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Local food access in inner cities: Integrated research through: comparison study, literature review, case studies and design implementation

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**Local food access in inner cities: Integrated research through: comparison study, literature review,
case studies and design implementation**

by

Courtney Allison Long

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

Major: Sustainable Agriculture

Program of Study Committee:
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Ames, Iowa

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Abstract

This research suggests a strategy to address a difficult challenge: self-sustainability and the promotion of increasing the availability and accessibility of local food. This strategy has the opportunity to bring nutritious meals into our homes, place money into our local economies and promote self-sustaining communities. This study examines literature and case studies involving both primary and secondary sources. Cities and their local food programs were examined by travel within Havana, Cuba, and Kansas City, Missouri, and a field research study in Des Moines, Iowa. The study presents models that address urban agriculture, food accessibility, and design implementations to improve local food access. The ultimate goal of this research is to provide alternative, healthy, and sustainable means to make local food available to residents and create a model for future communities to initiate sustainable measures and promote the design of holistic food systems.

Chapter 1: General Introduction

Introduction

Local food access in inner city urban areas has been a persistent problem within the last several decades (Lawson, 2005). Due to economic deterioration, climate change, and expanding population growth, local food has been increasingly difficult to find as well as afford (Global Climate Change Lecture Series, 2011; Winne, 2008; Nordahl, 2009). Many local food activists are looking for innovative approaches to solve these problems. The following research suggests a strategy to address a difficult challenge: self-sufficiency and the promotion of increasing the availability and accessibility of local food. A resolution to create local food systems has the opportunity to bring nutritious meals into our homes, place money into our local economies and promote self-sustaining, resilient communities.

To better understand issues related to local food, this study examines literature and case studies involving both primary and secondary sources of research. Cities and their local food programs were examined by travel within Havana, Cuba, and Kansas City, Missouri, and a field research study in Des Moines, Iowa. The structure of the study includes three interlocking topics: urban food and community revitalization, food security and accessibility through planning and programming, and design implementations to improve local food access. These three topics were selected based on past course work and undergraduate study, as well as interests developed by reading literature reviews and case studies.

The first chapter relating to urban food production seeks to reveal how urban agriculture can be used to promote aesthetic benefits within inner cities through revitalization, promote community pride, and create access to healthy and local food options. Havana, Cuba, and Kansas City, Missouri, are two case studies that were reviewed through analysis of attempts to create holistic food

systems. These food systems include not only gardens and green community space, but also peri-urban agriculture. In addition, Chapter 1 reveals how urban food systems used in the past can be used as a model for communities in the future: using local food as a revitalization tool to improve appearance, social connections, and pride within the community.

The second chapter addresses accessibility constraints, including food security and how planning and programming influence the ability to access local food in inner cities. The chapter revolves around literature review and analyses where the gap occurs between consumer, producer and supplier is addressed. Through this analysis, the chapter aims to promote a strategy to create change and promote options to relieve these missing links in the future. These options for improved accessibility lead to the final chapter of design. Beautification and aesthetically pleasing environments will help promote the idea of increasing the opportunity to find local food, as well as contribute to the revitalization of communities through integrating options of connections with neighbors, walkability and access, and improved zoning for urban food.

The third chapter addresses design aspects associated with local food. Precedents, programming and design intervention were analyzed in terms of what promotes urban agriculture and other forms of design associated with food in cities. Through looking at current projects and designs within Des Moines and Kansas City, as well as a new design for a “mobile market”, a local food marketing cart; the goal is to create a model and promote strategies to create sustainable communities in relation to local food access. There are numerous design opportunities, and through creative integration, these programs can be implemented into a holistic food system to benefit residents socially, nutritionally, economically, and environmentally.

Several cities were studied and numerous ideas from literature were reviewed. Three cities were visited and used as primary research sources. The Enterprise Community of Des Moines, Iowa, was the primary research community, where focus groups and surveys were administered, concentrating on local food access from community and school gardens. The Enterprise Community is located on the north side of I-235 in Des Moines, bounded by Martin Luther King Drive on the west, 2nd Avenue on the east, Hickman Drive on the north, and University Avenue on the south. Accessibility concerns were addressed through design of both a community garden and school garden. In addition, a mobile market design was completed and copyrighted with the goal to assist with marketing and the possibility of selling local produce and products from around the community. Alecia Kates, the 6th Avenue Corridor Coordinator, was the primary contact for the research, involving a vacant lot study, community and school garden survey and focus group, and mobile market design interpretation.

Havana, Cuba, and Kansas City, Missouri, were additional sites visited for this study. A travel course within the ISU Graduate Program of Sustainable Agriculture (GPSA) went to Cuba in May 2011. An independent study class revolving around comparisons of urban food systems was developed, and the travel experiences were reviewed and analyzed along with literature from Cuba throughout this study. Kansas City, Missouri, was an additional thesis component of this independent study course. Kansas City has an extensive local and regional food system, and these aspects were compared with Havana, Des Moines, and literature within the study.

The integration of all three topics help to develop a critical analysis of topics relating to inner city revitalization and local food, with the goal to provide a model to communities for creating sustainable local food systems that are both accessible and obtainable for all residents in the community. This is a comprehensive, holistic, and integrative design pulling from numerous facets of the community. Throughout the research the following questions will be addressed:

- What is the role of local food as a revitalization tool?
- How can local food options be created to improve accessibility to food within metropolitan cities?
- What are the design aspects of local food access and how do they contribute to community revitalization?

Limitations:

Because this topic has been developing just recently, the literature and case study examples are fairly limited, especially in dealing with design of urban food and local food access. Although some ideas stemmed from the early decades of the 1900's through the use of victory gardens (Lawson, 2005), many innovative approaches to the solution of access to food through urban agriculture and peri-urban systems are recent developments. This is a limitation of the study, because there is not a wide selection of information available to review and compare. Another limitation includes travel restrictions to primary case study research. Havana, Cuba, Kansas City, Missouri, and Des Moines, Iowa, were visited and travel research was conducted, other sites also have intensive urban agriculture systems in place; however, it was impractical to include them as primary research case studies, and are instead discussed through means of literature that exist.

Definitions:

Community: "a grouping of people who reside in a specific locality and who interact and connect through a definite social structure to fulfill a wide range of daily needs" (Holben, 2010, p. 4)

Community food security: "emphasis building individuals' abilities to provide for their own food needs rather than encouraging dependence on outside sources such as food banks or public benefits" (Allen, 2004, p. 124)

Community Supported Agriculture (CSA): "a partnership between farmers and community members working together to create a local food system" (Gradwell, DeWitt, Mayfield, & Ricardo, 1999)

-CSA members pay a specified price for a share of product from the farm, typically distributed weekly; other options include work shares that allow for members to work for their share of product

Eco-village: “intentional communities, in an urban or rural setting, in which the residents share social, environmental and economic goals” (Newman, Beatley, & and Boyer, 2009, p. 44)

Food Insecurity: “lack of access to healthy and affordable food” (Winne, 2008, p. 124)

Food gap: food gap can be understood as a failure of the market economy to serve the basic human needs of those who are impoverished” (Winne, 2008, p. xviii)

-access to grocery stores and food choices is another form of a food gap: ex. If people are only able to access convenience stores or fast food restaurants, leading to a gap in access to local and healthy food choices (Winne, 2008)

Gleaning: “process of collecting what is left in the fields after harvest” (Stuart, 2009, p. 100)

-other examples of gleaning exist from gathering un-used food from grocery stores

Holistic Management: “a term that describes systems thinking approach to managing land resources that builds biodiversity, improves production, generates financial strength, and improves quality of life for those who use it” (Reference.com, 2012)

Local: “pertaining to or characterized by place or position in space; spatial” (Dictionary.com, 2012)

-institutions, organizations, and other amenities typically create their own meaning of local as it affects their values: (i.e. distance, types of processing, types of practices and quality)

-local has been defined within certain radii (ex. 25, 50, 100, 250 miles of city)

-local food can pertain to processing, ingredients, and manufacturing as it relates to a specific location

Local food system: “they are considered to have environmental benefits, such as reducing energy use; social benefits such as creating new opportunities for solving problems of hunger and homelessness; and economic benefits such as improving opportunities for employment” (Allen, 2004, p. 66)

-“most prominent and frequently cited types of alternative agrifood institutions in local food systems are farmers’ markets, community supported agriculture, institutional purchasing, urban agriculture, and food policy councils” (Allen, 2004, pp. 66-67)

Neighborhood: “a district or locality, often with reference to its character or inhabitants” (Dictionary.com, 2012)

Peri-urban agriculture: “refers to farm units close to town which operate intensive semi- or fully commercial farms to grow vegetables and other horticulture, raise chickens and other livestock, and produce milk and eggs” (Urban and Peri-Urban Agriculture, 1998)

Permaculture: “the conscious design and maintenance of agriculturally productive ecosystems that have the diversity, stability and resilience of natural ecosystems” (Nordahl, 2009, p. 108)

-permaculture contains several different layers including perennial and annual crops: canopy and understory trees, shrubs, perennial and annual crops including root vegetables and groundcovers and cover crops

Poverty: “the state of having too little money to meet minimum needs for food, clothing, and shelter” (Holben, 2010, p. 323)

-“2009 U.S. Department of Health and Human Services defined a poverty-level income as \$22,050 for a family of four” (Holben, 2010, p. 323)

-“with an income of 130 percent and 185 percent of the poverty threshold, the income levels for qualifying for several food assistance programs in the United States” (Holben, 2010, p. 323)

Public Produce: “strategies to produce food throughout the city so that everyone in the community has the ability to eat healthy whenever and wherever” (Nordahl, 2009, p. xiv)

Sustainable Development: “a strategy for improving the quality of life while preserving the environmental potential for the future, of living off interest rather than consuming natural capital” (Allen, 2004, p. 33)

-sustainable use: using a resource at a rate within capacity of renewal (Roseland, 2005)

-involves “economic and social change to improve human well-being while reducing the need for environmental protection” (Roseland, 2005, p. 4)

-incorporates social equity: fair distribution and access to resources for individuals and communities (Roseland, 2005)

Sustainable food system: “protects the land which produces the food supports the local economy through local production; empowers communities through self-reliance; and gives them increased food system security; enhances community well-being through increased health, decreased illness; increases sense of community; and increases environmental health because of reduced transportation of food” (Roseland, 2005, p. 51)

Urban agriculture: “refers to small areas (vacant plots, gardens, verges, balconies, containers) within the city for growing crops and raising small livestock or milk cows for own consumption or sale in neighborhood markets” (Urban and Peri-Urban Agriculture, 1998)

Thesis Organization

This thesis is organized as a journal-thesis format, so that the following three chapters can be submitted as individual journal article manuscripts. A general introduction and general conclusion will introduce and conclude the thesis paper and each of the body chapters will stand alone and represent an area of consideration for the thesis topic: urban food production, local food

accessibility and food security, and design considerations for improving food access. In addition, each chapter will have its own works cited and tables associated, with a general works cited following the general conclusion.

Contribution:

The importance and contribution of this study is to add to the literature that currently exists.

Because the study of urban food and the implementation of urban food systems is only recently being sought, the literature and case study examples behind this form of revitalization is minimal.

Different models are addressed that can promote strategies to each of the questions posed within the chapters of the study. This study presents additional research and knowledge including survey and focus group results on participants' perspective after participating in programs or urban agriculture (school garden and community garden). The outcome and goal of the research is to provide alternative means to make local food available to residents as well as create a model for the future communities to initiate sustainable measures and promote the design of holistic and sustainable food systems.

Chapter 2: Urban Food and Community Revitalizations: a comparative study in urban agriculture.

A paper yet to be submitted to a Journal publication

Courtney Long

Abstract

This chapter discusses the different approaches to the use of urban agriculture and the opportunities to use urban food systems as a revitalization strategy within communities. Primary study areas for this research include: Havana, Cuba, Kansas City, Missouri, and Des Moines, Iowa. Research in these study areas concentrate on implementation of urban agriculture, urban agriculture as it relates to community pride and community revitalization projects through urban agriculture. The ultimate goal of this chapter is to provide a strategy and model for communities to use in the future regarding implementation of urban agriculture food systems as an appropriate measure to support community revitalization projects.

Introduction

Urban agriculture has become a popular example of a way to access food within city limits. Urban agriculture refers to “small areas (vacant plots, gardens, verges, balconies, containers) within the city for growing crops and raising small livestock or milk cows for own consumption or sale in neighborhood markets” (Urban and Peri-Urban Agriculture, 1998). Examples of urban agriculture exist throughout the United States and other nations. This study focuses on the cities of Des Moines, Iowa, Kansas City, Missouri, and Havana, Cuba. Urban agriculture has become a vital way for residents to have access to food as well as a sustainable method of providing food for oneself and family (Nordahl, 2009; Lawson, 2005; Winne, 2008). Urban agriculture began being used in the United States during the late 1800’s and into the early 1900s through vacant lot gardening, school

gardens and civic gardens (Lawson, 2005). These practices were a combined effort to eliminate congestion and environmental degradation as well as promote the use of land to raise food and for people to be self-sufficient (Lawson, 2005). In the United States, victory gardens became common in the 1940's and were used to provide food for the war effort in communities. These efforts helped to raise approximately 40 percent of the vegetable supply in 1944 (Lawson, 2005). Although gardening continued to exist after these movements, a significant decrease occurred in the 1980's; many plots were built over for development (Lawson, 2005). In the early 1990's the movement began to grow again through implementation of community gardens, school gardens, and the movement into civic and institutional settings such as health care and universities (Lawson, 2005). Today, neighborhood community gardens and school gardens are seen being used as a tool to assist with food security in the community (Lawson, 2005; Winne, 2008; Kates, 2011). Now there are more innovative approaches to where food can be located, the scale of agriculture within cities, and employment and community development tools associated with urban food (Holben, 2010; Nordahl, 2009; Morgan, 2006; Winne, 2008; Stuart, 2009). This study takes a closer look at the information given and suggests a strategy to use urban agriculture as revitalization in the future.

This research addresses three questions:

- Why implement urban agriculture?
- How is community pride promoted through urban agriculture?
- Can urban food systems promote revitalization of communities?

Through travel and literature review, these areas of study are examined to answer the question of why urban agriculture came about. Havana, Cuba, reveals an interesting story behind the use of urban agriculture, as well as precedents within the United States such as Kansas City and Des Moines. Drawing upon examples from the book City Bountiful (2005), other examples of why urban

agriculture originated are discussed. In addition to discussion on the reasons of implementing urban agriculture, urban revitalization through agriculture will be reviewed. Also, past research will be reviewed to show how community pride is promoted through the use of urban agriculture. Community pride lends itself to the idea of using urban agriculture and urban food systems to promote community revitalization within cities, which relates to the last question addressed, can urban food systems promote revitalization? These systems include not only gardens and green community space, but also the use of urban agriculture methods. Through this discussion, the chapter reveals how urban food systems, both nationally and abroad, can be used as a model for urban communities (but some practices may apply to rural settings), to promote food as a revitalization tool to improve appearance, social connections, and pride within the community.

Table 2-1: Study Areas

<i>Location</i>	<i>Time of study</i>	<i>Description of visit</i>	<i>Why selected</i>
<i>Havana, Cuba</i>	<i>May 2011</i>	Class independent study, group travel: urban and rural travels around city, research of agriculture and meetings with agricultural program officials	Unique perspective on how urban agriculture began and the positives and disadvantages to the system.
<i>Kansas City, Missouri</i>	<i>August 2011</i>	Class independent study, individual travel; visited urban farms, community gardens, and traveled around city viewing map of local food system	Unique perspective of urban agriculture within the U.S.- alternate vantage point of operations from Cuba
<i>Des Moines, Iowa</i>	<i>January 2010-January 2012</i>	Research study and studio project; conducted site visits, assisted in design of community and school garden; assisted in research of vacant lot revitalization project	Unique perspective on how urban agriculture methods, such as community gardens and school gardens, assist in revitalization and social pride within the community

Why implement urban agriculture?

