspects of our collective lifestyle that need to change. The Oregon Health Authority's Public Health Division targets obesity in the state by promoting outdoor activities, with gardening listed as numer one. The CDC's recommended community strategies to combat obesity include improving the availability and access to healthful, affordable food and beverages; help to improve healthful food and beverage choice; encourage physical activity and limit sedentary activity; and, create safe communities that support physical activity (CDC, 2011).

Gardening promotes the interaction of social and physical environments and community health (Armstrong, 2000). Urban agriculture has a definite, clear role in physically showing people where their food comes from and how to eat healthy, fresh food throughout the year. Gardening is a physically demanding exercise that is commonly practiced and highly recommended (Armstrong, 2000). Other important physical aspects of gardening include reduced stress levels, blood pressure, and heart rate; improved recovery from surgery; enhanced sense of well-being; and promotion of social interaction through access to nature and green space (Barker-Reid & Faggian, n.d.). Gardeners themselves perceive the health benefits of community gardens, citing

improved nutrition, access to food, increased mental health and physical activity (Wakefield et al, 2007).

Community Engagement

> A community garden is a collective venture that entails the formation of a social network, which voluntarily brings together the collective resources of neighbors to address pressing neighborhood issues, notably urban decline and the criminal activity often associated with it. The participants' willingness to share resources is only enhanced by the social connections they make during their participation in the shared act of gardening and other activities related to the establishment and operation of the project, activities such as grant-seeking, fundraising efforts, and community cookouts, which are connected only peripherally to gardening (Glover, 2004).

As Troy Glover (2004) states above, community and neighborhood gardens are more than just "about the gardening." Gardens foster social capital, which is "the 'glue' that holds our communities together" (Hancock, 2001). Trevor Hancock (2001) describes social capital as having an informal part related to social networks, as well as a more formal part related to social development programs. Social capital is enhanced when unemployment and poverty are reduced as community members become employed, while the community involvement needed to develop and manage the project helps to build community capacity and social networks (Hancock, 2001). There have been many research studies showing the improved human connections and social interactions that are made in a community or neighborhood garden setting (Armstrong, 2000; Shinew et al, 2004; Twiss et al, 2003; Glover, 2004). Gardens serve as a place where norms of reciprocity, trust, respect, and understanding can take place (Glover, 2004).

In short, there is more to the garden than just the fruit and vegetables, even though the fruit and vegetables are a driving incentive for people to join community gardens.

Localized Food System

Localization of the food system not only reduces the distance that food travels, but also has a positive impact on the quality, freshness, and nutrition of the food (HortScience, 2009). Proponents of local food argue that a local food system produces many benefits including environmental sustainability, food security, and economic development (CPW, 2010). A community with a localized food system is more resilient to disasters, is more economically independent, and has more unique opportunities for entrepreneurs to start creative businesses based on the availability of certain foods (CPW, 2010).

In an article that locates potential resistance in the weaknesses of the global food system, Mary Hendrickson and William Heffernan (2002) describe alternatives to mass-produced food. They state that as consumers choose to eat more seasonably and locally, local communities develop their own "market signals" (Hendrickson et al, 2002). Additionally, these same consumers are the ones that tend to care most about "social and economic justice and the ecological soundness of the industrialized food system, as well as concern for small farmers and rural communities" (Hendrickson et al, 2002). This development of authentic relationships with the people who grow the food that is eaten, is a huge component of relocalization of the food system. As residents get to know their farmers and their gardeners, a personal relationship is formed; this alone keeps people coming back to the place where the food is grown. In summation, Hendrickson et al state,

"Embedding food production and consumption in a community means that eaters respect that process as much as they desire the food that they eat...Food becomes the expression of relationships that are much more than exchange relationships."

Summary

In sum, this agglomeration of benefits of urban agriculture poses significant advantages for Eugene: a city that is already starting to take advantage of its ability to grow an abundance and variety of different foods. The benefits of food security, economic development, ecological restoration, public health, community engagement, and a localized food system increase the amount of opportunity available for agriculture projects within the city limits.

CHAPTER III

METHODOLOGY

Introduction

This chapter describes the steps taken to complete the objectives of the study. The primary objectives of this project are to:

- Find out what factors make gardens successful and sustainable;
- Learn how the City can remove barriers to the creation and implementation of urban agriculture projects under the current system and zoning code; and,
- Justify the City's reasons for starting an Urban Agriculture Program.

Characteristics of the Subject Group and Interview Process

There were 19 people that participated in interviews for this project from the urban agriculture community in Eugene. The people included in the following 'subgroups' include employees, volunteers, and individuals involved in either organizational gardens or individual, personal gardens. Interviewees are broken down by the following categories in Table 3.1:

Table 3.1. Interviewee Typology

Interviewee Typology	Number of people interviewed
City Gardens	1
Community Group	4
Higher Education	2
Faith-Based	1
Individual Project	4
Nonprofit Group	7

Of those interviewed, 18 were in-person interviews and one was over the phone, based on interviewee preference. Interviews lasted 15 minutes for the shortest interview to 75 minutes for the longest—generally about 45 minutes each. Each interviewee received an email detailing the project and its purpose, in addition to the full interview guide (Appendix A). I interviewed participants at the site of their project location, with the exception of two interviews, which occurred in quiet public spaces for the convenience of the interviewee. All participants signed a waiver to be audio recorded before the interview took place. During the interview, I took handwritten notes. After the interview, I hired eight people plus myself to transcribe each of the interviews word for word. I completed the analysis based on the typed interview transcription of each participant. Two to five days after the interview took place, I sent a thank you email to the participant for their participation in the process.

I chose the participant sample based on a collaborative effort between the City's Urban Agriculture Coordinator and myself. Prior to the interviews, the Urban Agriculture Coordinator created the garden typology (see Appendix D; also described in this section) to represent the many types of gardens in Eugene. Based on this typology, the Coordinator and I compiled a list of personal contacts that fulfilled the criteria based on the typology. In an effort to achieve a balanced distribution of interview participants, I used a snowball sampling technique (or, a "referral method"): at the end of each interview, I asked the participant if he or she had any other recommendations of people I should talk to about this project. The referral method led me interview 19 total participants.

Successful and Sustainable Garden Projects

A *successful* garden is a subjective term. The gardens discussed in the interviews ranged from nascent stages to developed, permanent places. The American Community Gardening Association (ACGA) uses the following criteria to determine the success of community garden spaces:

- Catalyze neighborhood and community development;
- Stimulate social interaction;
- Encourage self-reliance;
- Beautify neighborhoods;
- Produce nutritious food;
- Reduce family food budgets;
- Conserve resources; and,
- Create opportunities for recreation, exercise, therapy, and education (ACGA, n.d.).

A *sustainable* garden is one that has been able to endure over time. In ecology, the word describes biological systems that remain diverse and productive over time. In many of the same ways, gardens are able to remain sustainable if they have a balance of physical inputs, leadership, community engagement, and funding—essentially, all of the areas discussed in Areas for Capacity Building (see Chapter 4 Findings). For the sake of this project, a sustainable garden is most likely to be a successful garden, as it has a balance consistent with the mission of the organization or individual to which it belongs.

Interview Guide Design

To achieve the research objectives of this study, I created a thorough interview guide comprising six identified Areas for Capacity Building (Areas). In January of 2011, I attended a meeting with the City of Eugene Urban Agriculture and Neighborhood Services Programs, where we developed the Areas based on Neighborhood Services' expertise (see Appendix C for meeting notes). We identified these Areas to better understand how urban agriculture projects could be a barrier or a solution to identified 'problems' in neighborhoods, recognizing that certain neighborhoods in Eugene use urban agriculture projects to build community. This joint meeting served as a starting point in thinking about how (or if) Neighborhood Services could promote agriculture projects in Strategic Neighborhood Action Plans (SNAPs). In this meeting, we identified six Areas for Capacity Building include:

1. Planning, Development, Construction, and Operations;
2. Volunteers;
3. Garden Promotion, Outreach, and Partnerships;
4. Funding Sources;
5. Organizational Viability; and,
6. Role of Neighborhood Associations

These Areas, along with questions asked during this particular meeting, formed the first draft of the interview guide. Using that draft, the Urban Agriculture Coordinator and I met to discuss additional questions that could be asked in each of the categories. In the final guide, we included a seventh category, which asks the participants to rank the

original six categories in order of importance for their project (Appendix A). This is discussed in more detail in the Findings section.

