

Setting a Resilient Urban Table  
Planning for Community Food Systems

by

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## ABSTRACT

Research indicates that projected increases in global urban populations are not adequately addressed by current food production and planning. In the U.S., insufficient access to food, or the inability to access enough food for an active, healthy life affects nearly 15% of the population. In the face of these challenges, how are urban planners and other food system professionals planning for more resilient food systems? The purpose of this qualitative case study is to understand the planning and policy resources and food system approaches that might have the ability to strengthen food systems, and ultimately, urban resiliency. It proposes that by understanding food system planning in this context, planning approaches can be developed to strengthen urban food systems. The study uses the conceptual framework of urban planning for food, new community food systems, urban resiliency, and the theory of Panarchy as a model for urban planning and creation of new community food systems. Panarchy theory proposes that entrenched, non-diverse systems can change and adapt, and this study proposes that some U.S. cities are doing just that by planning for new community food systems. It studied 16 U.S. cities considered to be leaders in sustainability practices, and conducted semi-structured interviews with professionals in three of those cities: Portland, OR; San Francisco, CA; and Seattle, WA. The study found that these cities are using innovative methods in food system work, with professionals from many different departments and disciplines bringing interdisciplinary approaches to food planning and policy. Supported by strong executive leadership, these cities are creating progressive urban agriculture zoning policies and other food system initiatives, and using innovative educational programs and

events to engage citizens at all socio-economic levels. Food system departments are relatively new, plans and policies among the cities are not consistent, and they are faced with limited resources to adequately track food system-related data. However they are still moving forward with programming to increase food access and improve their food systems. Food-system resiliency is recognized as an important goal, but cities are in varying stages of development for resiliency planning.

## DEDICATION

This project is dedicated to my daughter Jessica  
who has supported this project from the beginning.

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# CHAPTER 1

## INTRODUCTION

### **Overview**

This study examines the practice of urban planning for community food systems within the context of urban resiliency. It seeks to explore the practice of food system planning and policy making within U.S. urban areas. As urban populations grow, cities are faced with increasing challenges to their food systems. Food system professionals, including urban planners, are developing new approaches to address these issues. The study asks who the food system stakeholders are, what approaches they are using, and what resources support their work. It also asks how this work contributes to food system resiliency within the urban context. The study's focus is on U.S. cities, but utilizes background information and literature from the U.S., Canada, and Europe.

Within this study, “food system planning” is an activity that takes place within a variety of departments and initiatives by a variety of food system professionals and citizens. Although the research comes from an urban planning perspective, it became clear early on that food system planning is not entirely within the purview of urban planning departments.

The research purpose is to understand planning approaches that strengthen food systems, and ultimately, urban resiliency. It proposes that by understanding food system planning in this context, new planning approaches can be developed to strengthen urban food systems.

To carry out the study, the research design included two phases. 1) A multiple-case study of 16 U.S. cities that exhibit high levels of sustainable practices to understand the landscape of U.S. urban food systems, and how food system work is being done in cities. During this phase the criteria for choosing three cities for phase two were developed. 2) A three-city, embedded, multiple-case study to understand what resources are being used to support food system work, and to explore the relationship between these resources and success in creating and improving community food systems. This phase also asks if and how the concept of resiliency is used by food system professionals to promote overall urban resiliency.

This introductory chapter provides the context and conceptual framework, statement of purpose and research questions, research approach, and rationale and significance of the study.

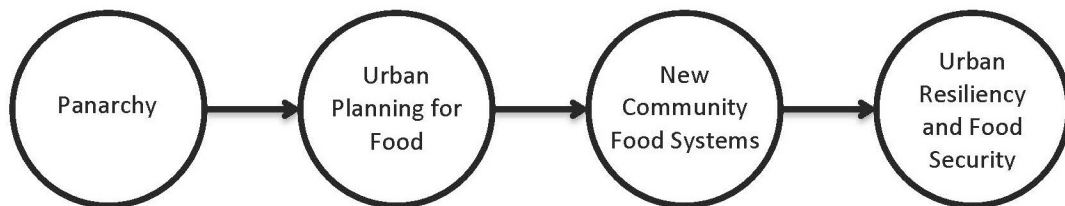
### **Conceptual Framework**

The conceptual framework for the study evolved during initial research and review of the literature. The initial concepts included the history of urban planning and food; current urban planning for food; new community food systems; and urban food security and resiliency. This research showed that the number of stakeholders and the approaches being used to create new community food systems are growing within U.S. cities. It also showed that there are many levels of resources that support food system work including federal policy, city planning, and community-level resources.