Communities utilize urban agriculture for several different reasons. In the case of Havana, Cuba, they began using urban land for agriculture during the peak oil crisis and fall of the Soviet Union in the 1990's (Morgan, 2006). This led to the cut-off from many imports and forced Cuba to find alternative methods to produce food and other amenities within their own country. When the oil crisis began, conventional and industrial agriculture production was forced to cease, and the government required alternative methods of agriculture that involved less inputs (Morgan, 2006). Although government mandates were not initially well received by the people; because of the encouragement of alternative agriculture, Cuba now has a unique agricultural system relying on many unique forms of agriculture (urban agriculture, community gardens, rooftop gardens, peri-urban agriculture, state farms, and private farms) that has allowed the country to be independent of most imports (Morgan, 2006). Through urban and peri-urban agriculture, residents are able to access sources of food in spite of food crisis and the elimination of food imports (Morgan, 2006). Urban agriculture has helped lend a hand in the crisis to develop their country's own viable food production systems as well as promote community growth and relationships (Morgan, 2006). People have started caring about their food system as well as each other (Morgan, 2006).

Although these agricultural practices were forced by the government in Cuba, there are examples in the United States where urban agriculture has been motivated by public desire (Winne, 2008; Erickson, 2012; Lawson, 2005). A program in Kansas City, Cultivate Kansas City, has formed an integrated regional food system through the use of several different agriculture practices at all scales. A goal of this program is to have a farm in every neighborhood (Erickson, 2012). Different scales of agriculture reside in the different neighborhoods around the Kansas City region. These include: urban and backyard gardens, community gardens, urban farms. Along with the different scales, they also represent a wide variety of communities: individual, families, neighborhoods,

schools and universities, churches, and community wide investment. Through these different initiatives, many improved and innovative strategies have been used to strengthen and improve both neighborhoods and food systems in Kansas City.

Urban agriculture has also been used as a source of economic renewal in addition to accessibility to local food. Winne, (2008), speaks of a farm in New York City, Holcomb Farm, that began working toward a Community Supported Agriculture program (CSA) that was good for producers, the environment, and consumers. An organization, Bread and Life, is affiliated with the CSA and helps with outreach and distributing shares; the organization also provides educational seminars to teach members how to cook with the products unfamiliar to them (Winne, 2008). Through having affordable and accessible food by means of urban agriculture, Bread and Life is hoping to reverse the unhealthy diets that have been adapted because of poverty, food insecurity and low accessibility (Winne, 2008). These concepts are empowering because they can be adapted within other communities. If people are willing to link up with existing sources, in this case Holcomb Farm and non-profit organizations, there are opportunities through urban agricultural programs that can help alleviate the problems of poverty and hunger.

How is community pride promoted through urban agriculture?

In Havana, Cuba, urban agriculture has lent a hand in the crisis to develop local food as well as promote community growth and relationships. Edible foods are available around the city, as well as opportunities to purchase local food from vendors (Morgan, 2006). Community gardening and urban farms are increasing, and have led to better access to food for organizations, hospitals, schools and neighbors (Long, 2012b; Morgan, 2006). Through the interpersonal relationships that are formed through buying from one another, bonds are continually shaped and enhanced in the neighborhoods (Nordahl, 2009; Morgan, 2006; Lawson, 2005; Winne, 2008).

Farming inside cities is also said to reduce the amount of vacant, unproductive urban land, leading to an enhanced public image of low-income, blighted neighborhoods (Winne, 2008). Through urban agriculture, the amount of green space is increased, and pride has the chance to foster in the community along with the development of self-sufficiency and improved aesthetics. Pride is also manifested through the promotion of job-creation and growing one's own food (Winne, 2008). Pride in the community is maintained through creating diverse working relationships among members of the community and allowing them to grow individually and as a unified group, creating ownership and responsibility within a community.

Winne (2008, p.172) states that "three things are necessary to change our food system and close the food gap: projects, partners, and policy. Without the three p's, synchronized and fully engaged, we will never be able to develop the innovation, know-how or the resources necessary to reach those goals." Projects help provide innovation and inspire other to get involved in the food system. Through different projects, people learn from their own experience and can then relate to others in their experiences, hence leading to more innovative ways to provide a strategy to resolving the problem at hand (Winne, 2008; Lawson, 2005; Participants, 2011). Various markets are associated with urban food including: farmers markets, Community Supported Agriculture (CSA), food banks, and improving delivery of local food assistance programs (Winne, 2008). Markets help to branch the gap between consumer and producer, enhancing the environment in which we purchase food. When people become actively involved in these partnerships, pride begins to resound through personal dual ownership of the food system. Partners are needed through these projects because it is essential to work as a community, because no one person can solve the issues faced today (Winne, 2008; Kates, 2011). This linkage requires uncommon connections and outreach through creative thinking. Policy will create the right changes in the correct places. It is important to realize

the good that is happening around the world, and work to create those beneficial projects, partnerships and policies in communities that are in need (Winne, 2008; Lawson, 2005; Nordahl, 2009).

Can urban food systems promote revitalization of communities?

Although urban agriculture has been shown through previous examples to have a dramatic, positive effect on community life, it is sometimes difficult to begin that process of revitalization. In an example from Closing the Food Gap, Winne (2008), describes a hurdle that the Knox Park Foundation in Hartford, Connecticut dealt with. Due to migration out of the city, numerous lots were left vacant, which created an opportunity to fill the lots with urban gardens (Winne, 2008). Social issues, including race, had created conflict among different groups in the city (Winne, 2008). Local foods and organic movements were typically led by middle-class, well-educated, white residents (Winne, 2008). The foundation had begun to establish vacant lot gardening in a low-income, non-white neighborhood with their “well-intentioned, white, paternalistic strategy” (Winne, 2008, p. 17). While the neighborhood organizations were trying to attempt their own version of growing food, a stark dichotomy was created between residents that lived in the area and those that were trying to create a change toward urban food (Winne, 2008). Also, because of the migration out of the city, many of the areas around the vacant lots simply had no neighborhood, which led to additional hurdles in the recruitment of participation for the community garden (Winne, 2008). The organization found that if there was not significant buy-in from the neighborhoods involved in the vacant lot gardening program, that the program would simply not work (Winne, 2008). The Knox Park Foundation came up with a rule of thumb that at least 10 residents within the neighborhood must be present, or it was not going to be a successful community garden (Winne, 2008). Due to lack of buy-in from neighbors, many of the projects failed; there was a lack of understanding what a community garden needed: a community (Winne, 2008).

This is just one example of a failed attempt to revitalize urban communities through urban agriculture. This example is used to show the need for cooperation among all parties in a neighborhood to adapt and communicate regarding the situation at hand, in order to promote a solution. A neighborhood in Des Moines, Iowa, known as the Enterprise Community, is an example of a community that is beginning to come together around an urban food goal. The programs of a community garden, school gardens and increased awareness of local food access, urban agriculture and urban food turned into a revitalization tool for the community (Kates, 2011; Participants, 2011). This community started focusing on building relationships and strengthening the community through neighborhood pride associated with their efforts with the community and school gardens (Participants, 2011). The participants of the community garden, the Empowerment Garden, stated having numerous benefits from working in their garden plots: fresh produce, therapy from working with the plants, connections with neighbors and others participating in the garden, and improved perspective of their neighborhood (Participants, 2011). Through interactions in the garden, residents' view of the neighborhood became more positive and the neighborhood became enhanced with visual appeal from the garden as well as people being out in the community daily and working with each other. A sense of place began to be associated with the Empowerment Garden and the Enterprise Community as a whole.

Havana, Cuba, also has a system that has worked well toward revitalization. Although it is strictly run through government protocols, urban agricultural methods have significantly enhanced the community and led to revitalization within the community: socially, economically and environmentally (Morgan, 2006). Cuba has been cut off from many imports and has been forced to find alternative ways to produce food and other amenities within their own country. During the crisis, leaders in urban agriculture and sustainability from Australia helped teach Cubans how to

implement alternative agriculture and set up teaching programs across the country and in inner city Havana (Morgan, 2006). These practices were quickly adapted and are still being implemented, Morgan (2006) states that many of the farmers are now among the best paid employees (Morgan, 2006). Training programs can be seen as a revitalization tool, because they create economic development through better agricultural practices, enhance the environment with green space, and promotes social awareness about access to food (Morgan, 2006).

Training programs in urban agriculture are starting up among different agriculture programs in the United States. Within the Cultivate Kansas City urban agriculture program, there are numerous entities that help to assist women and other low-income residents on how to produce their own food, and train them to become producers for others (Erickson, 2012; Cultivate Kansas City, 2012). This approach is two-fold in that people learn to be sustainable and the city also gains economic growth. Juniper Gardens Training Farm and Community Gardens helps refugees that are housed in a public housing unit in Kansas City (Cultivate Kansas City, 2012). They learn to grow and farm vegetables, herbs and other specialty items such as flowers (Cultivate Kansas City, 2012; Long, 2012b). Other gardens have started in schools to help children understand where their food comes from (Kates, 2011). A way to revitalize communities is through education of children because as they grow older they will understand the importance of food production and the importance and means of food security (Kates, 2011; Nordahl, 2009).

The learning programs established through both of these examples are being implemented in other places. The Enterprise Community in Des Moines, Iowa has community gardens and school gardens that are helping low-income families have access to healthy and nutritious food (Kates, 2011; Participants, 2011). Through the school gardens children are able to have hands-on interaction with vegetables in the garden. They are learning what different fruits and vegetables look like, how to

cook with them, and how to grow different plants at home. Children are then able to share their experiences with their parents and possibly garden at home (Students, 2012). Students around Iowa also participate in Farm to School programs that teach children about growing their own food and preparing their meals, as well as introduce them to local farmers around the area (Long, 2012c). These are very practical skills that society is forgetting about, but places like Cuba have been forced to re-learn. Educational programs and incentives promote revitalization of communities through urban agriculture because individuals begin to understand the importance and far-reaching effect of the local food projects (Participants, 2011; Kates, 2011; Students, 2012).

Table 2-2: Case Study Comparison

Location	Why implement urban agriculture?	How is community pride promoted through urban agriculture?	Can urban food systems promote revitalization?
Havana, Cuba	Peak Oil Crisis and the collapse of the Soviet Union led to energy dependency and the need for sustainable practices (Morgan, 2006)	Through community gardens, peri-urban agriculture and urban farms where community members are supporting each other by growing food for their neighbors and community (Morgan, 2006; Long, 2012b)	Urban food systems have helped establish revitalization through increased green space, economic development, and social connections around the community (Morgan, 2006; Long, 2012b)
Kansas City, Missouri	To help people eat and grow locally grown food, and reclaim vacant lots for production and green space (Cultivate Kansas City, 2012)	Through connections with neighbors, participants in similar programs, and networking through different projects within Cultivate Kansas City (Cultivate Kansas City, 2012)	A network of farms and gardens throughout the city have been developed, and the organization believes that every neighborhood needs people growing food; working to revitalize through ecological practices, social community building, and economic development through empowerment (Cultivate Kansas City, 2012; Erickson, 2012)
Des Moines, Iowa	Began through the promotion of a community garden in order to develop community pride within the community, which led to school gardens and classes associated with how to grow your own food (Kates, 2011)	Connections are made between individuals that work with this program. The community garden has promoted pride within the community through getting to know your neighbor and appreciating beautification through urban garden settings. The school garden has also contributed to community pride by children appreciating ownership of having a space of their own (Kates, 2011)(See appendix A and B)	Programs of community gardens and school gardens have effectively shown that revitalization is possible in inner cities through urban agriculture. Residents enjoy being in their community, and have increased the use of public space, creating a lively place. Growing food in a public space led to improved aesthetics, social connections, and more secure personal finances (Kates, 2011)(See appendix A and B).

Conclusion

Through literature review and case study research, evidence suggests that urban agriculture is indeed an effective form of revitalization for urban cities. Urban agriculture promotes social ties through working together to grow one's own food, or food for an entire neighborhood or community. Urban agriculture is also used as an ecological revitalization tool, through increasing green space and native plant varieties that are edible in the landscape. By implementing urban agriculture, it reduces concrete and hard-space throughout the city, and incorporates more green spaces and aesthetically pleasing environments. Lastly, urban agriculture promotes economic revitalization by supporting self-sustainability by growing one's own food. It also promotes more local products, because there is more food available within the city, leading to local economic development. Through the use of urban agriculture and implementing a holistic food system with different scales of production (gardens, backyard gardens, community and school gardens, as well as dispersed large urban and peri-urban farms), an urban food system within communities can be created.

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Chapter 3: Food Security, Planning and Program Comparisons: Accessibility Constraints with Local Food in Inner Cities.

A paper yet to be submitted to a Journal publication

Courtney Long

Abstract

This chapter examines accessibility constraints to local and healthy food options within inner cities.

This includes economic, physical and social aspects of local food accessibility. Strategies are then suggested through means of economics, physical manifestations in cities, and social opportunities.

The ultimate goal of this chapter is to examine the effects that local food systems can have on food accessibility issues within inner cities. Holistic food system models are suggested for communities to improve the accessibility of residents to local and healthy food choices. These solutions include urban agricultural practices as well as altering current production systems to create both a holistic management system of our food and equitable access for all citizens.

Introduction

Different approaches through planning and programming in inner cities can help to address food security issues and the ability to access local food (Lawson, 2005; Stuart, 2009; Nordahl, 2009; Winne, 2008). Through the use of urban agriculture and other edible landscaping practices, it is possible to increase the proportion of the community that is food secure (Nordahl, 2009; Cultivate Kansas City, 2012; Winne, 2008). By understanding where and why current food gaps exist within communities, one can start to imagine a system that is inter-connected and creates food options for all residents. Through this process, planning, policy, and design of community landscape can intervene and promote a system that is sustainable for residents who do not currently have access to local food sources (Nordahl, 2009). It is important to note that local sources are being specified because they serve as an important nutritional food source, rather than processed food or even

food which travels thousands of miles to reach convenience stores or gas stations (Delate, Martin-Schwarze, & DeWitt, 2005). Local food is considered because there is a unique opportunity to address food insecurity issues by implementing strategies to improve access to local food systems and/or self-sufficient options by growing one's own food (Delate, Martin-Schwarze, & DeWitt, 2005; Nordahl, 2009; Winne, 2008). Through access to local food options, it is possible that nutrition will improve alongside a sustainable food system. (Gradwell, DeWitt, Mayfield, & Ricardo, 1999; Holben, 2010).

This research addresses two main questions:

- Where in the food system does the food gap occur? (consumer, producer, supplier)
- What can be done to create change and promote accessibility and food security?

Through literature review and analyses of where the gap occurs between consumer, producer and supplier, this chapter discusses the areas of concern within the food system and the different possibilities that are available to promote increased access to local food. This study aims to promote a strategy to create change and incorporate options to close the food gaps in our current local food system.

Table 3-1: Literature Review

Issue	Source	Reason Selected
Economic aspects of inner cities	(Winne, 2008) (Stuart, 2009)	Unique perspectives and examples on the aspects of poverty and economics relating to access to healthy and local food options, including accessing financial assistance to purchase local food
Physical aspects of inner cities	(Winne, 2008) (Nordahl, 2009)	Unique perspectives and examples on how physical attributes of inner cities play a role on the accessibility constraints in either getting to a grocery store, or a grocery store being located in an inner-city
Social aspects of inner cities	(Winne, 2008) (Holben, 2010)	Unique perspectives on the social roles that contribute to accessibility constraints including those issues revolving around food re-distribution programs and the stigma associated with those programs
Importance of local food: Strategy	(Winne, 2008) (Nordahl, 2009) (Lawson, 2005) (Allen, 2004)	Unique perspectives on the option of growing one's own food; as well as creative strategies to growing food in public domains, which can improve the accessibility issues that people are facing.