Garden Typologies

I grouped the gardens into a matrix typology consisting of the following types, developed by the Urban Agriculture Coordinator based on her experiences in the field (Appendix D):

- **Private Property: Residential Small Scale Gardens (<500 square feet):** This garden size can be managed by one or two people and serves primarily their own needs. These types of gardens are found in the planting strips, front yards, back yards, and as individual rented plots within a community garden.

  Types/Examples:

  - Container gardens
  - Front and back yard gardens
- **Private Property: Residential Medium Scale Gardens (500-5,000 square feet):** This garden size can be managed by a small group of people and can serve a wide variety of needs as it will produce more food. These types of gardens are found on private property and can be located in residential neighborhoods and on other privately owned property such as churches, businesses, and private schools.

  Types/Examples:

  - Shared private gardens
  - Combined backyard spaces
- **Private Property: Residential Large Scale Gardens (>5,000 square feet):** This garden size is managed by large groups of people and can produce a large

quantity of food. They are primarily run by local food agencies with the purpose of growing fresh organic food to supplement the diets of persons with food insecurity and to teach the necessary skills of growing and cooking food to targeted populations and volunteers.

Types/Examples:

- Gardens affiliated with nonprofit groups
- Church, school, and higher education gardens

- **Public Property: Small to Medium Scale Gardens (<5,000 square feet):** This garden size can be managed by small groups of people and primarily serves the needs of the surrounding neighborhood. These types of gardens are typically underutilized city right of way and utility easements.

  Types/Examples:

  - Right of Way Gardens – Planting strip gardens, box gardens
  - School gardens on public school property (K-12)
  - Neighborhood gardens

- **Public Property: Large Scale Gardens (>5,000 square feet):** This garden size can be managed by a large group of people, can serve a wide variety of needs and will produce more food. These types of gardens are found on public property.

  Types/Examples:

  - Large Community Garden Spaces
  - Other neighborhood gardens

This typology is useful to the City staff writing the Urban Agriculture Manual, the people that will ultimately use the Manual, and myself, the researcher. This typology provides an overview of the scope of different urban agriculture projects happening in the

City. It also gives residents an understanding of how they might be able to implement a project of their own at a particular level and scope, based on the land they have to work with and an understanding of the different inputs that go into creating a garden.

Table 3.2 depicts how each of the interview participants fit into this typology. There was one participant that did not fit into this typology based on the type of project the person was involved in. For this reason, there are only 18 participants total listed in the typology.

Table 3.2. Participant Typology

	Small (<500 sq ft)	Medium (500 - 5,000 sq ft)	Large(>5,000 sq ft)
Private	3	4	4
Public	3		4

Qualitative Data Analysis

In order to analyze the qualitative information collected from the interviews, I created a series of matrices that grouped together answers to each question related to the interview guide's Areas for Capacity Building. This is depicted in Table 3.3:

Table 3.3: Sample Qualitative Analysis Tool #1

Capacity Building ID #	Respondent #	Response	Notes
1a.	1		
1b	2		
1c.	3		
1d.	4		
Etc.	Etc.		

Based on the interview transcriptions, I grouped key themes that emerged from each conversation with the interview participants. These themes included recurring words and phrases that multiple participants used during the process. For example, when analyzing comments about Planning, Development, Construction, and Operations, I combined similar statements together to create overarching themes (in this particular 'Area,' participants explained that 'logistics' was important to this category). Rather than completing frequency counts, I highlighted one or two important quotes that emerged for each Area for Capacity Building. I did this to create a narrative in the Findings chapter that flows well and gives an intimate description and representation of what life is like in each of the gardeners' experiences.

Additionally, I counted the frequency of interview participants' rankings of each area for capacity building. Based on interviewees responses for which Areas for Capacity Building are/are not most important, I created a list of 10 criteria that make gardens 'successful' and 'sustainable' (see Chapter 4). Table 3.4 shows the frequency with which people responded to each criterion:

Table 3.4. Sample Qualitative Analysis Tool #2

Criteria	Count	Frequency
Criterion 1	5	Medium
Criterion 2	5	
Criterion 3	5	
Criterion 4	4	
Criterion 5	4	
Criterion 6	4	
Criterion 7	3	Low
Criterion 8	1	
Criterion 9	1	
Criterion 10	0	

Finally, I used economic models as the unit of analysis when analyzing the findings received from the interview process. Economic models provide the researcher and readers of this report with a consistent, familiar metric to assess the justification for the financial investment to the City's Urban Agriculture Program.

Summary

This methodology creates a step-by-step process that leads directly into the Findings and Analysis chapters of this document. From there, conclusions and recommendations are made to reflect the research questions described in the Introduction.

CHAPTER IV

FINDINGS

Introduction

This section presents findings from the interviews with urban agriculture experts in Eugene. This chapter is divided into the following sections:

- Factors that make urban gardens successful and sustainable
- Frequency count of the most important garden criteria
- Urban gardens in Eugene's urban agriculture 'scene'

This research is deductive, in that I began with a theory and then gathered evidence to build upon that theory. My theory was that there are barriers to creating urban gardens. In order to see if this was correct, I interviewed participants to see whether or not they agreed with this statement, and to see what sort of factors make a garden successful and sustainable. Using specified groups of questions lumped into Areas for Capacity Building (the interview guide), I worked to see how these areas could be changed or tweaked to lessen the barriers to grow food, because I assume that growing local food in neighborhoods is a good thing.

This research uses 19 in-depth, personal interviews with gardening experts in Eugene to explore the factors that make urban agriculture projects successful and sustainable based on specific areas for capacity building identified by myself and City staff. Using qualitative analysis, I found that each identified area for capacity building could be perceived as a barrier to establishing garden space. 'Successful' and 'sustainable' gardens confront multiple barriers to garden implementation and remain diverse and productive over time. The results of this study provide insight into how and

why the City is choosing to remove barriers to people who grow their own food, and justification for the need for the City's Urban Agriculture Program. Information gathered from this section will be summarized in the conclusion with further recommendations.

Factors That Make an Urban Garden Successful and Sustainable

I identified 10 factors that make a neighborhood garden successful and sustainable based on the interviews with participants. Using the interview guide to gather answers for questions pertaining to the Areas for Capacity Building (Areas), the 10 factors listed below relate directly to the Areas and also encompass overarching themes that were stated during the participant interviews. Definitions for successful and sustainable gardens are provided in Chapter 3 and are recapped here:

- *Successful* neighborhood gardens catalyze neighborhood and community development, stimulate social interaction, encourage self-reliance, beautify neighborhoods, produce nutritious food, reduce family food budgets, conserve resources, and create opportunities for recreation, exercise, therapy, and education (ACGA, n.d.).
- S*ustainable* neighborhood gardens are able to remain diverse and productive over time. This involves balancing the 10 factors listed below.

Below are eight essential characteristics of successful, sustainable gardens in Eugene, plus two additional categories – the role of neighborhood associations and the role of policy in urban agriculture. These categories can be seen as both barriers and opportunities, depending on the stage in which the garden is at (beginning vs. more developed stage):

1. **Planning**: The initial stages of garden development occur before the garden is built or before the planting season starts. This involves finding space, figuring out access to sunlight, water, and tools, as well as figuring out where plants should be planted.
2. **Development and Construction**: Garden development and construction occurs when capital improvements are being made in the garden, for example a tool shed is built, a fence is constructed, or some other structure becomes a part of the space.
3. **Operations**: Operations are the physical inputs (physical labor, volunteer and site coordination) that keep the garden going.
4. **Management (Organizational Viability)**: Management involves organizing garden activities to get people together to accomplish desired goals and objectives, as well as behind-the-scenes activities that are necessary to make the garden function.
5. **Volunteers**: Volunteers are unpaid people that come to work at the garden for school, work, self-satisfaction, barter, etc.
6. **Promotion and Outreach**: Garden promotion and outreach encourages the progress or growth of the garden through educational campaigns, advertising, and word-of-mouth.
7. **Partnerships**: Partnerships establish formal and informal connections with outside organizations (public, private, and nonprofit) to give the garden legitimacy, or credibility, in the neighborhood.