Where does the food gap occur?

Economic concerns

Economic aspects and income disparities play a role in access to local food and nutritious food options within inner cities (Winne, 2008; Kates, 2011; Participants, 2011). Food insecurity typically affects people with below average income and those who have difficulties accessing grocery stores and healthy, local food options because of the increased cost of food (Winne, 2008). According to a study conducted at Hartford involving 315 households, selected because of their incomes (185% or less of the federal poverty level), “41% of families interviewed experienced hunger and 35% were at risk of hunger (Winne, 2008, p. 31). This study was conducted using the Community Childhood Hunger Identification Project (CCHIP) that was developed by the Connecticut Association for Human Services and sponsored by the Food Research and Action Center (FRAC) (Winne, 2008). This meant that an astounding 76% of the city’s families that lived at or below 185% of the federal poverty level

had significant food problems as a result of constrained resources” (Winne, 2008, pp. 31-32).

Among this population, children struggled with twice as many health problems as healthy children (Winne, 2008).

Policy recommendations are one way in which the food system could improve the situation of people living in poverty and those who are food insecure (Winne, 2008). Food assistance programs help to alleviate some of the issues surrounding food insecurity, but ineffective and inadequate access to programs create hurdles in addressing the issues of food insecurity (Winne, 2008). Winne, 2008, states “lack of income (poverty or near poverty), the insufficiency and ineffectiveness of major food assistance programs such as food and food stamps, and inadequate access to affordable retail stores were to blame” for food insecurity (Winne, 2008, p. 33). In conjunction with lack of access to food assistance, the distribution of funds to these programs is also creating a problem. Insufficient food redistribution limits the effectiveness of food assistance programs such as food banks and gleaning from grocery stores (Stuart, 2009). The availability of funds for these programs is known to be a larger issue than actually having a supply of quality resources (Stuart, 2009).

The study at Hartford, Connecticut, mentioned previously, also found that because of “these families’ poverty, the systems that were supposed to help them manage that poverty, and the failure of the marketplace to serve their food needs were restricting their ability to live normal and healthy lives” (Winne, 2008, p. 33). Accessibility to these aspects of financial and social constraints has a key role in people’s access to viable, healthy food options (Winne, 2008; Kates, 2011; Nordahl, 2009). According to Winne, 2008, the “food gap can be understood as a failure of the market economy to serve the basic human needs of those who are impoverished” (Winne, 2008, p. xviii). In essence, it is important to reformat our system to make access to healthy, local foods an option for the entire population (Winne, 2008; Nordahl, 2009).

Physical concerns

Physical aspects of inner cities can also create accessibility constraints to local and healthy food.

The ability to access supermarkets, grocery stores, or convenience stores plays an essential role in the type of food that someone is able to find (Winne, 2008; Nordahl, 2009; Kates, 2011). Nordahl (2009), states that on average, our supermarket food comes from 1500 miles away (Nordahl, 2009, p. 6); because of this, those who have access only to supermarkets or convenience stores are at a greater disadvantage in purchasing locally compared to those who live near farmers markets or health food stores. Aspects such as median income and population density play a role in the supermarket capacity in a community, determining store locations and size (Winne, 2008).

Supermarkets locate themselves in areas which are expanding and generate revenue, and that have a specific target population that the corporation looks for (Winne, 2008).

Inner city supermarkets have more demanding concerns than those in suburbs, including rent, insurance and security costs (Winne, 2008). Another issue is the fact that most supermarkets now have a “cookie-cutter” shape that is not easy to design into pre-existing buildings that are found in inner city locations (Winne, 2008). With this one-size-fits-all approach, aspects of parking lots, store size, delivery trucks and drop-off points are difficult to design into a pre-existing structure design (Winne, 2008). In order to move into an inner-city location, there must be specialized designs, which are rare to find for a department store or supermarket (Winne, 2008).

Due to the difficulty of accessing department stores or supermarkets relating to inner-cities, many people are faced with being able to access only convenience stores or fast food restaurants, leading to a gap in access to local and healthy food choices (Winne, 2008). As seen daily, purchasing items in a convenience store or gas station versus a grocery store can also lead to increased spending for items that would typically cost less at a grocery store, limiting access to healthy and nutritious

options (Winne, 2008). In the 1990's, "nationwide, not only were the poor paying more for food and selecting from lower-quality products, but the lack of access was beginning to affect their health and their ability to use food assistance dollars effectively" (Winne, 2008, p. 89).

A final physical access limitation is transportation (Winne, 2008). Similar to the constraints that supermarkets have to get product into their stores in inner cities, residents also have issues in accessing means of transportation to get to a grocery store (Winne, 2008). This is in part because grocery stores are difficult to locate in the city, and residents are forced to travel to suburbs for nutritious food (Winne, 2008). Another study that was conducted in Hartford, Connecticut, in 1997 through the Hartford Food System and the city of Hartford Advisory Commission on Food Policy looked into their local bus system and how it was connected to their food system in the city (Winne, 2008, p. 107). Several college students were given quarters to travel the bus system in order to address the efficiency of the routes (Winne, 2008). The study looked at the bus routes from the poorest areas in the city connecting to various places in the suburbs; "more than 32 percent of the people on the city's buses were using them to do all or some of their food shopping" (Winne, 2008, p. 107). Many of the users had high priced grocery stores within walkable distance, but had to use the bus system to reach affordable grocery stores within the suburbs. This study found that bus routes were not adequately transporting their customers to food stores, and if they were able to get to a grocery store, it was taking a significant amount of time that was unnecessary and not economical (Winne, 2008). The final study recommendations included that the bus routes be redesigned to have more direct travel to areas of need: clinics, jobs and food (Winne, 2008). In addition, it was suggested the buses have racks installed to hold groceries, which would enable people to buy and transport more food per visit (Winne, 2008). As a result of that study, the new

system moved 250 transit-dependent people to clinics, jobs and food through changing a 45-minute bus trip into a direct 15-minute trip (Winne, 2008).

Social and nutritional concerns

As has been stated in the previous sections, lack of access to healthy and affordable food is a form of food insecurity. “If a person can’t easily get to sources of nutritious food and/or can’t resist the siren song of fast food and other unhealthy food outlets, food insecurity is a part of his or her life” (Winne, 2008, p. 124). Research has shown that if a person does not have adequate funds to purchase healthy food, that person will more readily purchase unhealthy food choices that are higher in calories but lower in nutrition, which in turn relieves the hunger sensation immediately but does not aid in nutrition (Winne, 2008). For this reason alone many people who struggle with poverty and access to food also struggle with obesity and nutrition related disease. “Overweight and obese Americans now make up more than 60% of the population” (Winne, 2008).

Education of food literacy and knowledge of nutrition is a social concern that ties into the issues of obesity. Nordahl, (2009), states that our population has quickly forgotten the most common knowledge that used to exist: what food is and where it comes from. Because there are issues with cost of food and instability in health, it is essential that people begin to relearn which foods are nutritious and what parts of plants are edible (Nordahl, 2009). This involves knowing where your food comes from and how it is grown or how to grow it. Education is needed for people to understand where their food comes from, location and how it is produced; as well as how to grow one’s own food if they so choose. Currently, lack of education limits local food systems because many consumers are unaware of possibilities that exist, and also unaware of how to access local food options in general (Nordahl, 2009; Long, 2012c). Education is a tool that can be used now and in the future to promote the use of local food in order to alleviate food insecurity.

What can be done to create change?

Economic goals

“Community food security projects emphasize building individuals’ abilities to provide for their own food needs rather than encouraging dependence on outside sources such as food banks or public benefits” (Allen, 2004). By creating and supporting a food system that promotes self-sufficiency people will have a more financially stable access to food through viable sources within the community (Allen, 2004; Cultivate Kansas City, 2012; Kates, 2011; Delate, Martin-Schwarze, & DeWitt, 2005; Winne, 2008; Nordahl, 2009).

Because poverty levels will not be eliminated quickly, it is important to also address ways in which current food assistance programs can continue to work with local communities (Nordahl, 2009; Winne, 2008). Gleaning from grocery stores and producers has been shown to support many food banks and offer healthy and nutritious options for those who are in need (Winne, 2008). Gleaning from farms after harvest is a great way to access local food and get to know community members in a new way as well as understand where their food is truly coming from (Long, 2012c; Nordahl, 2009; Winne, 2008).

Aside from personal finances, community economics gain an advantage from local purchasing. By purchasing locally, one can support regional and local farms, which in turn supports community members and neighbors (Delate, Martin-Schwarze, & DeWitt, 2005). Purchasing from options such as farmer’s markets, Community Supported Agriculture (CSA) and other forms with direct consumer-producer sales, have a direct impact on the local economy (Delate, Martin-Schwarze, & DeWitt, 2005; Jackson, 2008).

Physical goals

Transportation, city layout and streets contribute to accessibility limitations, but streets may also represent a unique opportunity to create access for local food (Nordahl, 2009). “Streets represent the largest and most extensive network of public space in cities, and thus are significant places to explore edible landscaping, as every person in every neighborhood could be reached” (Nordahl, 2009, p. 53). Opportunities for public edible plantings along public spaces such as boulevards, medians and sidewalks could promote additional areas of access for healthy food (Nordahl, 2009). Through planting shrubs, trees, perennials and even annual plants that have edible fruit or plant parts, people have the opportunity to harvest fruit publically while they are walking through the community (Nordahl, 2009). Larger trees have additional advantages beyond bearing fruits or nuts, they also provide a perimeter for the street, create neighborhood character, and reduce storm water runoff (Nordahl, 2009). Edible landscaping enhances the community through aesthetics, environmental quality, social connections as well as food accessibility. “Incorporating agriculture along our streets helps communities attain broad equitable—and environmental—goals” (Nordahl, 2009, p. 53).

This idea of “public produce” or edible streetscapes and edible public space alleviates the accessibility problems by manifesting healthy produce options throughout the city (Nordahl, 2009). One would be able to access fresh, healthy sources of food throughout varying seasons (Nordahl, 2009). Accessibility opportunities can be manifested through transforming the current landscape into an edible public landscape that is accessible for all, no matter the income level. In the past, the idea of community gardens has been used to feed the nation. During World War II, victory gardens were established and supplied 40 percent of the fresh produce in America (Nordahl, 2009). The use of design is a great way to improve access to local and healthy food; examples of how to incorporate edible landscape include:

- Davenport, IA: pocket park garden and parking lot enhancement through edible plantings: earned \$37,000 for 2010 and 2011 (Nordahl, 2009)
- State houses and capital buildings growing produce outside on property: ex. Madison, WI, Baltimore, Maryland, and Montpelier, VT (Nordahl, 2010)
- Providence, RI (Providence Urban Agriculture Task Force): visions to double amount of food grown in and around community in next 10 years. Increasing home gardens, community gardens, commercial and urban agriculture businesses (Urban Agriculture Policy Task Force)
- Issaquah, Washington(Issaquah Walks): parks and recreation department maintains walks with 25 different varieties of edible plants, including trees and shrubs (Frisinger & Plough)
- Detroit, Michigan: vacant lot redistribution, in-fill of vacant space with urban gardens and urban farms (Kalish, 2011)

This use of design as a means of creating access to local and healthy food options will be detailed further in the Chapter 4 involving design aspects of local food access.

Social and nutritional goals

The next step in promoting access to healthy foods is through education (Nordahl, 2009). Many consumers are unaware of what options are available, as well as options on how to create ways to find and maintain healthy, local food (Nordahl, 2009; Long, 2012c). Informational conferences, workshops, literature, classes in schools, as well as promotions through extension have been contributing sources working toward educating people not only on the importance of purchasing and eating locally, but also avenues available to source local food (Feenstra, 1997; Delate, Martin-Schwarze, & DeWitt, 2005; Long, 2012c; Nordahl, 2009). Education is a tool that can be used to inform people of the opportunities to access healthy and local food options for all income levels: gleaning, farmer's market, community gardens, school gardens, Community Supported Agriculture

(CSA) and purchasing locally at institutions, grocery stores, and restaurants. “In the United States, the individual pursuit of self-interest is believed to produce the optimal social good. In no other country is the notion that people can succeed if they just work hard enough so deeply inscribed” (Allen, 2004, p. 124). By beginning this dialogue on the various options available and working together to promote accessibility for all income levels, there are options for all citizens to maintain a healthy and local diet (Nordahl, 2009).

Another social aspect of enhancing access to local foods can be found through sources providing community food security (Holben, 2010). Community food security deals with different aspects such as community nutrition, public health, nutrition education, community development and sustainable agriculture (Holben, 2010). Ways to increase access to food are suggested through means of farmers markets and community gardens in vacant lots, which lead to the increase in affordable, high-quality food as well as connect farmers to consumers (Holben, 2010).

Conclusion

There are numerous ways, as described in this chapter, that accessibility can be enhanced through economic, physical and social agendas. “‘Farming inside cities’ are reducing the amount of vacant and unproductive urban land, improving the public image of troubled neighborhoods, increasing the amount of neighborhood green space, developing pride and self-sufficiency among inner-city residents who grow their own food, and providing jobs for youths and adults” (Winne, 2008, p. 56). Through urban agriculture and other creative incentives to reach local food, an increase in local and healthy food access can be maintained.

Access to local food is an important strategy for reasons other than benefits in economics, the physical landscape, and social connections. Local food systems also provide a means for healthier and safer food, and resilience to changes in the future: “the bigger and more global the trade in

food,' Michael Pollan contends, 'the more vulnerable the system is to catastrophe'" (Nordahl, 2009, p. 27). With a decentralized system of small, local farms and community garden lots, our nation could never have the potential of infecting that many people over a vast geographic area (Nordahl, 2009; Long, 2012c). Through this local food system, our food security could be increased, and there would be ample sources of food to feed our neighbors, creating a sustainable food network (Winne, 2008; Nordahl, 2009).

The criteria suggested in this chapter works as a model for future communities. By incorporating strategies to produce food throughout the city, more residents would have the opportunity to eat a healthy diet whenever and wherever. Through education and practice, communities can learn how to grow, maintain, harvest, and process fresh fruits and vegetables, while creating aesthetically pleasing places and inspiring edible landscapes (Nordahl, 2009, p. xiv). If urban agriculture practices and concepts can be uniquely formed to specific public spaces where activities already occur, there is a greater possibility for the public edible landscape to take shape and succeed (Nordahl, 2009). Through integration of existing local agriculture outside and within cities, local markets, urban agriculture, and edible landscaping projects, there is a unique possibility for a holistic food system existing within every community and region. This concept will reduce vulnerability, and create options to access food programs, food education, and local food vendors; creating an opportunity for people of all incomes to have access to healthy food options and begin to incorporate a sustainable food system.

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Chapter 4: Design Aspects of Local Food Access: Precedents, Program and Planning and Design Intervention.

A paper yet to be submitted to a Journal publication

Courtney Long

Abstract

This chapter addresses design concepts for increasing access to local food through aesthetic design and creative concepts within neighborhoods and communities, both public and private. By introducing opportunities through a systems approach to public produce and edible landscaping, a model is formed for communities to increase public access to local food. Various scales of production exist within all areas of the city: backyards, community gardens, public access lots and streetscapes. If all of these spaces were transformed into functional edible eating spaces with aesthetically pleasing place design, cities would become more vibrant communities in which to live. By including these aspects with pre-existing markets, the current food system can be revitalized into a holistic edible landscape on all scales from backyards to neighborhoods, communities, cities, and their surrounding regions.

Introduction

As described in previous chapters, local food can be considered a community development tool, and has been presented as a tool of revitalization (Iowa Network of Community Agriculture Conference , 2011; Cultivate Kansas City, 2012; Kates, 2011; Nordahl, 2009). This research addresses the use of local food for urban revitalization through the use of urban planning and design. Urban planning and design activities have the opportunity to increase attention to local food and access to food in aesthetically pleasing ways on various scales of design (Hou, Johnson, & Lawson, 2009, p. 22).

Public access to forms of local food need to be addressed on multiple levels, such as mixed-use planning, street revitalization projects, vacant land redistribution, community gardens and others. Opportunities lie within urban planning and design, because through design, ownership of a space becomes more apparent, and people begin to have pride in their neighborhood (Nordahl, 2009; Winne, 2008). Street greening projects improve pedestrian ways and visual connections to assets within the city, allowing for improved accessibility measures to healthy, local food as well as beautification and ecological enhancements (Hou, Johnson, & Lawson, 2009, p. 99; Nordahl, 2009). Through other improvements within the city, a regional local food system and edible landscape can be manifested through redistribution of vacant land, public areas, as well as street and sidewalk design (Long, 2012b; Winne, 2008; Nordahl, 2009).

This type of design intervention (providing local food opportunities in an aesthetically pleasing way in neighborhoods, city public lots, and street design: local food access) can lead to community pride (Long, 2012b; Kates, 2011; Delate, Martin-Schwarze, & DeWitt, 2005; Nordahl, 2009). Local food options and design lead to a sense of place and identity, bringing people together through a common connection (Delate, Martin-Schwarze, & DeWitt, 2005).

It has been shown that “farming inside cities’ are reducing the amount of vacant and unproductive urban land, improving the public image of troubled neighborhoods, increasing the amount of neighborhood green space, developing pride and self-sufficiency among inner-city residents who grow their own food, and providing jobs for youth and adults” (Winne, 2008, p. 56). This research develops a model for regional food systems that link together all scales of local food design and marketing approaches: backyard gardens, school and community gardens, edible landscaping and public food, farmers markets, CSA, and peri-urban agriculture working to create a self-sufficient food

system for local and regional areas. This research addresses the following questions to show the premise of this model:

- What does urban agriculture look like?
- Who wants to participate and why?
- Where can it occur in an aesthetically pleasing way?

What does urban agriculture look like?

Diversity

Urban agriculture works with the diversity of land use, promoting different areas of land to be used for producing food. This can be found through various unique strategies, including: community gardens, backyard gardening, ornamental edible plantings within public space, street scape design, urban farms, and public plantings around state houses. Today, there are many new and creative ways to providing access to food within city limits. In the past, “there has been a tradition of agriculture within cities, and potential for urban agriculture to provide a substantial proportion of the city’s food needs” (Newman, Beatley, & Boyer, 2009, p. 44). Some people believe that access to food is a primary human right, and that food production should be a main function within city limits, as well as be “available to residents of cities through many different means such as roof gardens, allotments, community gardens, and backyards and through eco-villages specifically designed for urban areas” (Newman, Beatley, & Boyer, 2009, p. 44). Because of the diversity of this type of system, urban agriculture can create a self-sufficient and resilient system for cities due to the number of connections and various forms of food available (Hopkins, 2008). The use of a diverse system involving different scales and varieties of land use has the ability to create a resilient system, unlike monoculture cropping systems that lack diversity (Hopkins, 2008).

Street Systems

Through public planting options, people will have the opportunity to begin eating healthy, local, whole food produce from the street level. New designs are being incorporated in street revitalization projects, as well as parking lot and vacant lot redistribution programs that incorporate edible plants into the design process (Nordahl, 2009). The adoption of incorporating edible plants into our public landscaping creates a more accessible food system for people who are currently unable to access healthy food, and also creates a unique aesthetic for cities (Nordahl, 2011). In addition to public streets being reformatted to incorporate edible plants within medians, sidewalks, and public access ways, vacant lot redistribution and parking lot revitalization projects have also been occurring. Transforming these public areas that can be seen as changing eye sores into beautiful spaces for residents to have access to local food, improves physical aspects of the city and enhances revitalization methods (Hou, Johnson, & Lawson, 2009; Nordahl, 2009). Vacant lot redistribution is a way of utilizing what is currently empty land. Transforming these spaces into community gardens or edible park projects, can morph a once dull space into beautiful places for physical recreation and social connections within the neighborhood (Hou, Johnson, & Lawson, 2009, p. 160).

Community garden and school garden research

Primary research for this portion of the study occurred within the Enterprise Community in Des Moines, Iowa. The Enterprise Community is located on the north side of I-235 in Des Moines, bounded by Martin Luther King Drive on the west, 2nd Avenue on the east, Hickman Drive on the north, and University Avenue on the south. The Enterprise Community is primarily a low-income neighborhood with little access to grocery stores and means to access fresh, healthy food options. A community garden (Empowerment Garden) and an elementary school garden both were used in this thesis research study to analyze the impacts of participation within the programs.

Community gardens have shown to be a vital revitalization tool in literature (Hou, Johnson, & Lawson, 2009, p. 22; Winne, 2008; Nordahl, 2009), and were shown to have a strong impact on the community residents who participated in the community garden and school garden within the Enterprise Community (Kates, 2011)(See appendix A,B and C). Community gardens and other forms of public produce can be seen as a catalyst for community revitalization (Hou, Johnson, & Lawson, 2009). “Community gardens are a resource that individuals and families can use to meet every day needs while also facilitating active living, self-reliance, and reduction in consumption. As places that bring people together, both literally and conceptually, community gardens facilitate neighborly contact, which expand social networks and the sharing of knowledge and skills” (Hou, Johnson, & Lawson, 2009, p. 27). Through interactions within a community garden, neighbors form social bonds and begin to have ownership in the community in which they garden.

Mobile Market

Diversity is a strong suit for community development in urban agriculture. One aspect not yet addressed is a method for people to sell their produce or market their products to consumers. A Mobile Market design project (copyrighted in 2011) was developed during an Iowa State University Landscape Architecture Community Design studio project in 2010 (See Appendix D). While working with the Enterprise Community in Des Moines, Iowa, research and design conceptualization on developing community pride through the use of food and recreation was developed. The Enterprise Community is primarily a low-income neighborhood with little access to grocery stores or other ways to access local food. These accessibility concerns were addressed through design of a community garden and school garden as well as the Mobile Market. The Mobile Market design was completed with the goal to assist with marketing and the possibility of selling local produce and products from around the community, thus increasing access to healthy, local food options.

MOBILE MARKET NARRATIVE

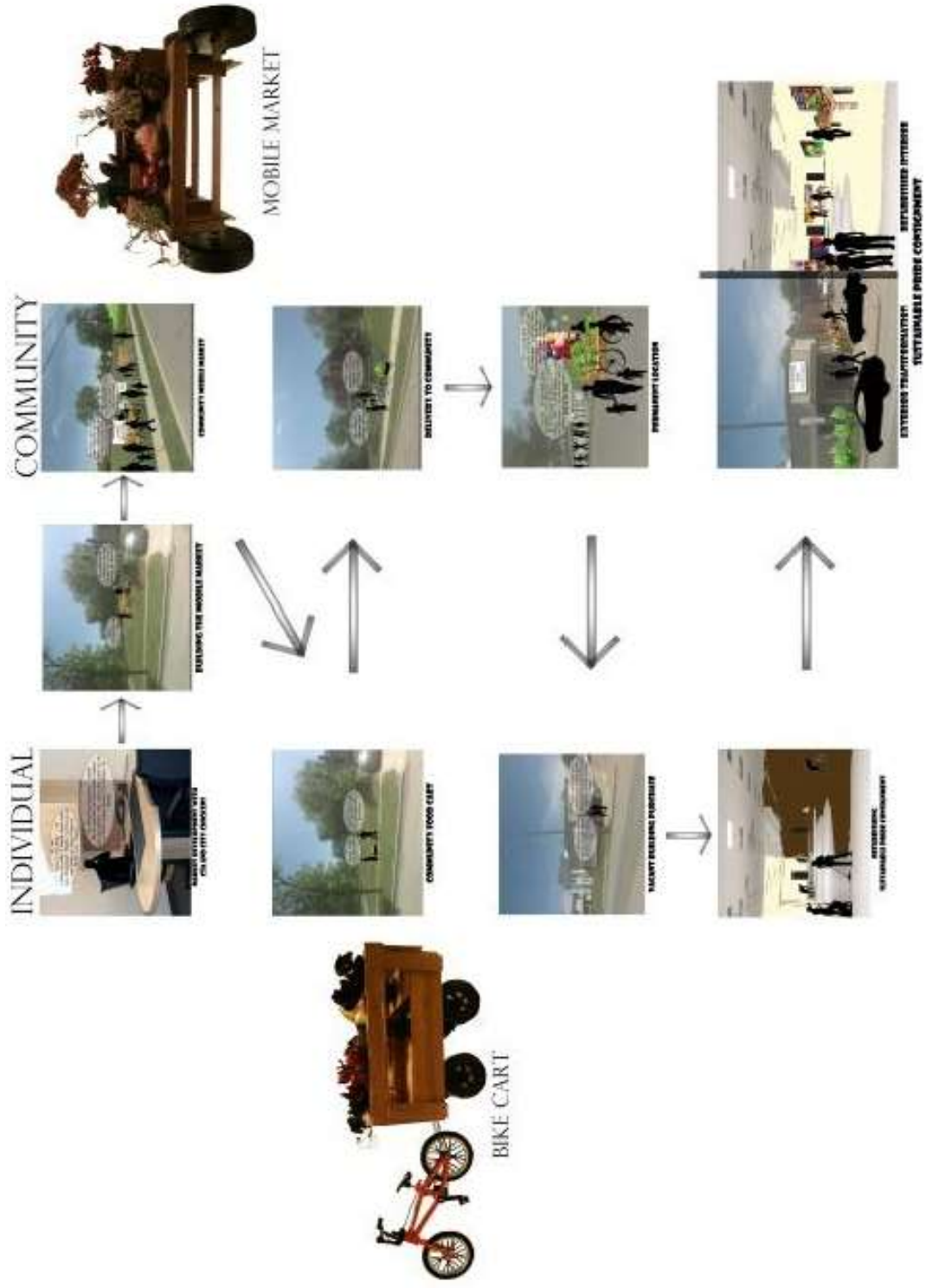


Figure 4-1: Mobile Market Narrative

Through this design studio project, a comprehensive plan incorporating school gardens, community gardens, edible streetscapes and permanent market options were cohesively designed. In addition to this, a Mobile Market cart was created in terms of design conceptualization and construction documents. This Mobile Market was designed to initiate connections between residents and as an icon for their community.

The Mobile Market is a cart that can be pushed on four wheels and provides a functional way for neighborhoods to sell local produce or other local materials and products. The goal for this design was to establish an icon for the neighborhood in their pursuit of community pride and revitalization of the community through local food access. Appendix D includes descriptions and images of the design of the mobile market. The Mobile Market was also designed to serve as a multi-generational learning opportunity for neighborhoods. Teaching construction craftsmanship as well as selling one's own product as well as teaching what types of produce grows in specific locations are different educational goals that can be addressed through this program. An addition to the Mobile Market prototype cart was an attachable bike cart that would create a job for a young person in the neighborhood to deliver food to those who were unable to attend the selected market days within the neighborhood (see Appendix D). The bike cart added another dimension to community outreach and connections with neighbors.

Who wants to participate?

This portion of the study describes the survey results from both the Empowerment Community Garden and Moulton Elementary school garden participants. The Empowerment garden is located within the Enterprise Community, comprised of raised beds and ornamental features with 10 adult participants. The Moulton Elementary school garden is located a few blocks away from the

Empowerment garden in a school yard. This garden was created as an after school program with children from the elementary school.

Both groups received a survey asking open and closed ended questions about their perceptions of working in their designated garden, as well as how their perception of food and accessibility has changed since their experiences. In addition, a focus group discussion was held with the Empowerment community garden participants. Issues were discussed in more detail about the benefits and personal opinions about the process and outcomes of participating in the garden. Following is a summary of these results.

Empowerment Garden

The community garden participants stated that there were therapeutic benefits to working in the garden: “Therapeutic- a lot of grunt work- but very therapeutic, and a good way to get some exercise, purposeful. And connecting with the kids from the neighborhood- even in the community garden brought together a lot of different types of people” (Participants, 2011) (see Appendix B)

One neighbor stated, “I think it reinforces what we already know about nutrition, but then making it so accessible is a big part. Going to the garden it’s all there. The garden allows us to try new things- master gardeners provided seed, planted the seeds and made myself eat it (trying eggplant/pepper)—tried certain things because you grew it (Participants, 2011) (see Appendix B)

When discussing individual’s perceptions and thoughts about the garden, it evolved that feeling connected to the community was a primary goal of the Empowerment Garden (see Appendix B).

Residents agreed that connections could be seen through personal or communal sense of identity, unity, or different links formed throughout these programs (see appendix A). All members were

very proud to be a part of the garden, and had expressed that they had learned many new things about gardening and their neighborhood from the experience (see Appendix A and B).

Their perceptions of the community became more positive, “This is kinda part of making things better... making things more positive. You used to walk down the street and notice the houses that were real nice, now you go down and notice the houses that are junky and stuff... now bad ones stand out, because things are better” (Participants, 2011)(see Appendix B).

Moulton Elementary School Garden

Children who helped with the school garden participated through an after-school program. In December of 2011, the children filled out a survey based on their perceptions of the school garden program (see Appendix C). Many stated that they learned about the importance of gardening and now had pride in growing their own food (Students, 2012)(see Appendix C). The children expressed ownership in the food they produced, and understood the hard work that went into gardening (Students, 2012) (see Appendix C). In fact, some children did not want to have their own garden in the future because of the hard work that is needed (see Appendix C). Within the program they were also able to try new types of fruit and vegetables, and they spoke of learning about healthy food choices (see Appendix C). Because this survey was simplified, there was not a high level of discussion about their perceptions.

Why Participate?

Fresh produce

The participants involved in the Empowerment community garden spoke of having increased access to affordable fresh produce (see Appendix A), and both groups were able to learn what type of food grew in their location (see Appendix A, B and C). Empowerment community gardeners spoke of trying new types of produce too, not just the varieties they were used to (see Appendix A and B).

The community gardening group had assistance from optional courses with Master Gardeners on tips and advice on what to grow and how to grow it. Through these classes, people received information on aspects of soil, proper planting techniques, gardening and nutrition information, harvesting, and season extension such as canning and freezing. This allowed for participants to grow produce more effectively and thus their garden was able to reap a larger harvest.

“Enjoyed the classes with the master gardeners- every week before starting to plant, a gentlemen came in that was very good- technical part of coming in and talking about gardening, really enjoyable. Learning from each other- when you think you know it all, you don’t” (Participants, 2011) (see Appendix B).

“I think because I was able to get fresh things at the garden- I will want a better quality in the winter time, instead of canned, I will use frozen. The garden put the freshness back in my mind” (Participants, 2011) (see Appendix B).

Therapeutic

The garden also was shown to be therapeutic and a retreat from the everyday happenings (see Appendix A). In addition to gardening, many participants also walked to the garden and had increased recreation from travel to and from gardening.

“It was easier for me to walk over to the garden for tomatoes than for me to get on the bus and go to Hy-Vee” (Participants, 2011) (see Appendix B).