8. **Funding Sources**: Funding sources are found by staff or volunteers to secure money for project and program management.
9. **Neighborhood Associations**: Each neighborhood in Eugene has a Neighborhood Association (NA) that gives residents the opportunity to have a voice in decisions that affect the livability of the neighborhood. NAs provide a way to partner with other neighborhoods, the City, and other organizations to develop solutions to shared problems (City of Eugene, 2011). NAs are able to provide support to community groups looking to apply for Neighborhood Matching Grants, and could assist in creating necessary connections for completing garden projects.
10. **Policies**: Existing policies such as City zoning codes and aesthetic rules and regulations of neighborhoods can be viewed as a barrier to creating new garden space in Eugene.

When there is a balance of these characteristics, a garden has reached a point of success. The point of balance is different for every garden. With each of these categories defined, the Analysis section that follows discusses direct findings from interview participants.

Planning

Planning for garden projects involves many inputs to get projects started, both for community gardens and neighborhood gardens. Important themes in planning for projects are **logistics**, through creation of a site plan or map; **communication** and **collaboration** between volunteers, partner agencies, host agencies, workers at the site, etc.; **experimentation** with different plants and animals in different places; **instruction**, when

teaching individuals or organizations how to garden; **lobbying**, when working within a top-down organization; and, **design considerations**, such as starting small and expanding as progress is made or utilizing space that is south-facing to get full access to the sun. Three of the respondents were a part of groups that received a City Neighborhood Matching Grant, which served as a catalyst for the planning process in their affiliated projects (Anonia, 2011; Scott, 2011; Wellborn, 2011). Projects that were started with these neighborhood grants, such as the FOOD for Lane County Churchill Garden and the Common Ground Garden, had stringent rules to follow that required them to provide the City with specific planning information regarding how implementation of their project would take place. In her interview, Robin Scott with the Common Ground Garden stated:

> The grant really forces you to go through the steps necessary [to plan for the project] – they [City of Eugene] want you to circulate a neighborhood petition to make sure neighbors are aware and interested in the project, they want to know about your sustainability plan, how you're going to recruit volunteers, how you're going to manage after the grant ends, how are you going to bring in money to support the project... so, what is the plan actually, map it out, what about utilities… we had to answer all of those questions over a period of a couple months. And so that's where a lot of our organization came from because we had to put it together for the grant application (Scott, 2011).

Lack of planning for garden space could be perceived as a barrier for some, but also seems to depend on the gardener's ultimate goal for the space she or he is gardening. Merry Bradley (GrassRoots Garden) completes anywhere from five or six four- to six-hour garden mapping sessions with volunteers (Bradley, 2011), while John Flannery at Maitreya EcoVillage has a brief meeting with garden participants a few weeks before the season starts to determine what people want to grow for the season (Bolman, 2011). On

average, those working for production purposes that have a specified end goal in sight tend to do more planning for the growing season. Often these are gardens that belong to an organization or have an organizational component to them (FOOD for Lane County gardens and urban farm, Lane Community College Education Garden, Common Ground Garden, Edgewood Community Garden).

Development and Construction

The same respondents that discussed receiving a Neighborhood Matching Grant to plan for their gardens also described the grant as giving them the opportunity to build capital improvements in the space, such as irrigation lines, garden shed, and fence at the Churchill Community Garden (Anonia, 2011), and a worm bin, icosa hut (tool shed), and alter-abled access garden beds at the Common Ground Garden (Scott, 2011). Without the Neighborhood Matching Grant, the garden would have most likely been built, but the capital improvements that came with the possibilities provided through the grant process would not have been constructed.

Operations

When asked about the physical requirements necessary to pull off their projects, every interview respondent except for one noted the obviousness of needing volunteer labor and physical inputs to create effective garden systems that function on their own. The number of volunteers that come to work parties at the garden vary for groups, ranging from three to six people to build a garden for a private homeowner (Anthony, 2011) to work parties twice per week on a college campus, with anywhere between six

and twenty students for three to four hours at a time (Sweetman, 2011). Inputs for individual gardens vary depending on the size of the project—one participant listed working two hours per day in the spring time (Fischer, 2011) while another listed the majority of the work gets done in about six or seven hours over the weekend (Donahue, 2011).

Five participants noted that the work they do goes beyond the physical aspects of creating a physical garden space: "you've got to be able to conceptualize what needs to be done, and be able to articulate that clearly to someone else, that has no experience… So, it's not even so much the physical what you need to do, it's more mental, psychological, emotional, what you need to do" (Bradley, 2011). These participants noted voluntary leadership during work parties as essential in making the garden function.

Out of the 19 interviewees, five listed technical inputs such as mulching, composting, and water catchment and irrigation techniques as essential in continuing operations at the garden. One individual landowner in particular stressed the importance of creating closed-loop soil and water systems in his home garden: "…we've got kind of a closed loop soil thing going on now in addition to the water thing. And… that's… my goal. We keep trying to make these little cycles come back here… so we're bringing less in and shipping less out" (Stucky, 2011). Interviewees also stressed the importance of volunteers, partners, and a core group of participants as necessary in sustaining garden operations.

Management

In order to be organizationally viable, gardens with formal arrangements are often utilized under legal circumstances. Table 4.1shows the ten interviewees that use land other than their own for communal garden space:

Table 4.1. Garden Space Sharing

Gardener	Owner of the Space
School Garden Project	Schools
Huerto de la Familia	Lease space from FOOD for Lane County, City of Eugene
Sherry Wellborn	The Reach Center
Maitreya EcoVillage	Robert Bolman
ECOS	Varying farmers
Common Ground Garden	City of Eugene
Churchill Garden	4J School District
The Youth Farm	Springfield School District
GrassRoots Garden	St. Thomas Episcopal Church
Victory Gardens	Various donated space (private and nonprofit organizations)

Five of the organizations have official contractual relationships stating a lease on the land and the property with specified permitting guidelines. The other five organizations as well as some of the individual landowners that were interviewed explained an informal contractual relationship that exists between themselves or their organization and others that either use their land or lease the land. There is a large mix of shared versus individual space allocated for plots. Of the 18 interviewees that answered this question, 17 of them share their physical garden space in some way or another—either with volunteers, neighbors, or other organizations. The only organization that does not intentionally share plots are through the City's Community Gardens Program. However, Rob Hallett, the Program Supervisor, explained that there are large plots

available that people can choose to work together (Hallett, 2011) in certain circumstances, depending on the garden. Even in this structured model, there is room for communal garden space.

Managing also involves fiscal responsibility for neighborhood gardens. For those affiliated with a nonprofit group, either an Executive Director or Treasurer of the organization takes care of money. For more grassroots groups such as Common Ground, a core group of established leaders fund projects and then reimburse themselves with the Matching Grant money (Scott, 2011). For any of these groups, clear spreadsheets and budgets available to the public are necessary to show transparency in the organization.

Volunteers

The majority of questions regarding volunteer involvement were answered by organizational (rather than individual) garden representatives, with the exception of a few private landowners that partner with organizations on specific projects (Fischer, 2011). A few key themes reflected in this discussion were **enthusiasm**, **organization**, **leadership**, **community**, and **communication**. Volunteers that come to help in the gardens come from a variety of organizations in Eugene. There is much student involvement from University of Oregon, Lane Community College, many of the K-12 schools, and alternative schools in the region. There is also involvement from various Neighborhood Associations, faith groups, corporations, and small businesses in town.

Interviewees that work with school groups do not have a difficult time maintaining a volunteer base because many students need to fulfill hours in order to graduate or complete class requirements. However, because class schedules change and

volunteering is irregular, gardening knowledge is often inconsistent from one volunteer group to another. Therefore, it is necessary to incentivize volunteers to come to the garden. The organizations in the research project incentivize people in different ways:

- Providing hot food and snacks (Miller, 2011)
- Encouraging volunteers to take breaks when needed (Anonia, 2011)
- Making sure volunteers know that their work is appreciated (Bradley, 2011)
- Arranging logistical aspects of the work day that could make the volunteers' life easier (i.e. carpooling arrangements, child care while working, etc.) (Miller, 2011)
- Giving people the produce they are growing (Donahue, 2011)
- Letting volunteers take on leadership roles that they are passionate about (Bradley, 2011)
- Providing people with detailed feedback on garden operations, while providing support and purpose for their being there (Sweetman, 2011)
- Encouraging people to come and visit the garden space for alternative uses—making volunteers feel welcome even if they are not working (Scott, 2011)

Although many volunteers that are recruited for garden projects generally do not have experience working in a garden and are learning for the sake of replicating projects in their own yards, eight of the garden leaders stated that the main way volunteers organize themselves is through self-selection. That is, volunteers recognize their strengths and weaknesses in a group, ensure that everyone is doing a task that they are happy with, and let the work day flow from there. The GrassRoots Garden in particular emphasizes a "broad-based education model," which allows the spread of teaching through the garden,

by all of the volunteers (Bradley, 2011). The garden leaders do this to empower volunteers to take ownership over their position in the garden and their knowledge base.