Diet and health

Participating also reinforced diet and nutrition. Participants stated in the survey that they were more consciously choosing to eat fresh produce and vegetables (see Appendix A).

“I think it reinforces what we already know about nutrition, but then making it so accessible is a big part. Going to the garden it’s all there” (Participants, 2011) (see Appendix B).

“You knew what you should eat, but it became available now that they have a garden” (Participants, 2011) (see Appendix B).

Finances

Through growing their own food, participants became more committed to gardening because of financial support. They were not spending as much at the grocery store, and it was cheaper to plant

and grow their own food (see Appendix A). It was also stated that local food is important because it supports people financially (see Appendix A).

Community involvement

Community involvement was a large asset from both the school garden and community garden.

People stated that they made new friends and got to know their neighbors (see Appendix A, B and C). They began sharing a common interest in gardening and inviting people to their space or sharing produce at home or on walks to and from the garden (see Appendix A and C).

“Like working with other people in the community, and getting to know other ladies working in the garden—had mentors in the garden” (Participants, 2011) (see Appendix B).

“Harvest party also showed new ways of cooking. Fellowship that came about as a result- One of the highlights of the year” (Participants, 2011) (see Appendix B).

“I did, even walking toward the garden, I would talk to people and say “guess where I am going” – talk with people, and walking home with produce, would give away products” (Participants, 2011) (see Appendix B).

Where can it occur in an aesthetically pleasing way?

Public Design

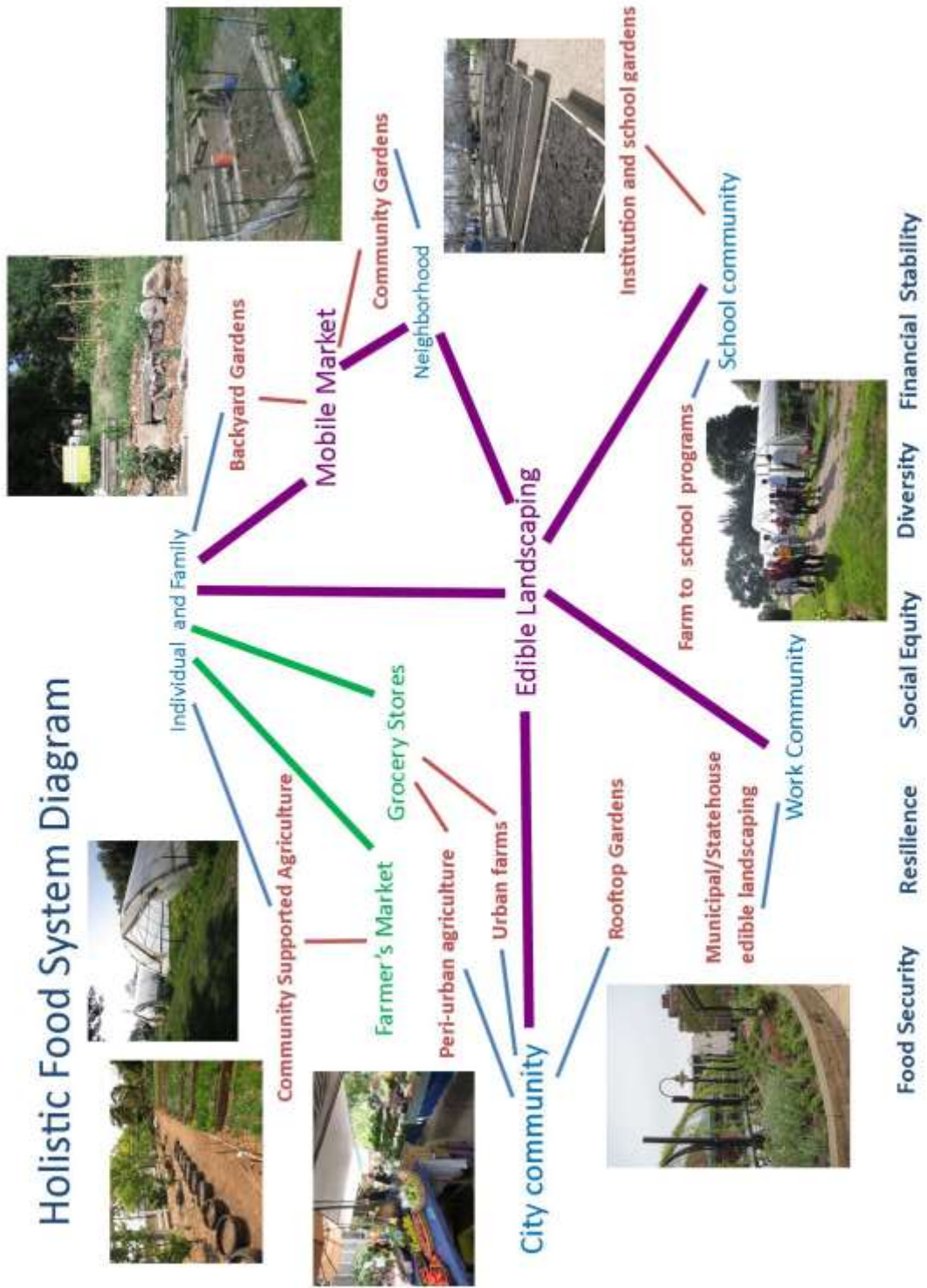
Public areas provide opportunities for unique design strategies to produce food throughout the city, creating equal access for all people (Nordahl, 2009). Through public produce design, people can eat healthy while meandering around the city or enjoying walks through neighborhoods (Nordahl, 2009). An aspect of this design approach which is important to mention, is that of education. Through edible landscape design, the public will have to be taught how to grow, maintain, and harvest fruits and vegetables as well as know what plants and parts are actually for human consumption (Nordahl, 2009). A holistic food system design through edible landscaping has the

ability to catalyze into a unique strategy towards beautiful revitalization projects and accessible food options for numerous people around the city (Nordahl, 2009; Winne, 2008).

If a community would install and plan for city-wide urban agriculture, the designer needs to be aware of the different components and qualities of the space. By incorporating existing features as well as unique additions to the area, the public space can be transformed into a functional eating habitat and public place (Nordahl, 2009). “It is only natural that something as universal as the desire to eat healthy be fulfilled in our urban public spaces, and that these places teach us a thing or two about food, the environment, and each other” (Nordahl, 2009, p. 43).

Installing edible landscapes must create aesthetically beautiful sceneries for citizens to enjoy (Nordahl, 2011). By creating this sense of place, ownership in the place will evolve, leading to pride in the community and self-resilience to maintain the newly designed place (Nordahl, 2009; Winne, 2008; Hou, Johnson, & Lawson, 2009). Ways to improve the aesthetics of edible produce includes incorporating ornamental plant options (Nordahl, 2009). Some fruits and vegetables come in ornamental varieties and some are just naturally beautiful. It is also suggested to incorporate plants that have symbiotic relationships to produce or those that complement the landscape design (Nordahl, 2009; Hou, Johnson, & Lawson, 2009). Nordahl, 2009, suggests “roses with tomatoes, rosemary and citrus mixed with Fornight lily, fennel mixed with Purple Fountain grass, Persimmon and cherry trees interspersed with dogwoods” (Nordahl, 2009, p. 110).

Figure 4-2: Holistic Food System



Community Gardens

Community gardens were examined in detail throughout this study. It is important to note the aesthetic character that community gardens can have along with their obvious connection with accessibility to food; community gardens are typically the easiest public form of food that can become an eye-sore to the community (Nordahl, 2009). However, if maintained and planned correctly, community gardens or vacant-lot garden redistribution can have a great impact and beautification element to lots within the cityscape (Hou, Johnson, & Lawson, 2009; Nordahl, 2009; Winne, 2008).

Community gardens can be viewed as a central location or gathering space within a neighborhood or city (Hou, Johnson, & Lawson, 2009). Community gardens create important links within the city to areas of green space and recreation. Many times the streets adjacent to community gardens become green streets and have additional plantings that incorporate edible perennials. Through tying the street into the design of a community garden space, the sense of place can become enhanced and move into different areas of the neighborhood.

Vacant land redistribution can also connect these spaces together by filling in existing gaps within the city. These gaps are underutilized land resources that can be re-established as community gardens or public parks which adds to the dimension and diversity of a holistic local food system within a city (Hou, Johnson, & Lawson, 2009; Nordahl, 2009). Along, with research in the Enterprise Community, a vacant lot survey was established in order to have a uniform study method for deciding lots that would be appropriate for re-use as a community garden (see Appendix E). These lots also provide for social connections through improvement projects; while constructing a new garden location, many residents become acquainted and have common interests in the beautification of their city (GPSA Colloquium, 2012; Winne, 2008; Kates, 2011). Through this

interaction, once again pride becomes an aspect of the community, and leadership is fostered (Hou, Johnson, & Lawson, 2009).

Streetscape Design

Streetscape design can pull together the entire region from all scales of the local food system:

backyards, neighborhoods, community, and citywide. By planting along streets and improving walkability aspects on sidewalks and in public rights-of-way it can transform current eye sores into a beautiful transitional space. Streetscapes have the ability to provide planting, food, barriers, comfortable resting spaces, shade and sunlight, and if designed correctly, they can bring people into a space rather than deterring activity (Nordahl, 2011). Because streetscapes form the corridor through many different areas of the city, this is a vital area of design for edible landscapes. If designed correctly, sidewalks, streets, medians and additional corridors such as interstate exchanges, can begin to show the city's efforts toward edible landscaping and urban food systems. Through the use of design, an integrated food system can start on the perimeter of the city, and become more detailed and creative as it transitions into unique neighborhoods and communities.

Historically, the activity of "greening streets" has been seen as an aesthetic enhancement, providing fundamental improvements to existing hardscape within the city (Nordahl, 2009). The Greening Streets movement has been integrated in many cities around the United States, such as New York, Seattle and Portland (Nordahl, 2009). This type of design helps alleviate storm-water runoff, which reduces pollution in water sources within the city, as well as retains water on site, assisting in maintenance constraints (Nordahl, 2009). By increasing the amount of green space in cities, green streets and urban agriculture lead to improvements in air quality and provide habitat for urban animals (Nordahl, 2009).

Street spaces such as sidewalks, medians, boulevards, and alleys also provide great space for larger fruit and nut bearing trees and shrubs. These larger plants assist in storm-water maintenance and also assist in providing shade, minimizing the heat-island effects in inner-cities that are surrounded by hardscape and little shade options (Nordahl, 2009; Long, 2012c). In addition, street-side plants create interest and character in a neighborhood and can lead to new spaces to be explored by neighbors and visitors (Nordahl, 2009). Thus, incorporating diverse options of agriculture and edible ornamentation can lead to equitable access of food as well as increased aesthetic benefits for the community to enjoy (Nordahl, 2009).

The Market and Mobile Market System

The various items of urban agriculture that have been addressed are useful options for self-sufficiency within cities. A network of different scales of agriculture and local produce (both ornamental and functional) is essential for people to have equitable access to healthy local food. In addition, it is important to include outside resources and entrepreneurial aspects that exist within this type of system that are essential for the success and resilience of a multi-faceted (holistic) approach such as this. Markets and opportunities to purchase local food are fundamental aspect of a local food system, and these spaces will need to be available within all areas of a community to successfully achieve equitable and accessible local food. The Mobile Market, previously described, was created to address access for residents who were unable to reach a community garden or other forms of fresh produce, but still wished to purchase food within their neighborhood (see Appendix D). This is an option for neighborhoods to consider, as it promotes sustainability on the neighborhood scale, while promoting community pride and resilience through a trusted relationship and dependence on one another.

In addition to supply at a neighborhood scale, other local markets should be established within cities to support urban agriculture and a holistic food system. Local farmer's markets that support larger productions in city or on the perimeters of cities could be established to continue to address the option of local food accessibility. Options to increase local food availability in convenience stores within inner cities would also promote access to healthy food alternatives. Grocery stores can purchase locally, as suggested within Chapter 3. With the addition of local food markets, the system becomes a closed loop and addresses opportunities for all residents: those wanting to plant their own garden, creating spaces for those who do not have space currently for gardening, street-side harvesters, and city dwellers that would rather purchase their food than plant their food. With this closed loop system, there is an increased possibility of a community become self-sustainable and resilient to changes in the future.

Conclusion

Understanding the extent to which communities demand access to fresh, affordable produce is essential to visualizing and creating a design of comprehensive urban agriculture settings (Nordahl, 2009). Creating visible and accessible food reminds people of different food choices, and invites residents to participate in a local food system (Nordahl, 2009). By bringing together the multitude of opportunities for local food, it is possible to create a holistic and functional system of various scales of agriculture. By incorporating urban agriculture and edible landscaping design into the features and assets that already exist within a city, food production can increase, the city's aesthetic can improve, and the environmental stewardship can evolve. This integrated food system can lead to revitalization, community pride, as well as promoting healthy, local food, leading to improved diets and social change.

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Chapter 5: General Conclusion and Recommendations

Summary of chapters

Chapter 2: Urban Food and Community Revitalizations; an argument for comparison study in urban agriculture

This Chapter described different approaches to the use of urban agriculture and the opportunities to use urban food systems as a revitalization strategy within communities. Primary study areas for this research included: Havana, Cuba, Kansas City, Missouri, and Des Moines, Iowa. Research in these study areas concentrated on implementation of urban agriculture, urban agriculture as it related to community pride and community revitalization projects through urban agriculture. The ultimate goal of this chapter was to provide a strategy and model for communities to use in the future regarding implementation of urban agriculture food systems as an appropriate measure to support community revitalization projects.

Chapter 3: Food Security, Planning and Program Comparisons: Accessibility Constraints with Local Food in Inner Cities

This Chapter examined accessibility constraints to local and healthy food options within inner cities. This included economic, physical and social aspects of local food accessibility. Strategies were then suggested through means of economics, physical manifestations in cities, and social opportunities. The ultimate goal of this chapter was to examine the effects that local food systems can have on food accessibility issues within inner cities. Holistic food system models were suggested for communities to improve the accessibility of residents to local and healthy food choices. These strategies included urban agricultural practices as well as altering current production systems to create both a holistic management system of our food and equitable access for all citizens.

Chapter 4: Design Aspects of Local Food Access: Precedents, Program and Planning and Design Intervention

This Chapter addressed design concepts for increasing access to local food in an aesthetically pleasing way. By introducing opportunities through a systems approach to public produce and edible landscaping, a model was formed for communities to increase public access to local food. Various scales of production exist within all areas of the city: backyards, community gardens, public access lots and streetscapes. If all of these spaces were transformed into functional edible eating spaces with aesthetically pleasing place design, cities would become more vibrant communities in which to live. By including these aspects with pre-existing markets, the current food system can be revitalized into a holistic edible landscape on all scales from backyards to neighborhoods, communities, cities, and their surrounding regions.

Responses to study questions

To guide this study, three main questions were posed:

- What is the role of local food as a revitalization tool?
- How can local food options be created to improve accessibility to food within metropolitan cities?
- What are the design aspects of local food access and how do they contribute to community revitalization?

The next paragraphs discuss responses and strategies to these questions found through the research discussed in each of the chapters within this thesis. The outcome of this study is to show the benefits and strength in holistic local food systems and the impact that it can have on urban revitalization in inner cities through increasing accessibility, promoting self-sufficiency, improving social connections, improving environmental quality, and enhancing the local economy. Following the responses and strategies to the posed questions, limitations of the research will be discussed as well as the contribution this study can have, along with recommendations for future research.

What is the role of local food as a revitalization tool?