Promotion and Outreach

The participants in this study listed several ways they work to promote their garden projects and reach out to community members. For example, Friendly Neighborhood Farmers started out as a group of like-minded citizens that enjoyed working outside and sharing chicken tips and advice online. When their shared website "went viral" (Scott, 2011) the leaders of the website realized there was a need for a public garden in their neighborhood. Using their online sources, they informed the public about their garden projects. They informed others that were not online through neighborhood fliers, posters on mailboxes, and going door to door.

The Edgewood Garden uses a mass email address list to inform volunteers about work parties and planning meetings. The garden leader encourages everyone to be involved by including short press releases in the neighborhood newsletter that is sent to every neighbor (Hebert, 2011). Other gardens promote their projects through word of mouth and by attending local festivals such as the Eugene Home Show, where unique urban agriculture projects are showcased (Fischer, 2011). Many of the interview participants explained that they experiment with social media websites, and that the majority of their promotion comes through volunteer retention by creating permanent relationships.

Partnerships

Every person interviewed in this study listed at least one other interview participant as a partner who helps to maintain or complete the work in their garden project. In essence, this research project created a "closed loop" of its own through the snowball sampling technique. One important point that came up repeatedly when asked about partnerships was that once a year Jared Pruch, Executive Director of the School Garden Project (SGP), collaborates with as many people that are involved in urban and rural agriculture projects as possible to hold a meeting in the winter (before the season starts) to discuss current projects, current problems, and current needs on behalf of the group so that everyone involved in similar projects can share ideas and resources. While all of the projects are slightly different, this collaborative yearly model meeting serves as a vantage point for all those involved—participants can choose whether or not to be a part of this exercise.

Other key partnerships are formed and continue through maintenance of the garden site. While capital improvements to the garden are viewed as beneficial, maintenance of new structures is just as important to keep the space a place that volunteers, staff, and visitors want to come back to. For this reason, those that have site improvements at their gardens have created extensive partnerships with the existing community and other organizations to help keep order. The City of Eugene Community Gardens program is a particularly good example of this because they recently received budget cuts "across the board" (Hallett, 2011). Rob Hallett and his staff have partnered with the Lane County Sheriff to get jail crews to come out and help the Parks and Open Space Division maintain the City's six community gardens.

Funding Sources

Seven of the community projects received initial funding from grant funders—these include Heifer International (Cantril, 2011), City of Eugene Neighborhood Matching Grant Program (Anonia, 2011; Scott, 2011; Wellborn, 2011), and federal grant funding through the Edible City Resource Manual (Keeler, 2011), among others. Of the individuals that were interviewed, five started their projects using personal funds, but these participants have unique ways of utilizing city resources and partnerships to maximize the amount of vegetables that are able to be grown in their space by saving seeds and composting, as well as receiving donations of plants or other necessary inputs through nonprofit organizations, businesses, and the City (i.e. leaves, woodchips).

Organized gardens affiliated with nonprofit organizations stressed the importance of finding funding from year to year to maintain operations and continue activities. Current funding is mainly obtained through grants and donations from individuals and local businesses. Other gardens, such as the Urban Farm, Lane County Community College Learning Garden, and the City Community Gardens Program are funded through set user (or student) fees. Prior to receiving a Neighborhood Matching Grant, the Common Ground Garden could have been funded through a community effort with the support of volunteer labor and donations. Receiving the grant greatly increased the operations on site and allowed them to create many more structures and facilities than they would have been able to do without receiving the funds. Similarly, the Edgewood Community Garden is fully a grassroots effort, with minimal money spent on inputs to

the garden. When asked how they received initial start-up costs, Edgewood Garden founder Debbie Hebert explained:

> We're just not costing anything at this point. And I have a lot of seeds, I'm a seed saver… there's… a big event… where we can get more free seeds and trees and things out at Lane Community College. [That's being sponsored by Eugene Permaculture Group, and Charlotte's real involved in organizing it, from the Victory Gardens.] So we [the Edgewood Garden] will be going out there and getting more seeds. People were real excited to hear about that. So it's just sharing information (Hebert, 2011).

Neighborhood Associations

When asked about the role Neighborhood Associations (NAs) could have in implementing urban gardens, two participants stated that they had worked directly with their respective NAs specifically for signing off on the Neighborhood Matching Grant (the other interviewee that received a matching grant related to urban agriculture was not interviewed for that particular project). Three other interviewees described presentations they gave to a few of the NAs to receive support or buy-in for their project. Generally, interviewees did not discuss any additional benefits received from NAs in implementing their urban agriculture projects. While viewed as a possible benefit, NAs are generally thought of on the periphery and are pulled into projects only when needed.

However, as both an individual home gardener and an organizer for an organizational garden, Anne Donahue stated that her private right-of-way garden got started without any help or support from the NA, but when the Neighborhood Leaders Council on Sustainability (NLC) (part of the NA) put together a "Green Bike Tour," Donahue was asked to be house stop along the route. She stated that this was "an opportunity to share with my neighbors the benefits of having a front and side yard

garden" (Donahue, 2011). There were 30 neighbors on bikes looking at the garden, the compost site, and her chickens. Then, when her neighbor on the NLC suggested starting a neighborhood garden across the street from her house, the NA provided the gardeners with an outlet to share new developments, as well as city staff support to help obtain City Matching Grants for new the new garden. Donahue stated that she sees the NA "as a vehicle to help connect everyone in a much larger neighborhood area to resources available through the City" (Donahue, 2011). While others had not worked as closely with their NAs, there is the possibility of providing this additional capacity aspect through this City department.

Existing Policies

Two interview participants stressed the importance of policy as the guiding light in creating more opportunity for urban agriculture in the city. Harper Keeler, from University of Oregon's Urban Farm states:

> Policy should be the big one, if you're setting up urban ag[riculture] stuff and doing these alternative uses within the urban fabric… policy's huge in terms of what you're allowed to do… I think there should [be] nonprofits or garden groups… [that have] more interaction [with] planners... and… policy[makers]. I'm not sure how that all works, but that's just something that came to mind. I don't have a lot of the concerns that other groups have because I'm here [at the UO Urban Farm], we essentially own the land, it's our land, that's a huge thing. And acquisition is massive. That's the most important, because community gardens and stuff, their biggest challenge is longevity. You know, the Courthouse is wonderful and is nationally recognized, and technically has a year left on its lease, and then they could plow it under (Keeler, 2011).

Earlier in the interview Harper (2011) stated, “There’s a misconception that gardens can just move, you can get up and we’ll just give you some soil and some more space. But we’ve been working this soil for 35 years, and you can’t move it. You can kill it and start over, but you can’t move it.” Policies regarding solutions to lessening barriers for constructing gardens space are further discussed in Chapter 6: Conclusion.

Ranking of Garden Criteria

At the end of each interview, respondents were asked to rank the importance of each Area for Capacity Building. Of the 14 community groups (excluding the five individuals) 10 answered this question. Table 4.2 depicts the breakdown of the *most* important Areas for Capacity Building (many interviewees chose more than one category when asked) with its frequency ranking:

Table 4.2. Criteria for Successful and Sustainable Gardens

Criteria	Count	Frequency
Criterion 1: Planning	5	Medium
Criterion 2: Development and Construction	5	
Criterion 3: Volunteers	5	
Criterion 4: Operations	4	
Criterion 5: Partnerships	4	
Criterion 6: Funding	4	
Criterion 7: Promotion and Outreach	3	Low
Criterion 8: Management (Organizational Viability)	1	
Criterion 9: Policies	1	
Criterion 10: Role of Neighborhood Associations	0	

The similar frequencies of Criteria 1 – 6 show a combination of many factors that make a successful and sustainable garden. There is a definite balance of these criteria that

must be reached in order to define a garden as 'successful' or 'sustainable'. Interestingly, there was not one factor that had a frequency ranking of "high".

Urban Gardens in Eugene's Urban Agriculture Scene

Participants were also asked to discuss how their project plays into Eugene's 'urban agriculture scene.' The main ways people perceived their gardens were through: **teaching**, **collaborating** with partner organizations, **modeling** (serving as a 'neighborhood model' and an 'educational model' for higher education), **necessity** (the need to grow our own food), and making an **economic impact**. Of those themes, the most important category was **teaching**. Six people listed this as their primary role in Eugene's urban agriculture scene. Additionally, others listed teaching and education as very important components of their projects, but did not list it as a main way their project played into the 'scene.' Jared Pruch, from the School Garden Project states:

> I think that our piece is teaching the kids about how to grow food, and incorporating gardens into school grounds, for reasons of education, and for reasons of student health. I think kids are way more likely to become gardeners as adults if they have these experiences as kids and get to get their hands dirty and taste food that they've grown themselves, and have that really positive association with a garden space. And you know, there's so few, there are dwindling opportunities for kids to be outdoors during their regularly scheduled school day. And teachers that we talk to really value that, that role that we play of getting the kids outdoors. It's still educational, what we're doing. But it's just happening in an outdoor setting and a hands-on setting, and teachers really value that. So I guess we're, you know, we're growing the next generation of urban agriculturalists (Pruch, 2011).

Ted Purdy (2011) from the FOOD for Lane County Urban Farm: "…besides teaching kids and volunteers sort of gardening skills, it's really also a pretty fertile place

to teach people how to grow a lot of food year round. You know, it takes years to not just learn how to do this stuff on a certain scale, but to actually know how to do it and produce over the course of a year."

Rosie Sweetman (2011) from Lane Community College (LCC) Educational Garden:

> Currently it [the garden] is not playing a huge role in the wider community, other than just if you're a student and you get involved in a class that wants you to be out there. But… because LCC is a community college and it incorporates all kinds of people out there, we could be a great model for either younger people that are interested in agriculture coming in and learning… or [for] farmers that are already in the process and need to come get a little touch up on some classes, whether it be business or whatever, with their farm. I think that Lane has this potential to serve the community through urban agriculture and create a program that will then benefit the rest of the community.

Merry Bradley (2011) from FOOD for Lane County GrassRoots Garden:

> So, places like Grassroots Garden, where usable is land available, where people can come together and by their efforts produce way more than they possibly would themselves... here, we can develop the soil, we can have very good spatial planning, we can maximize everybody's efforts because when people come together, it's kind of like their energy snowballs… people can be way more productive… like the land here, not this year but last year, we grew 65,000 pounds of food, on two and a half acres. With very little orchard set... that is highly productive for a farm… These sort of scenarios are… a paradigm for the future… It's also in one human lifetime, most people forgot how to grow food.

CHAPTER V

ANALYSIS

Introduction

This section presents a policy analysis based on the interview findings and the application of economic principles combined with City practices. This chapter is divided into the following sections:

- Removing Barriers and Creating Opportunities for Gardens
    - Economic Efficiency Improvements
- Justifying Eugene's Urban Agriculture Program

Removing Barriers and Creating Opportunities for Urban Gardens

Under the Community Garden Program, housed in Parks and Open Space, participants pay $100 per year for a garden plot as large as 20' x 30' (500-600 ft^2). There are roughly 300 plots in this program. As discussed in the Introduction, the price per plot in 2011 has gone up from $60 in previous years (a 67 percent jump in price) because of budget cuts and to meet the costs associated to run the program. Despite the price increase, there is still a waiting list to receive a plot at the garden. This year, in 2011, the waiting list has about 70 people on it. When plot prices were lower, the waiting list had over 100 people on it (Hallett, 2011). Clearly, there is consumer demand for garden space in the City.

What would happen if the City chose to increase the price per plot to over $100 per year? At $100 per year, the Parks and Open Space Program breaks even on the Community Garden Program. However, if the price per plot increases for people who can

afford it, the surplus money can be used to offer lower prices or discounts on City garden plots to families who have children receiving free or reduced school lunches, or families on Temporary Assistance to Needy Families (TANF, also known as the Food Stamp Program) or the Oregon Health Plan.

An alternative to the Community Garden Program is the City's Urban Agriculture Program, housed in the Waste Prevention and Green Building Program. In an effort to remove barriers to residents wanting to start an individual or neighborhood garden, the City is creating an Urban Agriculture Manual for residents which will provide the reader with the following information:

- How to select and design a site for an urban agriculture project;
- Clarity of City zoning and codes;
- Community models for gardens of varying sizes;
- Typical use agreements and gaining approval;
- Accessing free and low cost resources locally; and,
- Key capacity components for successful projects (City of Eugene, 2011).

This model does not provide plots to residents, but it is intended to give enthusiastic residents the know-how to make garden space on their own, using their own resources.

Why does the City provide these services to residents? There are three reasons why a government intervenes in the economy:

1. To improve economic efficiency by correcting market failures;
2. To pursue social values of fairness, or equity, by altering market outcomes; and,

3. To pursue other social values by mandating the consumption of some goods, and prohibiting the consumption of other goods (Stiglitz & Walsh, 2002).

The following analysis uses the first two reasons listed above to discuss the City's role in intervening in market economy.

Economic Efficiency Improvements

There are five sources of market failure in the economy: imperfect competition, imperfect information, externalities, public goods, and missing markets (Stiglitz & Walsh, 2002). The three market failures that can be argued for City implementation and promotion of garden space are positive externalities, public goods, and imperfect information.

Positive Externalities

A number of positive externalities are associated with community garden space, as evidenced in the Literature Review and through my research with interview participants. Positive externalities that stem from community and neighborhood garden space are: added food security for a neighborhood, as well as benefits to the local economy, the surrounding environment, public health, community and social atmosphere, and a more localized food system.

Public Goods

While some would claim that community or neighborhood garden space is a public good, an economist would not necessarily agree. A public good is defined as non-rival and non-excludable. *Nonrivalry* occurs when the consumption or enjoyment of a public good by one individual does not subtract from that of other individuals;

nonexcludability is when an individual cannot be excluded or kept from enjoying the benefits of a public good. The City's community garden model is both rival and excludable, meaning that it is in fact a *private* good. For example, a plot holder could have plants that sprawl out across other people's plots, making the other plots less desirable to those plot holders (rival) and, those who cannot afford a plot are unable to garden at the community garden (excludable).

However, the neighborhood garden model proposed through the Urban Agriculture Manual presents us with an idealized space for nonrivalry and nonexcludability by its very definition. Two neighborhood gardens in Eugene that are connecting with more members of the community are the Common Ground Garden and the Edgewood Community Garden. These garden models are, by definition, nonrival and nonexcludable in that the consumption or enjoyment of the good by one person does not affect the enjoyment of another person (nonrival) and, anyone can come to the garden to help, work, or enjoy the atmosphere (nonexcludable). This is not to say that factors of rivalry or excludability do not change when the garden becomes congested—there are, after all, a limited number of vegetables that can be produced in the amount of space designated for garden—however, both Robin Scott (Common Ground Garden Coordinator) and Debbie Hebert (Edgewood Garden Coordinator) do not perceive their garden space to be "about the vegetables" (Scott, 2011; Hebert, 2011). Rather, the space is transformed into a community gathering area where neighbors have the opportunity to get to know one another in a safe place, working together and having fun.

There are positive and negative aspects to the two types of gardens discussed in this research. Rob Hallett, City of Eugene Community Gardens Program Supervisor,

explains that the Community Gardens bring in a "different mix" of people and not all of the people get along (Hallett, 2011). However, there are many examples of those that have rented City-owned Community Garden plots and express a definite sense of community and belonging when they have friends that also rent space at the garden (Korin, 2011). Both examples of the Neighborhood Garden model listed above seem very community oriented and more about the social capital that is built at the garden space. In this garden model certain negative aspects were listed during the initial phases of garden construction (Scott, 2011; Hebert, 2011). One important aspect of this analysis is that the City's Community Gardens program began in 1978 whereas the Neighborhood Gardens are recent developments that were constructed in the mid-2000s. It is possible that additional benefits and obstacles of neighborhood gardening will come to the fore as people neighbors experiment with different models to find which works best for each community.