As described in previous chapters, local food and urban agriculture can have a significant impact as a revitalization tool for a community through social connections, building community pride, enhancing nutritional food access, improving environmental quality and building the local economy. By establishing a holistic local food system, there are many opportunities that occur. Different scales of production and design lead to an integrated systems approach to solving the problem of food access. By incorporating these different levels, a multitude of people are brought together leading to a multitude of connections within the community.

Promoting local food production as a revitalization tool can bring nutritious meals into homes by making nutritious food more accessible via backyard gardens, community gardens, peri-urban agriculture or other sources of public edible food access. Increasing the accessibility to local, healthy food options contributes to revitalizing social equity and equal access to food. Local food serves as an economic stabilizer in revitalization by increasing local business purchases and communities buying from each other rather than imports. Introducing local food systems can also enhance the environment and lead to revitalization through beautification. As described in Chapter 4, public edible foods and ornamental plants help in storm water runoff, pollution, and overall environmental health because of increased green space (Nordahl, 2009). Creating beautiful city streets, community parks, and over-all improvements to landscape amenities, people are more likely to use a space and have pride in their area (Nordahl, 2009). Overall, by introducing local food systems and practices, communities can promote self-sustaining, resilient communities. After community pride is manifested, this pride can become a catalyst for future projects and improvements in the neighborhood, leading to other improvements outside of food production and contributing to overall community health and well-being.

How can local food options be created to improve accessibility within urban cities?

Local food can be incorporated into many existing aspects of urban life. There are opportunities to

increase access in existing grocery stores, convenience stores as well as the addition of farmers

markets. Other options exist through the promotion of Community Supported Agriculture and

working with peri-urban agricultural producers, or producers adjacent to the city. By making these

connections, people are able to connect with their local farmers and create relationships leading to

an integrated local food system. Other scales that can be added to this equation are public access to

local food on city streets, urban agriculture, community gardens, and the promotion of educational

tools for backyard garden spaces. When edible food is accessible as a public right of way, people are

able to equally and equitably access food no matter their income level or location within the city.

Instead of food being a privilege, food can become a basic right and option for all residents. The

way this type of system begins to be incorporated into existing cities is by filling in the current gaps

that exist within the local food system. By incorporating food systems and public food options into

spaces that are currently vacant or lacking, an integrated holistic food system can be manifested and

unique to each location. Because gaps exist on all different scales and places in a neighborhood and

community, each method of revitalization must be unique and created for that area. Some cities

may need extensive green space added or community gardens, while others need additional access

to sources on the perimeter of the city, thus increasing the markets are essential. Improvements to

planning and programming within a city will be the most important issue.

Through creating these changes and implementing access within all areas of the city: businesses,

institutions, grocery stores, markets, public streets, community gardens, etc., food has an

opportunity to become a guarantee for residents instead of a luxury. After incorporating at various

levels, it has the ability to begin to influence the financial stability of growers and improve local

development and growth due to a self-sustaining system in food development. Through comprehensive programming and design, a holistic food system can lead to a solution in creating equitable food access.

What are the design aspects of local food access and how do they contribute to community revitalization?

A holistic food system comprised of different scales of agriculture, as spoken to in previous sections, (individual gardens, community gardens, public streetscapes, urban agriculture, and peri-urban agriculture) has the ability to transform a city into an aesthetically pleasing community that sponsors beauty, health and equity to local food sources. Numerous different design opportunities exist with a holistic systems development through agriculture. Through creative integration, local food programs and planning options can be implemented into a holistic food system to benefit residents socially, economically, and environmentally.

Design aspects include planning the location of public, edible plantings and deciding what types of public land use is appropriate: community gardens, vacant land redistribution, street scape design and other forms of edible landscaping, or urban farming. When these different areas begin to be implemented and placed throughout the city, gaps can be filled through edible plantings leading to an integrated system and cohesive design for the city. Imagine streets being transformed into walkable access ways to neighborhood parks and community gardens, or vacant lots being revitalized into urban farms creating equitable local food access to low income neighborhoods and various incomes alike. Through the transformation of space, current public spaces and private areas can be utilized in a way that all residents can benefit and the community can be revitalized physically, socially and economically.

Limitations

As described within the introduction, limitations to this include lack of current literature and case study examples dealing with urban food and local food access. Although this topic is growing in popularity, few successful and well implemented strategies exist today, especially those that are accessible and well known. Limitations also include personal travel opportunities, as areas incorporating local food in inner cities are geographically widely distributed, and thus are discussed only in terms of literature review.

Implementing holistic food systems in urban cities requires managing the food supply to match consumer demand. In other words, maintenance can be minimized when the carrying capacity of each agricultural activity is effectively estimated: How much food *should* public space produce, rather than *could* produce (Nordahl, 2009). These questions pose another limitation to understanding the demand for local food in an area. In order to implement a strategy such as this, and have the edible landscape used and not wasted, research must be conducted in a city prior to the infrastructure. Matching expected crop yields to numbers of people likely to harvest the produce is paramount in reducing management headaches of urban agriculture (Nordahl, 2009).

Contribution

The contribution of this thesis is to suggest a conceptual model and strategies for communities in using agriculture and local food as a tool for revitalization. With the incorporation of a multi-faceted, holistic systems approach to urban agriculture and local food, it is possible for communities to begin sourcing food in ways that are environmentally sound, socially acceptable, aesthetically pleasing, and financially stable.

In addition, this study will add to the literature that currently exists, because the study of urban food systems is a current and recent conceptual tool for revitalization. The outcome and primary goal of

the research is to provide alternative means to make local food available to all residents and create a systems model for communities to incorporate into their cities. This resolution to create local food systems has the opportunity to bring nutritious meals into our homes, place money into our local economies and promote self-sustaining, resilient communities.

Recommendations

What was planned, but was unable to complete within thesis study?

Building a prototype of the mobile market

The goal for a portion of this thesis study was to build a prototype of the Mobile Market and conduct analysis studies on the strengths and weaknesses of the uses of the Mobile Market within the Enterprise Community (see Appendix D). Due to time and lack of funding, this portion of the research was unable to be completed, but would be a next step in researching the importance and magnitude of a neighborhood market associated with a community garden.

Model of an ideal holistic food system

A goal accomplished within the Enterprise Community was creating a vacant lot survey to address the different principles that should be in place for a lot to become a community garden (see Appendix E). A next step to this survey, as an instrument for the Enterprise Community and a model for others, is to create a map of the community and what it would look like if a holistic food system were used as a revitalization tool. By using the base conceptual diagram of a holistic food system shown in Chapter 4, a model of holistic systems that communities could implement would be the next step. In addition, conceptual drawings were created during the Landscape Architecture studio in 2010, also shown in Chapter 4, but a more in depth approach to the design, plantings, and community involvement would be beneficial as a research tool and model. This would allow for phasing as funding became available, and would also generate ideas for various communities to look at their own neighborhoods in creative ways.

What are the next logical steps in the research?

Post Occupancy Studies (POS):

Follow up studies on communities where urban agriculture has already been implemented is a logical next step in the research. Conducting surveys to see the successes and failures, strengths and weaknesses of these programs (from residents' points of view), will be an essential next step in the programming process. Although professionals and academics can write about such an idea, it is important that the people living in a neighborhood, redefined by local food, are also accepting and desiring of the change.

The POS studies should examine what people would like to continue, change, add or remove. With open and closed ended questions people can give brief examples of what is working well and what isn't. Through these responses, communities can begin renewing the interest and continue projects, while other communities can learn from their examples and try new approaches.

What is next for the process of incorporating local food programs into communities?

Educational Programs

For communities that already have urban food systems established, it is important to start creating avenues of education for their community members. Residents need to understand that they can harvest the local produce, and they also need the education on how and where to find the produce. In addition to location of the available food, it is necessary to start education programs on what types and parts of plants are edible. These programs can also focus on how to grow your own, maintenance and harvesting suggestions for picking public produce or other forms of produce from community gardens. Through education, waste from public edible produce can be minimized, people can become more self-sufficient, and they land will be better utilized.

Standard Community Survey: Physical Features

Creating a standard community survey on where appropriate spaces exist to create holistic food system programs is essential to appropriately use the already existing landscape within a city. A survey would numerically scale the appropriateness of a site for different food system features that would be incorporated within a community. By using a scale, people could decide what spaces were better suited for community gardens, urban farms, urban orchards, potted plantings, markets, etc. This type of survey would address many different aspects including: location, space shape, soil quality, and context to surrounding landscape and building features.

Standard Community Survey: Use

Creating a standard survey for community residents to address personal needs and desires for local food would assist in understanding what parts of the city are in more need of access to local food. If this study was given to neighborhoods around the city, the necessity of access to local food could be addressed, and thus planned in a better way.

For instance, if neighborhood A was in strong need of higher access to food and desired to have public produce, it would be logical to assume that they would harvest and use the produce available. While, if neighborhood B was interested, but had little need, perhaps because they had a grocery store nearby, smaller amounts of local produce would need to be established.

Model example: neighborhood A could then work to create a community garden, and possibly revitalize vacant land into a community garden as well, while also incorporating edible streetscape design to fill in the gaps between these places. Through educational programs, this neighborhood would receive information on where different public edible landscaping were established, how to have a plot at the community garden, and when it was appropriate to harvest from the street trees. The educational programs could also assist in incorporating backyard gardening or potted gardens at

home. On the other hand, neighborhood B may incorporate minimal edible landscaping such as potted plants with public produce on their main corridor to promote awareness, and educational programs to teach about growing their own at home.

In essence, it is important for the development of a holistic food system to be tailored to the individuals and communities in which they are trying to help. If they are not uniquely created for each community, the service of providing local food to create benefits for accessibility, social connections, financial stability, and environmentally sound management may go to waste because it is simply may not being used appropriately. In fact, it may become a burden and an increased eye sore if not taken care of. It is essential for everyone to be involved, thus creating a proud and inter-connected web and sustainable program.

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Appendix A: Empowerment Garden Survey Results

1. *Which garden have you participated in?*
 - Empowerment Garden
 - Empowerment and Moulton Garden
 - Community
 - Empowerment Garden- 19th and College
 - Empowerment Garden
 - College and 13th
 - Blank
 - Blank

2. *How many hours (estimate) have you worked with the garden?*
 - 50+ I really don't remember, but this is a rough estimate
 - In the garden 60 hours
 - Actual work in the garden: 20 hours; Planning, classes etc. 20 hours
 - Actual garden working time—40 hours and planning time
 - 20
 - 20
 - Blank
 - Blank

*Varies between 20-50 hours

3. *Has this experience benefited you or your family? If so, in what ways?*
 - Absolutely: satisfying, fulfilling, therapeutic, educating, informative, enlightening, etc.
 - Yes: by giving us food to eat and not spending money at store
 - Yes: Fresh produce, information I didn't know about gardening, worked with other neighbors and community members
 - Yes: Pride in what was accomplished, loved getting the produce from my efforts, meeting/helping/working with other to accomplish our garden goals
 - Yes: yummy fresh veggies and building relationships in our community
 - Yes: fresh produce
 - Yes
 - Blank

4. *On a scale of 1-5, how much have you enjoyed this experience (5 being the most); would you like to use a garden again next year?*
 - 5+: Yes!
 - 5: Yes
 - 4: Yes
 - 5: Yes
 - 4: Yes
 - 4: Yes
 - 5: Yes
 - Blank

5. *Has this experience led you to want to start a garden at your home? If so, for what reasons?*
- Yes: Can keep a closer watch on it, but will also continue with community garden
 - Yes: To watch things grow and have more produce
 - No: Community Garden is right behind my house-less than a half block away. Don't need one at my home
 - Yes, if I had the room; I love planting and growing flowers and vegetables. Have been doing it for years!
 - No and Yes: No b/c we don't have the space; yes b/c it would be easier to have it closer
 - Yes: It would be easier to care for if it was right outside our door, we just don't have the space/sunlight
 - Yes: Would have to be closer to home, but live in a senior home, so we don't have the space
 - No
6. *In what ways have you or your family's diet changed from participation in the garden?*
- More consciously including veggies in greater portions in meals
 - Not much but we eat fresh produce
 - Ate more tomatoes, green beans, and carrots
 - Learn to eat new vegetables and finding new recipes to cook
 - It hasn't
 - More locally grown produce
 - Not much, but we sure had more salads this summer, our tomatoes were wonderful
 - None
7. *Has your viewpoint on growing your own food changed? Why?*
- Yes, it's intensified my desire to and commitment to doing this: both finances and nutrition. Also the self-satisfaction of knowing how this ultimately impacts the community and the environment
 - Yes: By not spending much at store and eating healthier
 - Yes: It's not as hard as I thought. We had some good fresh vegetables.
 - Yes: It is much cheaper to plant and grow your own food. And it tastes better. I'm on a limited income and it allows me to have more produce than I can afford to buy at the store.
 - No: Stayed the same. I garden for nutrition, finances and the environment
 - No: I've also thought it was important
 - Yes: nutrition
 - Yes: the taste is much better and it is cheaper
8. *Has your perception of the importance of local food changed? In what ways?*
- Yes: brought more awareness to the issue
 - Yes: I see more value in eating and buying local
 - Yes: Local food tastes better, is relatively easy to grow. It's important financially for some people
 - Yes: Usually, the produce in the stores was picked before it ripened or grown in a hot house—possibly was exposed to chemicals, etc. I can grow my own the way I want to and pick when ripe.

- No: I have always thought local food important
 - No: I've always thought it was important
 - Yes
 - Yes
 - No
9. *Has your perception of the neighborhood community changed?*
- No
 - No, my perception has always been positive regarding my community
 - A little: Met a few more people who were interested in gardening and their community
 - Yes: People can work together to build something that everyone can use. Sharing in that experience and benefiting from it is invaluable
 - Yes: I have gotten to meet new folks and have seen a diversity of views I was unaware of
 - Blank
 - No
10. *Have you grown closer to your community or school garden community?*
- Yes: More contact than in the past as a result of developing common interests in gardening and working side-by-side in our gardens toward a common goal
 - Yes: By getting to know the people in my community better
 - Yes: I know community garden members that I didn't know before and enjoy their company
 - Yes: Gaining new friends by working together
 - Yes: I think I have gotten to know new people
 - Yes: I've met new people
 - Yes: meeting new people
 - No
11. *Do you feel united and in touch with your neighbors through participation in the garden within your community?*
How did your relationships change with other community members participating in the garden?
- Yes: Discovered similar values, interests and again, working toward common goals; i.e. health, nutrition, environment, saving \$
 - Yes: It didn't much I just got to know them better
 - Yes: Garden extended my involvement in the community. I am involved in other neighborhood things; neighborhood association: I know them better. Shared gardening and other ideas-had potluck meal with them
 - Yes: I have gotten to know all my garden project friends even better with each project that we have worked on
 - Yes: more knowledge of others
 - Yes: met new people
 - Yes: It's always nice to meet new people
 - Yes: I have a good relation with the participants
- **all yes

12. *Should additional gardens be installed throughout the Enterprise Community? If yes, where would you locate them?*

- Yes: not sure- to be discussed
- Yes: I don't know
- Yes: Maybe at the Grubb Y or King Irving Neighborhood Association Pocket Park
- Yes: I like them in the neighborhoods
- Expand current ones and see if there is demand
- Yes: not sure, but the more the better
- Blank
- It would be nice
- **All but one yes

13. *What other avenues of food production can you see working in your community?*

- Possibly canning, preserving, baking
- I don't know
- Not sure
- More affordable farmers markets
- Producing food for the community, not just ourselves. Do through churches where the church community has a garden to share the produce with the church community. Not me growing for me
- Have churches and other community groups start gardens and donate produce to the homebound and pantries
- Planting of fruit trees
- ?