Finally, there are many different types of gardeners that live in the region. Some may have a preference for a more private space; others might prefer a public space. It would be difficult to say which type of garden model is *better* in Eugene when both sets of gardens offer different ways of growing vegetables with other people.

Imperfect Information

The City has recognized a need and demand for more garden space. However, because many residents are not necessarily aware of the responsibility they have to uphold and meet community land use requirements for creating individual and neighborhood plots, there is an information gap that needs to be filled. This last, crucial market failure requires government intervention because the City has access to many

resources that the general public does not necessarily know about. Providing residents access to the Urban Agriculture Manual and to the Urban Agriculture Coordinator, people can become knowledgeable of City policies while finding out detailed information about the opportunities that exist to create more garden space in the City. While the Urban Agriculture Program will be able to provide information on utilization of public lands, the Manual will also serve as a reference for suggestions on how to talk to residents with vacant lands that might be usable for garden plots.

Pursuit of Fairness and Equity

The City's Community Garden user fee ($100/year) could exclude lower income populations from having an individual plot, inherent in the fact that this model requires a user fee that some populations might not be able to pay. Other organizations such as Huerto de la Familia and FOOD for Lane County (FFLC) give families that want individual garden plots the option of having garden space for a fee on a sliding scale (based on income) in the FFLC Churchill Community Garden, FFLC Youth Farm, or City-owned Skinner-City Farm. However, this is limited by space. Huerto Director Sarah Cantril stated that if her organization had more space, they would fill the need immediately; there are 20 Latino families on the waiting list for Huerto that want an individual garden plot (Cantril, 2011). Important to note is that these organizations subsidize their garden operations through donations and grants. The City also subsidizes the operation of the Community Gardens, but there are more gardens, more administrative and reporting requirements, higher paid staff (which include salary and benefits) and the cost of utilities.

The implementation of the Urban Agriculture Program gives neighborhoods and community members the opportunity to improve access to locally grown foods, in an attempt to include as many neighbors as possible in the process. This model is truly up to the local neighbors that are involved in garden projects. Rather than taking a top-down approach, the City is advocating for neighborhoods to take control of their community resources and come together to provide equal access in spaces where people can garden together. In a difficult economic time with significant budget cuts, it will be up to the citizens to make this happen.

Justifying Eugene's Urban Agriculture Program

Expanding on the discussion of public goods, another factor that must be taken into account when justifying the City's Urban Agriculture Program is understanding the Tiebout model, which describes that when public goods are provided at the local level by cities and towns, competition arises because individuals can "vote with their feet" (Gruber, 2007). This means that if people do not like the level of public goods provided in one town, they can move to the next town over without much disruption in their lives.

Eugene, "A Great City for the Arts and Outdoors" is, by its very own definition, a proponent of the outdoors and open space. Without providing services such as options for community and neighborhood gardens for residents, the City would not be as appealing to residents, who could move to another town and get these benefits that they are looking for. Economists Ed Whitelaw and Ernie Niemi attribute such benefits to the "second paycheck," derived from the "non-monetary perquisites of livability" (Eugene Register Guard, 2007). They explain that consumption amenities can contribute to a consumers'

well-being, making them economically important in influencing location decisions for where to live:

> Economists' explanation of why some consumption amenities can influence location revolves around the concept of consumer surplus. Whenever a consumer derives benefits (increases in well-being) from a good or service that exceed the costs the consumer pays to obtain it, the net benefit represents a net increase in well-being. This increment is called consumer surplus. In general, consumption amenities offer the prospect of positive consumer surplus. The nearer that people live to such amenities, the better their access, and the lower their cost of taking advantage of them. Thus, consumers can increase their consumer surplus—their economic well-being—by living near forests that offer recreational opportunities, wildlife viewing, and other amenities (Niemi, Whitelaw, & Johnston, 1999).

Gardens as a consumption amenity increase consumer surplus—there is constant demand for garden space in the City (Hallett, 2011; Cantril, 2011). People that move to Eugene value outdoor amenities that the City provides. Without this second paycheck, people could easily move to a neighboring town or county. Urban agriculture is a part of Eugene's urban fabric that makes this city unique from others.

CHAPTER VI

CONCLUSION

Introduction

This research was intended to identify barriers and opportunities for increasing urban agriculture opportunities for residents in Eugene. Academic literature, supported by City documents, reviewed in Chapter 2 of this report make a strong case for increasing the number of urban agriculture projects in the City based on the multifaceted benefits of urban agriculture.

Guided by past and ongoing research on the importance of planning for food systems, this study has a narrow focus specific to the Eugene community. This last chapter compiles the information collected during this study into a series of conclusions and recommendations that can be used at the neighborhood- and City-level. This research is intended to serve urban agriculture enthusiasts, City officials, and the greater Eugene community.

Conclusions

This section synthesizes a series of conclusions derived from the interviews with urban agriculture experts in Eugene.

Areas for Capacity Building

Balancing the ten areas for capacity building is key to creating a successful, sustainable garden space. Of the ten, Planning, Development and Construction,

Volunteers, Operations, Partnerships, and Funding are the most important aspects to balance for a neighborhood garden space.

Neighborhood Gardens v. Community Gardens

Based on findings from this study, there is a clear distinction between the Neighborhood Garden model and the City's Community Garden model. Those with Neighborhood Gardens experienced much participation from volunteers, an overabundance of vegetables, and an overall feeling of community that derived from that particular garden space. In comparison, those practicing the Community Garden model with individual plots had less of a 'community building' experience – instead, the mix of people do not seem generate community in the same way.

Opportunity for Partnerships

The findings from this study show that there are many creative opportunities for those interested in urban agriculture to grow vegetables utilizing partnerships in town. For organizations, one of the most helpful ways to find a partner for a project is through the yearly meeting of Eugene farmers and gardeners, where people share concerns, ideas, items they have to share, and items they need themselves. This meeting lends itself to helping many like-minded people connect with each other and share resources.

For those not involved in organizational gardens, other informal, creative partnerships have stemmed through neighbors communicating with each other and with organizations that have land that could be used for a garden. Ultimately, what seems to

incentivize people in joining a gardening effort are the community partnerships that are made, but also the feeling of "doing good", and getting vegetables in return.

Recommendations

This section provides a set of recommendations for various stakeholders, including urban agriculture enthusiasts, the City of Eugene, planners, and policy makers. These recommendations are aimed at removing barriers and increasing the access to urban agriculture projects in the City.

Create a Buildable Gardens Inventory

Urban agriculture programming needs support at various levels of government. A planners in Eugene and Lane County (the City; Lane Council of Governments; Oregon Research Institute; the Lane Food Policy Council; the Planning, Public Policy and Management Department's Community Planning Workshop class; etc.) should look to the City of Portland's *The Diggable City Project: Making Urban Agriculture a Priority* for guidance. This document inventories the public lands available in the Portland-Metro region and makes recommendations for sites that could serve as 'best' areas for building urban agriculture projects. They determine these sites using specific criteria, including land tenure, water access, level grade, transit access, and proximity to other agricultural activity.

Additionally, this document points to several laws, regulations, and planning documents in Oregon that are relevant to urban agriculture: "As interest in expanding urban agriculture opportunities continues to grow, Portland needs to develop and provide

sound planning guidance regarding what is possible, where it's possible, and what this activity could look like." Cited in the document are the following State of Oregon statutes and Land Use Goals:

Urban agriculture is sanctioned by Oregon state statutes as follows:

- **197.752. Urban lands available for development**
  - *(1) Lands within urban growth boundaries shall be available for urban development concurrent with the provision of key urban facilities and services in accordance with locally adopted development standards.*
  - *(2) Notwithstanding subsection (1) of this section, lands not needed for urban uses during the planning period may be designated for agricultural, forest or other non-urban uses.*

Portland's Urban Agricultural Inventory directly supports the following statewide land use planning goals:

- **Goal 1 Citizen Involvement:** Urban agriculture promotes civic engagement and participation by providing space and opportunity for community members to collaborate in food production and gardening potential within their neighborhood.
- **Goal 2 Land Use Planning:** The City of Portland's urban agricultural inventory will enable involved bureaus to determine the feasibility of food production opportunities for available, publicly-held lands. This effort will efficiently utilize vacant lands within the Urban Growth Boundary and promote community development and food production for the City of Portland.

- **Goal 5 Open Spaces and Natural Resources:** Open space is a priority in greening urban centers. Urban agriculture can be used as a model for incorporating functional production with community space and greening the city.
- **Goal 6 Land, Air and Water Quality:** Increasing/preserving pervious surfaces in the city (gardens, farms, etc.) helps improve water quality through stormwater management, and providing local options for food decreases vehicle miles traveled (by freight and others), lowering CO_2 emissions.
- **Goal 8 Recreational Needs:** Urban agriculture meets recreational interests of community members while simultaneously providing the opportunity for education and food production.
- **Goal 9 Economic Development:** Urban agriculture has the potential to encourage economic development through the promotion of entrepreneurial skills and community empowerment.

Ultimately, Portland found 289 locations comprised of 430 individual tax parcels that could be considered for urban agricultural use. Interviews and focus groups were used throughout the planning process to help inform the criteria that would make the 'best' garden site. If the City decides to take on a project such as this, or contract it to one of the organizations listed above, Eugene can use these same principles to inform a Buildable Gardens Inventory of the City to see which land is available and vacant for garden space on public property. This study would map projects that are currently in place but go further to show the distribution of where additional gardens can be built to best serve specific neighborhoods.

Advocate for a Friends of Eugene Gardens Group

Conversations with urban agriculture experts in Eugene yielded strong support for the need for an umbrella organization (most likely a nonprofit) that could serve the needs of many different neighborhood and urban agriculture groups in town. For example, groups such as the Common Ground Garden, not affiliated with a nonprofit group (and really, without a need to become a 501c3 nonprofit organization) occasionally need 501c3 status to become eligible for grants through different organizations. Using the Lane Food Policy Council's 501c3 status, they have been able to apply for a few outside grants. However, the Food Policy Council does not serve the broader need of supplying things like liability insurance to these smaller organizations. A Friends of Eugene Gardens group could potentially serve a variety of different, small organizations that have a need for coordinating volunteers, researching insurance needs, finding out technical questions about running an organization, and providing skill-building resources. This group could potentially provide a regional "garden share" website, for example, and could offer land in exchange for labor, produce, or the operational costs of running the garden. This group could also connect individual landowners who have extra space with people who want a small plot of land to garden. I believe it would be best for this group to have an affiliation with the City of Eugene and the Lane Food Policy Council to ensure that all organizations are on the same page in terms of specific information.

One example of such an organization in the Pacific Northwest is the P-Patch Trust in Seattle, a 501c3 nonprofit that works in coordination with the City's Community Gardening Program to oversee 75 P-Patch gardens distributed throughout the City,

equaling approximately 23 acres and serving 4,400 gardeners (City of Seattle, 2011). The mission of the P-Patch Trust is to acquire, build, preserve, and protect community gardens in Seattle's neighborhoods (P-Patch Trust, 2011). The P-Patch Community Gardens are open to the public and are used as restorative spaces, learning/idea incubators, and places to gather and visit.

Using this model, a group similar to the P-Patch trust would greatly help smaller groups looking to start an urban garden but do not necessarily have the resources to complete these projects on their own. A Friends of Eugene Gardens group would also provide the capacity to existing gardens to gain permanency in the City and provide a mechanism for coordinating resources between garden groups. The nonprofit, depending on its mission and goals, could have a short-term longevity and ultimately provide the City with a model for running urban agriculture program projects at a functional capacity or it could work directly with the Urban Agriculture, Parks and Open Space, and Neighborhood Services Programs to provide direct support to residents.

Opportunities for Future Research

There are many opportunities for future research based on the findings in this study. This research allowed for questions to be asked that members of the community are truly interested in, such as quantifying the number of people that garden in the City and quantifying the types of gardens people have. As mentioned in the Introduction's Limitations section, there are currently no numbers stating evidence as to how many people have gardens in Eugene. This information (in the form of a percentage of the population or a raw number) would help anyone or any organization researching

gardening efforts to explain the powerful effects of gardening in the City. We also do not know, of the gardeners in Eugene, how much food people are able to eat out of their gardens, what type of foods gardeners grow, and how many people keep chickens or other animals for food production. This inventory of information could be very useful for the Urban Agriculture Program at the City, as well as other organization working on food issues in the region.

The Oregon State University (OSU) Extension Service provides community members with extensive literature on what types of crops grow well in the Pacific Northwest, west of the Cascade Mountain Range (OSU Extension Service, 2011). However, there is a lack of information describing the efficiency of a typical community or neighborhood garden in our region. Although some organizations and individuals calculate poundage of food harvested each year, there is currently no comparison that shows if a keeping a garden is economically efficient in terms of the time put into to maintaining and keeping the garden year-round. This is a potential area that is ripe for research in that it could be possible, if it can be proven that there is a positive economic return to gardening, to create a policy that allows for families on TANF or Food Stamps to use their money that they would spend on food to go toward renting a community or neighborhood garden plot and to grow their food instead of buying it from the store. This has the potential to create opportunities for a more equitable food system.

One last area for research in our community would be to find the demographics of the neighborhood gardener versus the community gardener, and to detail the definition of ‘neighborhood garden,’ as there are many types of gardens that can fall into this group. It is most likely necessary to create subgroups that describe exactly what a ‘neighborhood

garden' is. This research could be done by conducting stakeholder interviews with people that are involved with these gardens to better understand how they see themselves within the garden. The potential differences between the two groups of gardeners could affect the findings of a study if one is looking to generalize neighborhood gardens and community gardens, as this research does. In researching the demographics, backgrounds, and motives of the people that belong to these two groups, there is the potential to define the gardens based on the people that use them or to categorize the people based on the type of garden they choose to belong to.

APPENDIX A

INTERVIEW GUIDE

1) Planning/Construction & Development/Operations

Please give a brief history of how your project started. Things to consider:

- Proper site due diligence to avoid nuisance
- Permitting
- Discussions with and considerations of surrounding neighbors
- During site construction and development

What role did you play in this project and in Eugene urban agriculture 'scene'?

What have you done to plan for your project?

What physical skills are necessary to pull this project off?

How do you keep the project going?

- During ongoing operations (leaf drop off, manure and compost drop sites, wood chips etc…)

2) Volunteers

How do you assess a volunteer's needs?

How do you maintain your volunteer base?

How do you capitalize on people's want to participate?

How do you meet your volunteer's needs?

How do you engage people and get them to participate?

How have you/has your organization built leadership from the ground up?

How do you assess how to communicate with individual volunteers and different

volunteer groups?

3) Garden Promotion, Outreach, and Partnerships

What partnerships have you made? How are they maintained?

How have partnerships helped/hindered the work you are doing?

How do you tell the garden 'story' so that neighbors and the greater community see the project as an asset?

How do you connect groups with the garden that might not be gardeners or have not gardened before?

4) Funding sources

How did your group receive its initial start up costs?

How do you fund projects at the garden—i.e. demonstrations, tools, paid staff, snacks for volunteers, etc?

Do you have an ongoing revenue stream or a business plan?

What funding source(s) would you recommend to those starting up an urban garden?

5) Organizational viability

Who has oversight over the space?

Who manages the space?

Do you have garden plots or are there shared spaces? How is space allocated?

Who manages the money?

Is there a non-profit connected to the garden?

How does your organization sustain itself?

6) Role of Neighborhood Organizations

What role could neighborhood associations have in implementing urban gardens?

Do you receive help or contributions through your local neighborhood association? If yes, how (i.e. in-kind, donations, help with grant writing, etc.)? If not, do you think it would be helpful? How could it be helpful?

Are there policy implications for building more urban gardens around the city?

For non-neighborhood garden projects (e.g. Laurel Hill Farm, Skinner City Farm, Grassroots Garden): have neighborhood associations been a part of these projects? If so, are they supportive or are they a hindrance?

What do you find as the best way to positively engage the neighborhood?