14. *How would you get these activities started?*

- Using educational resources; ISU extension, internet, work-of-mouth via community group meetings
- Blank
- Blank
- Work together with my garden group to accomplish this. Spread the work to like-minded people
- Churches, apartment buildings, libraries, and parks could all be places to do this from and recruit master gardener volunteers to maintain along with community members in the area that would be primarily responsible.
- Approach church groups about it
- Blank
- Blank

Demographics:

1. *What is your gender?*

- Female
- Female
- Female
- Female
- Male

- Female
 - Female
 - Male
- **6/8 females
2. *What is your age?*
- 50-65
 - 40-50
 - Over 65
 - 50-65
 - 20-30
 - 20-30
 - Over 65
 - Over 65
- 3 over 65; 2 50-65; 1 40-50; 2 20-30
3. *What is the highest level of education you have completed?*
- Bachelor's degree
 - Bachelor's degree
 - Bachelor's degree
 - Trade/technical/vocational training
 - Bachelor's degree
 - Bachelor's degree
 - High school graduate/ some college
 - High school graduate
- **5 bachelors; 2 high school; trade
4. *How would you classify yourself?*
- Blank
 - Black
 - Caucasian/White (my children are bi-racial)
 - Caucasian/White
 - Caucasian/ White
 - Caucasian/ White
 - Black
 - Black
- 2 black; 4 Caucasian—; 2 blank
5. *What is your current marital status?*
- Widowed
 - Married
 - Widowed
 - Divorced
 - Married
 - Married
 - Widowed
 - Widowed

-4 widowed; 3 married, 1 divorced

6. *How long have you lived in your neighborhood?*

- 20-29 years
- 10-19 years
- 30-39 years
- Less than 5 years
- Less than 5 years
- Less than 5 years
- Over 40 years
- Over 40 years

*2 over 40; 1 30-39; 1 20-29; 1 10-19; 3 less than 5

7. *What is your current household income in U.S. dollars?*

- 20,000-29,999
- Under 10,000
- 40,000-49,999
- 10,000-19,999
- Blank
- Blank
- Blank
- 20,000-29,999

*Varies- highest 40,000-49,000

8. *How many children under 16 years old live in your household?*

- 1
- None
- None
- None
- 1
- 1
- None
- None

*Between 0-1 child

9. *What is your profession?*

- Retired teacher: now learning coach/program coordinator for outside the box @ CV a graduation initiative
- Work in community and teacher
- Retired Social Worker
- Graphic Designer
- Social work
- Non-profit
- Retired cook
- Retired

Appendix B: Empowerment Garden Focus Group

What was your favorite part about working with a garden project this summer?

Allowed to have *own* garden- first time in years that could have own garden. Even though had to walk a little, it was rewarding.

And connecting with the kids from the neighborhood- even in the community garden brought together a lot of different types of people, just infectious with people asking questions. People were interested in gardening on their own.

Children very excited to help

Like working with other people in the community, and getting to know other ladies working in the garden—had mentors in the garden. We had a little garden when we grew up, now have responsibility for own space. Close to my house- easy to bring tools/water over. Really handy- Enjoyed the produce received from the gardens.

Amazing to be able to go to the garden and be able to fix dinner- son would even go to the garden and sauté with chicken-

What did you learn from your experience?

Enjoyed the classes with the master gardeners- every week before starting to plant, a gentlemen came in that was very good- technical part of coming in and talking about gardening, really enjoyable. Learning from each other- when you think you know it all, you don't.

Literature came away with- each class came away with notebook- Many questions were answered in the book-

Actually doing it—learn different questions about how to garden

If you could change something about the operations of the garden, what would it be?

I wish Alecia had more help- Can see her getting help, see certain people growing, but wish she had more help as well as getting water to us- have barrels now- but still not enough.

Would have like to see build the shelter- it looks a little junky,

Bothered me, but when you know where it came from, and there are steps being made—it just is taking longer than we thought. Process, have a vision-

Farming is not pretty- but I have sweet potatoes that I am going to take home to Kansas City

Watching the potatoes grow was so exciting. – Just amazing.

Do you think that these gardens should continue? Why or why not?

Absolutely. **YES!!!**

Do you think that there is room for expansion?

Where? (existing sites, additional sites, vacant lots, etc.)

I think at some point there is going to need to be, especially when we bring people on board. And there needs to be other places in the neighborhood.

Vacant lots- and areas to connect

King Irving, Neighborhood Association, actually has two plots- planted asparagus- 18th and Gelet

Big stone that has names about who has contributed to neighborhood. – Person helped with mowing, but would sometimes plow over planted items. It would make sense if it was going to expand it would make sense to include---but has to go through board. Some people are grouchy. Could include prairie grass as well- Food is more valuable

It was easier for me to walk over to the garden for tomatoes than for me to get on the bus and go to Hy-Vee.

No time for apprehension- ended up in the current community garden—working N.A. like going through congress.

Have you learned more about preparation and food nutrition?

If not, how can this be implemented in the future?

I think it reinforces what we already know about nutrition, but then making it so accessible is a big part. Going to the garden it's all there. The garden allows us to try new things- master gardeners provided seed, planted the seeds and made myself eat it (trying eggplant/ pepper)—tried certain things because you grewed.

I tried it because it was something new, and that's part of gardening- and it's accessible. Wanted to try it because it was new.

Looked up recipes on how to cook- there were a ton of recipes.

Harvest party also showed new ways of cooking. Fellowship that came about as a result- One of the highlights of the year.

You knew what you should eat, but it became available now that they have a garden.

Feeling connected to a community is a primary goal of the empowerment garden and school garden. Connections can be seen through a personal or communal sense of identity, unity, or different links formed throughout these programs.

Have you felt more connected in your community?

I did, even walking toward the garden, I would talk to people and say “guess where I am going” – talk with people, and walking home with produce, would give away products.

I mostly got to know, I am already part of the community, but I got to know the gardeners, the people that were there, better. A church group had a garden lot- met families.

Little baby with a couple that have a baby- and watching the couple work together. --- Had some issues with others taking produce, but that is an issue with the garden, nature of the beast. (Not frequent, but those more on the alley, more likely to lose product--- could see remnants of, some also took the fence pieces)

Are you proud to be part of a garden project? Would you suggest this to other people?

Yes, Absolutely.

Has this made your diet changed?

Continue to look for those products, but time is a thing-

I think because I was able to get fresh things at the garden- I will want a better quality in the winter time, instead of canned, I will use frozen. The garden put the freshness back in my mind.

Has this experience changed your perception of the community or your personal well-being?

I think it has more reinforced the

I have met very rich people- I didn't know, I didn't know the neighborhood at all- and through the gardening, every person that I met were rich people. I didn't have a perception, but now I do. It was very positive.

I have lived in the neighborhood a long time, and it has changed so much in the last 20-30 years, not just the garden thing but the housing. This is kinda a part of making things better making things more positive. You used to walk down the street and notice the houses that were real nice, now you go down and notice the houses that are junky and stuff... - now bad ones stand out, because things are better.

Do you feel empowered through growing your own food?

Absolutely. Yes. Especially empowered when you see the prices of food, and you don't have to worry about- "ecoli is in this, well not in mind"- organic gardening, put nothing out there, just sweat.

Are you working to grow your own food or provide your own products in other ways?

-Examples: backyard gardens, potted gardens, starting additional community gardens, home-made products, etc.

Next step- in addition to- do have herbs in my living room, because of the garden. Having the garden gave me the time.

Garden is so close- I don't do much at home. Fall garden, just in my back yard.

What are other ways you see local food benefitting the community?

I think it is an indirect way of educating the community about the possibilities- just being there-the value of it.

If we can impact the community, by not being a slave to certain prices, there are things we can control ourselves—even if you just have a spot on your yard- you can gain control on your own life. Change-

There are more people that have side gardens or backyards and in front yards. Maybe just paying more attention, but there is more going on than I thought.

More of the minority population.

Appendix C: CRUM School Garden Survey Results

Date: 1-20-12

Location: CFUM

What we did:

Harvest plants we tasted fruits and veggies

Plant seeds, pull weeds, make shapes

Pulled weeds

Pulling weeds

We made a garden and pulled weeds

Talked about health

We pulled weeds

Pulled weeds

We ate health food

Collect bugs, pull weeds

We tasted fruits

We ate the garden foods

What happened:

we tasted fruit and vegs

I got all dirty

Tasted fruit and veggies

We tasted vegetables and fruit

We got to taste

We tasted fruit and veggies

Tasted fruit and veggies

We taste

We used the spiders to see if they would eat the bug

Planted plants

We had tried healthy foods

How I felt: options:

happy, I loved it: III (3)

mmm. Okay, but I'm not purring: IIIIIIII (9)

WAAHH!!! I hated it!; III (3)

What I'd change:

nothing

next time no pulling weeds

I will make it better

More tasting

Nothing

More tasting

I wanted to plant flowers in a pot

We changed the foods that were unhealthy to healthy

Do you want to have a garden @ home? Why?

No because my dog would eat it

Yes

No

No!

Yes

No

No

No because it's hard work

Yes

Yes

No

No

No

*4 yes; 9 no

Do you eat differently/ will you?

Yes. No, maybe so

Maybe

Yes/No: eh...

Yes!

Yes

No

No

Yes

Yes

No

Yes

Maybe

No

*4 maybe; 5 yes; 4 no

Do you think growing your own food is important?

Yes

Yes

Maybe

No!

Yes

Yes

Maybe

Yes

Yes

Maybe

Yes

Yes

Maybe

*8 yes; 4 maybe; 1 no

Did you make friends working in the garden?

No because I knew them all

Yes

No because I knew them all

Yes!

No

Yes

Yes

Yes

Yes

Yes

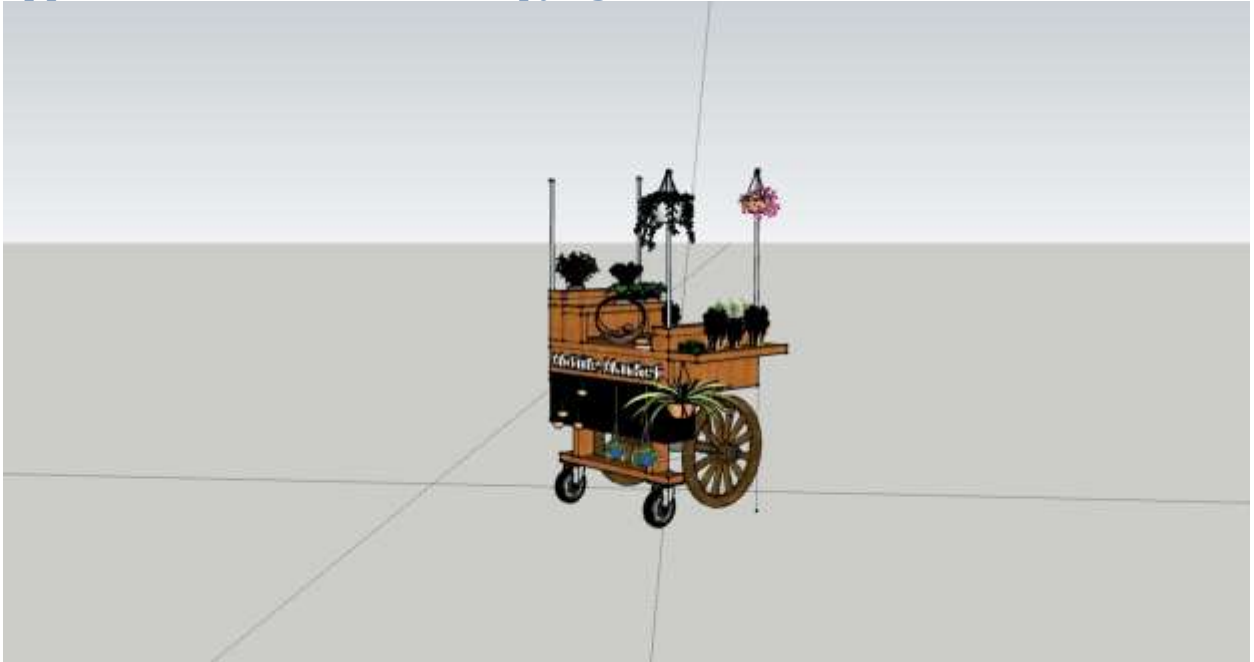
Yes

No

Yes

*4 no; 9 yes

Appendix D: Mobile Market Copyright



Mobile Market Prototype Design

Courtney Long

Abstract:

The purpose of my project, the mobile market, is to create places within the Enterprise Community in Des Moines, Iowa to produce local food and come together and join as a community. Through working together and solving problems as a whole, neighborhood connections will be made. This will serve as a catalyst for people to want to promote other sustainable activities or events in the neighborhood. Phasing will occur to incorporate many different facets of the neighborhood.

Narrative: Because individuals need more local food options, a community garden is started. With the productivity of one small garden, the community comes together and produces another garden. One individual contacts a CSA to get food delivered quickly and sets up a mobile market as a means of profit. Through promoting the CSA at the community garden, people working within the garden want to sell that produce as well and begin thinking about other individual efforts. Shortly, chickens are being raised, and individuals are growing food in their own gardens at home. The community begins trading with each other, or selling their items at the mobile market. Eventually it becomes a weekly activity and the community purchases a building in which they can sell produce and other items such as clothing and unused household items. Because of the community bonding, many different areas of interest are discussed, and with time implemented in the neighborhood.

Purpose: closing the “gaps” within the neighborhood through community gardens and edible walking landscapes, while initiating community activity in order to promote pride in the community so that these initiatives can continue to improve the quality of life in the future.

Objectives: through community gardens and other sustainable activities, neighborhood pride will be increased and because of pride in the community, numerous other activities/ installations will begin.

- Community Garden
- Individual Garden
- City Chicken
- Mobile Market
- Renovation old building for permanent Market
- School programs about gardening
- Community-wide operations

Introduction:

Background (Studio/ Assistantship/walkability study/ access to local foods)

Local food access has been an increasing problem within all communities including inner urban areas (Lawson 2005). Areas such as ‘food deserts’ have been said to exist more frequently in inner cities due to city planning and land use patterns (Feenstra 1997). Food deserts have little access to food sources, including local, fresh sources of food. My proposal for the Barbara King Scholarship is the design and construction of a prototype of a ‘mobile market’. This mobile market was designed to help create a connection between local food initiatives within inner cities (community gardens, backyard gardens, city chickens, etc.), by providing means to purchase these products.

The design concept was created while I was working with Alecia Kates in Carl Roger’s collaborative studio last spring semester. Alecia Kates is 6th Avenue Coordinator within the Enterprise Community. The primary goal of the semester was to create a sustainable community design. Through discussions with Alecia, my focus turned toward walkability within the Des Moines Enterprise Community and local food access. I conducted a field study of walkability to food markets and restaurants around the community. Few food stores existed, and many were fast food or specialty stores. My focus became “Sustainable Community Pride” through the means of local food systems. Following this initiative, I reviewed several different articles and expert opinions on local food access and creating sustainable community design. Many of the articles discussed community gardens and backyard gardens as innovative strategies to creating access to local foods as well as improved community aspects. For instance, Larson states that “community gardens serve several different community functions: social interaction, beautification, economic opportunities and education” (Larson 2005). Another source states, “The long-term health of a community’s food system is an indicator of its vitality and sustainability” (Feenstra 1997). With these aspects in mind, I proposed a project with several phases, one including the mobile market. The mobile market was essentially the catalyst to a sustainable community developed around local food. Because a community garden is already in place within the Enterprise Community, a mobile market would create a way to integrate the market into the community. This would be similar to a food cart that could provide produce and other products to residents during community days. The mobile market essentially marked the beginning of a local-food driven community; that through community

gardens, apprenticeship program, and other 'food incentives' (edible streets/ sidewalks) would lead to an innovative revitalized community. The mobile market could be established through selling community garden produce, farmers' market products from around the city, CSA harvests (two of which are nearby) or homemade products and backyard garden produce. From these initiatives, the next phase would be to develop an apprenticeship program in which a bike delivery station would be enabled for door-to-door delivery of food. Other incentives occur, such as planting edible plants along the streets and revitalizing additional vacant lots into community gardens around the neighborhood. Throughout the phasing, the Enterprise Community becomes a sustainable community built of connections through food and increased relationships with one another, leading to a healthy and more vibrant, green neighborhood.

This description is an idealized vision of the Enterprise Community. I will now discuss my proposal for the mobile market in terms of what is happening now in the Enterprise Community and why I believe the mobile market still has its place to promote local food.

In this proposal I will discuss my questions, purpose, limitations and significance to building a prototype of the mobile market. I will then address my methods of research in designing and building the model. Case studies will include access to local food, construction methods for mobile food carts, as well as current marketing options. Following this discussion of precedents, I will briefly discuss my design concepts for the mobile market. Design documents and construction documents can be viewed within the appendices. In conclusion, I will present my management and timeline of the project, including funding for labor, equipment and materials.

Past questions and answers:

Questions I had when I began the conceptual design project in 5th year studio (2010) included:

What is the feasibility of a local food system within the Enterprise Community?

Through discussions with Alecia and members of the community, many people were supportive of local food systems and integrating these aspects into their community. Last year, Alecia and Mona Bates established a community garden with Carl Rogers and other design students and Mona worked with the Moulton Elementary School garden. In addition to these incentives, a few residents have city chickens, and several participate in backyard gardening. From this information, it was clear that local food systems were accepted within the community, and if different local food initiatives were to be launched, people would maintain the different projects.

What is needed for a market?

To establish a working market, people are needed to sell, deliver and price the food. Community interest in supporting this system is also essential. As discussed within the previous question, this interest has already been shown through different local food incentives as well as volunteers that have worked with Alecia. In addition to needing people to support a market;

produce and products are necessary. Initial ideas for obtaining products for a mobile market included community and backyard gardens, homemade products, CSA produce, and local farmer's market re-sales. All of these sources would contribute to the local economy, and will also provide access to local food. In addition, these options provide alternative ways to supply products for the mobile market during the start-up phases of the project. The goal would be for the market to be sourced primarily through community gardens as well as backyard and residential gardens within the Enterprise Community. Other ideas for initial mobile market products include: implementation of city chickens and seed sales to promote individual gardening. These items could then be sold at community day block parties once the systems have matured. Startup may be slow, but with time, this could capitalize and more individuals can contribute to the system.

Another need for a market is funding. This is a limitation for the project because of the need for funding to build a mobile market and someone to run and maintain it. This limitation leads to the purpose of requesting funds.

A funding source is needed to build the prototype and test its feasibility on-site. Alecia has also applied for a feasibility grant to research the economic feasibility and the appropriateness for an apprenticeship program (relating to building mobile markets and other conceptual ideas for mobile chicken coops, delivery, etc.). For this system to work, it is important that we have connections with local members of the community and proud residents that will carry this program through its beginning stages.

Who is going to be in charge of the mobile market?

This question has not yet been answered. Initially, I would help facilitate construction and off-season storage of the mobile market. My goal is to work with residents during construction to create opportunities for education and skill development. This would create interest, and a core group to use the mobile market during harvest seasons at the community garden. An alternative would be for Alecia to have access to the mobile market, and she could work with volunteers to use the mobile market during community days. One of the goals from this project is to create an apprenticeship program, and through interviews or other means of connection, we could find potential leaders in the community who would be willing to work through construction, and teach younger residents the feasibility and methods to create additional mobile markets in the future.

Purpose/ objective

The purpose and objective for this project is to increase awareness and accessibility to local food options. Through the creation of a prototype mobile market, people will have alternative ways of integrating local food into the community. Though the mobile market is only one component, I believe that this could be a catalyst for other activities within the community. As discussed within the questions above, there are many objectives in using the mobile market. The mobile market could be used during ribbon cutting ceremonies or community work days,

where individuals would be able to sell produce from residential gardens or community garden spaces, juice, homemade products, CSA produce, etc. Within my original design concept, I also included mobile chicken coops that could be sold with baby chicks at a community block party. This could establish different ways of promoting urban agriculture and backyard gardening as well. Again, as addressed previously, these items of mobile chicken coops, chicks, or CSA shares could help to build an understanding of the use of the mobile market as well as inform residents of urban agriculture incentives and local food. If this idea would catch on, an apprenticeship program through the mobile market could start. This creates a collaborative way to teach people in the community how to construct different mobile devices (mobile market, bike trailer) to supply food to residents. This in turn leads to inter-generational learning: children learning from parents or grandparents, and vice-versa. Through this approach, community pride begins to form, connections are made, and relationships are enhanced. With communication playing an active role, other events could follow, transforming vacant lots into community gardens and renovating vacant buildings. The opportunities are endless. My goal is that although the mobile market is small, it has means to advertise and create interest among the community. Through this, many things are made possible.

The purpose for the application is to obtain funding to build a mobile market prototype as it was designed within my scope for 5th year studio and how it has been refined as part of my assistantship.

My thesis proposal is based on increased access to local foods within the Enterprise Community, and the mobile market is one aspect of this research. The purpose of this research is to develop strategies through local food connections to create a more cohesive and connected neighborhood. The mobile market prototype would help fulfill understanding how this can create benefits to the community in accessing healthy, local food options.

Limitations

Limitations include funding for the mobile market: labor, equipment and resources, as well as materials for construction. Limitations also exist after the mobile market is completed. Who will maintain the mobile market and store it?

Significance

The significance of the mobile market is that it is a means to promote access to local food from CSA deliveries or directly from community garden plots. The mobile market is a direct route from garden to consumer within the Enterprise Community. When the mobile market works, it provides a model for other communities. It could be an alternative to farmers markets, or a supplement at a farmers market instead of the same old table and tent. The mobile market is an innovative design that creates community character as well as the community's interests in local food and the importance of the sense of relationships within the Enterprise Community. The mobile market creates a connection between residents of the community and promotes a way to interact and source where your food comes from.

Other areas of significance for the community were discussed during LA studio 446:

Through discussions with Alecia it became apparent that there is a need to form community bonds and neighborhood pride, and I believe the lack of local food within the community currently poses an opportunity. Also, self-sustainability is becoming more important and a program that promotes food/ health sustainability could serve as a catalyst in moving toward economic sustainability as well.

Site catalysts that lead to other initiatives to promote sustainable change:

Community Scale:

-Community garden → growth into large community garden → mobile market → permanent market

Individual Scale:

-Private gardens → city chickens → selling at mobile market → community pride

I care about the project because I have become attached to the idea that positive change can be made through principals of design and sustainable agriculture. And through these principles people within the neighborhood can become unified again and work together to improve the quality of life.

Methods:

Case studies/ precedents

I have been researching case studies about access to local foods to find support that a mobile market system is justified. Also, I am interested in learning alternative strategies and incentives to increase access to local foods. Additional books that I am wanting to review on access to local foods and uses of community gardens include:

Innovative Approaches to Researching Landscape and Health

Closing the Food Gap

I have completed reviews of City Bountiful and have the book Greening Cities, Growing Communities. In addition, I will be researching different ways to get foods to market and accessing data on market strengths and weaknesses as well as advertisement and marketing. I will be reviewing different articles on farmers markets and food stands in order to understand the marketing essentials of a program such as the mobile market. Some of the articles I am currently researching include extension publications in local food and farmers markets, ATTRA publications on Community Gardening and Farmer's Markets and *Local Food Systems and Sustainable Communities*.

Efforts (farm stand/ hot dog stand)

Specific vending sources I am researching for innovation are farm stands and food carts: hot dog stands, euro stands or inner city food carts. Farm stands have cultural appeal and aesthetic marketing that will be beneficial when addressing different ways to advertise the local market. These sources also show various means of marketing through the mobile market structure itself. Currently, my mobile market design (see appendices) has many facades that will allow for ample space to market, including a re-tractable awning and tent for shade. These features are constructed to have creative use of space to hang plants or produce, provide shade, attach posters, display brochures, and create pleasing aesthetics.

In addition to farm stands, food carts will be a helpful case study to examine different means to storing food. I am not proposing installation of a heat source or cooling source, but because this is to be integrated into a phased design, having options for the future would be helpful. Ideas for shade will also be addressed within existing food carts and mobilization. These food carts will also be helpful in understanding the essential elements of a food cart such as storage, cash drawer, cleanliness, etc.

Design Proposal for Mobile Market

Use:

Bring product to accessible location for community

Storage

Display

Ease of mobility: single person use

Program meant for community use (ex. Community day)

Individual with garden or community plot: perhaps CSA distribution

Second tier of program: construct bike trailer for home delivery: employment option

Features:

3' x 4' table top

Tiered shelving with ridge so produce and products don't fall

Drawer for register, essentials

Hinged table ledge: 10" for additional storage

Retractable shade/ canvas top

Retractable poles can also be used for hanging baskets

Handle bar for easy maneuvering

Wire netting on front of mobile market to hang produce

Additional storage can be added to display brochures

Posters and marketing Display area at front of mobile market

Materials:

Lightweight plastic wood composite for aesthetics and main composition and shelves

Lumber for load bearing aspects of mobile market

Hinge for table top (10")

Retractable polls

Canvas or tarp top

Wire netting

Hardware for cash drawer
 Hardware for connections (screws/ nails/ hinges/ fasteners/hooks)
 2: 30" wagon wheels: hickory wood w/ rubber tire (capacity 500 lbs.) www.amishwares.com
 2: 12" pneumatic caster wheels: (capacity 450 lbs.) www.ebay.com
 Locks for wheels: stationary stand
 Axle
 Metal connections for main axle
 Signage (Mobile Market)

Misc. tools

Electric powered drill
 Electric saw
 Sander
 Hammer
 Soldering iron (metal pieces)
 Storage unit
 Wood glue
 Clamps
 Measuring tape
 Level
 Wire cutter
 Safety glasses
 Saw horses
 Work bench for assembly

The mobile market is meant to create an easy way for producers to bring their items to a 'community day' or market for accessibility to the neighborhood or community. The use of wagon wheels and plastic-wood composite creates an aesthetic appeal, as well as a high load capacity and resistance to weather. Plastic-wood composite is also formed from recycled plastics and contributes to reducing environmental impacts. Caster wheels will be used so the mobile market will be able to turn easily. Also, locks will be placed on the wheels to keep the mobile market stationary while being used or stored. A handle bar will be placed at the rear of the cart; one person will be able to effectively move cart from one place or another. (If the cart needs to be hauled to a location, the weight is light enough so two people could lift it into the back of a pickup truck) The wheels are placed 36" apart, so the cart can be pushed on a standard sized sidewalk.

The cart is 3' x 4' with a hinged 10" shelf on the side for extra display space of smaller items. 30" wagon wheels are used for aesthetic appeal and a rustic look. 12" caster wheels are placed in front for ease of mobility. Shelving options are available to create different vantage points to produce as well as improved appearance. Hooks are placed on the side and front of the mobile market to display different types of plants or products, or to display different marketing items. On the front of the mobile market, signage can be displayed (ex/ Mobile Market with pricing...etc.). Wire mesh netting has also been integrated in the design for alternative ways of hanging produce or other products. Also, storage of products can be placed under the shelving units if there are products that need shade. In addition, a retractable top (canvas or tarp) can be lifted and retracted for protection from natural elements, or as an alternative method to hanging products such as planting baskets. (Design documents are in appendices)

Management Plan/Timeline

Initial Research

I will be leading the management of this project and working with individuals from the Enterprise Community interested in maintaining the mobile market. Initially, I will conduct continued research local food systems, as well as, food stands and marketing strategies. Then, I will complete refinements to the designs and construction documents shown in the appendices. Appropriate materials will be selected through discussion with an expert on materials and construction, but I will provide the list of materials shown previously. A primary goal for the design is to have re-purposed materials, to utilize cost and carbon footprint. After materials are obtained, construction will begin. After a date for construction has been decided, I will rent a storage facility near the Enterprise Community for work days and storage of the mobile market.

Timeline

Spring 2011:

- research case studies/ precedents
- complete design and construction documents by end of June 2011
- begin construction early July 2011: location to be decided
- proposed use date in August or September at a community block party
- fall 2011 continued use by residents

Interview and assess (fall and spring)

- Were the goals of the project met?
- Does it meet the needs of the residents?
- Does it work efficiently (mobilization, storage of product, etc.)
- Strengths and weaknesses of design and construction
- Is it aesthetically pleasing? Are residents pleased with the result?
- Does the mobile market hold up in different weather?

Funding

Research Materials: \$136.00

Innovative Approaches to Researching Landscape and Health: \$90.00

Closing the Food Gap: \$16.00

Public Produce: \$30.00

Materials: \$1180.00

Lightweight plastic wood composite for aesthetics and main composition and shelves: \$200

Lumber for structure of mobile market: \$100.00

Hinge for table top (10"): \$5.00

Retractable polls (4): \$100.00

Canvas or tarp top: \$30.00 - \$50.00

Wire netting: \$25.00

Hardware for cash drawer and drawer slide: \$30.00
 Hardware for connections (screws/ nails/ hinges/ fasteners/hooks): \$80.00
 2: 12" pneumatic caster wheels: (capacity 450 lbs.): \$95.00 www.ebay.com
 2: 30" wagon wheels: hickory wood w/ rubber tire (capacity 250 lbs.): \$470.00
 -Axle
 -Metal connections for main axle
 - <http://www.rptrading.biz/WoodenHubWheels.html>
 Signage (Mobile Market)

Misc. tools: \$594.00

Tool Set: \$280.00
 -Electric powered drill
 -Electric circular saw
 -Compact reciprocating saw
 -Drill bit set
 Sandpaper: \$5.00
 Hammer: \$8.00
 Soldering iron (metal pieces): Weller Battery Powered? \$15.00
 Wood glue: \$5.00
 Clamps: \$20.00
 Measuring tape: \$12.00
 Level: \$15.00
 Wire cutter: \$9.00
 Safety glasses: (3): \$15.00
 Saw horses (2): \$60.00
 Storage Unit: appx \$50/ mo: \$150.00

Travel to site

13 gallon tank: gas at \$3.50: 8 visits: \$182.00

Paid employment of neighborhood resident:

\$9.00 x 8 hour works days: 8 days: \$576.00

Total Funding Request w/ misc. costs: \$3000.00

Works Cited

Lawson, Laura J. City Bountiful. Berkeley and Los Angeles, California. University of California Press. 2005.

Feenstra, Gail W. *Local Food Systems and Sustainable Communities*. American Journal of Alternative Agriculture. Cambridge University Press 1997. 12: 28-36

Alecia Kates: Executive Director of 6th Avenue Corridor

Resources cited from LA 446 studio. Spring 2010.



Appendix E: Vacant Lot Survey

SITE SURVEY:

Plot# and description of location:

Exiting conditions:

(y/n) with description where needed

Access, orientation and conditions:

-Sidewalk:

-Alley:

-Street

-Visual (in site and onto site)

-Bus stop?

Context, orientation and condition

-Businesses & non-residential buildings

-Streetlights

-Cross-walks

-Utilities

Vegetation (listed: # and location)/ simple mapping on back sheet

-Canopy:

-Understory:

-Shrub layer:

-Groundcover

-Visual estimate pervious/impervious material (%)

Materials on site (buildings/ water access/ etc.):

Is there a structure on site? Describe

Is there access to water on site? What type of connection or hydrant? Location

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