APPENDIX B

LIST OF INTERVIEWEES

Jen Anonia: FOOD for Lane County (FFLC) Churchill Community Garden

Charlotte Anthony: Victory Gardens

Robert Bolman: Maitreya EcoVillage

Merry Bradley: FFLC GrassRoots Garden

Sarah Cantril: Huerto de la Familia

Anne Donahue: Private Homeowner

John Fischer: Private Homeowner

Rob Hallett: City of Eugene Community Gardens

Debbie Hebert: Edgewood Community Garden

Harper Keeler: University of Oregon Urban Farm

Steve Korin: Private Homeowner

Aleta Miller: ECOS project

John Pitney: First United Methodist Church

Jared Pruch: School Garden Project

Ted Purdy: FFLC Youth Farm

Robin Scott: Common Ground Garden

David Stucky: Private Homeowner

Rosie Sweetman: Lane Community College Educational Garden

Sherry Wellborn: Reach Center Community Garden

APPENDIX C

NEIGHBORHOOD SERVICES MEETING NOTES

To: Ethan Nelson and Anne Donahue
From: Stephanie Scafa
Subject: Meeting with Neighborhood Services Summary Memo

February 4, 2011

Purpose

The purpose of this memo is to give a summary of a collaborative meeting between the Urban Agriculture (UA) program and the Neighborhood Services (NS) program at the City of Eugene on January 27, 2011. In this meeting, the two groups brainstormed key elements of success in the planning and implementing of neighborhood gardens in addition to how the UA and NS programs can work together to create an inter-city partnership to provide an identified need (gardens) where applicable.[3]

The following key concepts for capacity building will ultimately help to identify interview questions for targeted stakeholders. Participants in this meeting included Michael Kinnison, Rene Kane, Lorna Flormoe, Anne Donahue, and Stephanie Scafa.

Areas for Capacity Building

1) Planning, Development, Construction & Operations
Proper planning is needed prior to construction, site development, and operations. Initial steps taken to achieve proper planning are essential to the differing phases of a garden's existence.

- Proper site due diligence to avoid nuisance
- Permitting
- Discussions with and considerations of surrounding neighbors
- During site construction and development
- During ongoing operations (leaf drop off, manure and compost drop sites, wood chips, etc.)

2) Volunteers

[3] Specifically, we discussed the proposed UA project in the Bethel Neighborhood and their active neighborhood association (ABC).

- Recognition of individual skill sets, especially skill sets that would not normally be considered garden-appropriate (i.e. graphic design, computer work, organization, cleaning, building, etc.)

- Understanding of what motivates volunteers to come out to the garden

- Recognition of volunteer needs, abilities, and desires, and that these can change over time

- Recognition of different communication styles and ability to communicate through a variety of means to different volunteers and volunteer groups

- Successful engagement and organization strategies; available trainings for volunteer coordinators, etc.

3) Garden Promotion, Outreach, and Partnerships

- Identification of clear, consistent, and engaging messaging about the project, the goals, the scope, who to contact, and what the objectives of the outreach are.

- The importance of teaching what you know and passing it on through work parties, get-togethers, and volunteer opportunities

- Fliers in the neighborhood

- Promotion of the garden through the neighborhood association (see below)

- Outreach to schools, churches, and businesses for partnerships (nearby and city-wide, where applicable) as well as for strategic partnerships to leverage grant funds or obtain property, energy for development or management); Girls Scouts/Boy Scouts; Eagle Scouts – teenage energy and muscle behind a project to both help and take ownership

- Outreach to groups that might not be "connected" through usual means (Latino/Asian/African-American families, single parents)

- Public/private partnerships

    - Local Businesses and interest groups

4) Funding sources

- Develop a "business" plan for the community garden

- Neighborhood matching grants – initial seed capital

- Neighborhood contributions – for start up projects and ongoing donations for plants, activities, supplies, etc.

5) Organizational viability
Many of Eugene's successful community gardens have oversight by a nonprofit group: Skinner City Farm partners with the City to coordinate plot management while the Farm focuses on day-to-day operations and maintenance, and the Youth Farm, Grassroots Garden, and Churchill garden are run by FOOD for Lane County.

- Consider long term questions:
    - Who has oversight over it?
    - Who will manage it?
    - How will plots be allocated?
    - Who manages the money?
    - Is there a non-profit connected to the garden?
- Develop a strategic plan for outreach and organization (the who, what, when, how, how much)Leadership
    - Build a leadership core
    - Designate responsibilities to avoid burn-out
    - Design criteria for skills and characteristics of leadership (e.g. one strong person or a small dedicated group?)
- Community Building
    - External Capacity: Defined as external partnerships that are created to make long term viability possible. This could include local businesses, schools, fraternities, sororities, colleges, and neighborhood groups that can provide ongoing support with volunteers and donations of funds, labor, and skills
    - Internal Capacity: Community building within the neighborhood group through face-to-face interaction (i.e. regular sit-down meals), individual recognition of lifetime milestones (i.e. birthdays, birth, death), and ongoing recognition (i.e. structures at Grassroots Garden that memorialize key volunteers, donors, and people). The internal capacity speaks to the depth that a community garden can play in a person's life—recognizing people's strengths and contributions give meaning to the internal

community being built through shared activities. In this sense, the garden becomes more than a garden—it becomes a family.

Connections between Urban Agriculture and Neighborhood Associations

We identified many areas where urban agriculture projects have the opportunity to interconnect with neighborhood associations, using the Common Ground Garden and Friendly Area Neighbors (FAN) as a relevant example. Because neighborhood associations have an already-established governance structure, they could provide a group of residents interested in starting an urban agriculture project with best management practices for organizational aspects of the project.

For example, many neighborhood associations have the tools necessary to provide leadership skills, budgeting tips, and support for all new urban agriculture groups. Neighborhood associations can help with the planning of the project and assisting with proper site due diligence, as well as promoting the garden in the neighborhood newsletter, to friends and associates, and to the City of Eugene staff.

Using the neighborhood association newsletter to communicate to the neighborhood about the garden, residents will be able to read about work parties and volunteer opportunities. Another key role of the neighborhood association will be to help find sustainable funding sources beyond the first or second round of neighborhood matching grant(s) that started the project. This could include leads to business sponsorships and partnerships or skill set partnering and bartering (and thus providing connections with local businesses).

Neighborhood associations have a history of utilizing skill sets to run a group and can provide tips on how to do that. In addition, they also might be able to direct larger issues and ideas to Neighborhood Services at the City. Finally, it would be interesting gain insight into the role neighborhood associations play in non-neighborhood garden projects, such as Skinner City Farm, Laurel Hill Farm, and the Grassroots Garden—or *if* they play a role in these types of gardens. Specific answers surrounding this issue will be sought during the interview process.

Additional Resources

These resources were suggested by Rene and Anne as good examples of how coordinators could both build capacity and build community:

- Center for What Works: http://whatworks.org/
- The Community Tool Box – Bringing Solutions to Light: http://ctb.ku.edu/en/default.aspx
- NeighborSpace, Chicago: http://neighbor-space.org/main.htm
- *Care and Feeding of Volunteers* (book)

APPENDIX D

GARDEN TYPOLOGY MATRIX

	Small (<500 sq ft)	Medium (500 - 5,000 sq ft)	Large(>5,000 sq ft)
Private	**Small Scale Gardens:** This garden size can be managed by one or two people and serves primarily their own needs. These types of gardens are found in the planting strips, front yards, back yards, and as individual rented plots within a community garden.	**Residential Medium Scale Gardens:** This garden size can be managed by a small group of people and can serve a wide variety of needs as it will produce more food. These types of gardens are found on private property and can be located in residential neighborhoods and on other privately owned property such as churches, businesses, and private schools.	**Residential Large Scale Gardens:** This garden size is managed by large groups of people and can produce a large quantity of food. They are primarily run by local food agencies with the purpose of growing fresh organic food to supplement the diets of persons with food insecurity and to teach the necessary skills of growing and cooking food to targeted populations and volunteers.
Public	**Public Property: Small to Medium Scale Gardens (<5,000 square feet):** This garden size can be managed by small groups of people and primarily serves the needs of the surrounding neighborhood. These types of gardens are typically underutilized city right of way and utility easements.		**Public Property Large Scale Gardens:** This garden size can be managed by a large group of people, can serve a wide variety of needs and will produce more food. These types of gardens are found on public property.

APPENDIX E

SUPPLEMENTAL SOURCES

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