According to Ravitch & Riggan (2012), scholarly research first requires a conceptual framework, which relies on “the collective expertise of others to help us make

good choices about how to go about framing, structuring, and approaching our research studies” (p. 3). This framework guides researchers in matching research questions with those choices, aligning analytic tools with research questions, and guiding data collection, analysis, and interpretation. Bloomberg & Volpe (2012) argue that the conceptual framework “draws essentially on theory, research, and experience, and as such it is the structure, heuristic device, or model that guides your research” (p. 87). Following the advice of these researchers, the conceptual framework was developed early, and was used to guide each stage of the research.

These concepts create the framework for this study: Urban planning for food, supported by federal, city, and community resources; new community food systems, created by stakeholders and approaches; and urban resiliency, including urban food security. At the core is the theory of Panarchy as a model for urban planning and creation of new community food systems, resulting in urban resiliency and food security.



*Figure 1.* Conceptual framework.

Research indicates that cities are increasing their levels of food system planning. Since approximately 2000, planners and scholars have recognized the need include food planning practice on the urban planning agenda (Pothukuchi & Kaufman, 1999) and in

2007 the American Planning Association (APA) first published the *Policy Guide on Community and Regional Food Planning*. U.S. cities are faced with increased population growth; increasing severity of floods, drought, and storm events; and social, political, and economic uncertainties. The concept of building resiliency so that cities can weather these disruptions has become the new buzzword, but how is resiliency applied to urban planning for food systems?

This research into food systems planning found that U.S. cities that are using the most sustainable practices in energy, building, and transportation are beginning to promote new approaches to food systems (Karlenzig, 2007), yet they still struggle to provide safe, culturally appropriate, and nutritionally sound diets for their citizens (Abi-Nader et al., 2009). In the U.S. 14.5% or approximately 47 million people are considered “food insecure” whereby they do not have enough food at all times for an active, healthy life, or are unable to feed themselves or their families at some point during the year (Coleman-Jensen, Nord & Singh, 2013). The cities in this study reflect these national averages, and new planning approaches include addressing urban poverty (Lang, 2010). Central to this research are the food system professionals including urban planners and planning consultants, non-profit organization directors and managers, and citizen food system advocates who are active in creating new community food systems.

**Panarchy Theory.** During the literature review into resiliency theory, the concept of Panarchy (Gunderson & Holling, 2002) emerged as a model for how urban food system professionals are creating new community food systems. Research using primary and secondary research documents and interviews with current food system professionals



shows that the current state of urban food systems is not a desirable one. Therefore, the common definition of resiliency, the ability of a system to bounce back to its former state after disturbance, is not presented as a desirable outcome. As Holling describes:

Panarchy focuses on ecological and social systems that change abruptly. Panarchy is the process by which they grow, adapt, transform, and, in the end, collapse.

These stages occur at different scales. The back loop of such changes is a critical time and presents critical opportunities for experiment and learning. It is when uncertainties arise and when resilience is tested and established. We now see changes on a global scale that suggest that we are in such a back loop. This article assesses the possibility of using the ideas that are central to panarchy, developed on a regional scale, to help explain the changes that are being brought about on a global scale by the Internet and by climate, economic, and geopolitical changes.

(2004, p. 1)

This study did not find the application of Panarchy theory to food systems in the literature except for Fraser, Mabee & Figge (2005) who propose a preliminary framework for assessing urban food systems to future disturbance using Panarchy theory. They argue that urban food systems exhibit wealth, lack diversity, and are highly connected—all conditions that contribute to ecosystem vulnerability. This study continues research into urban food systems using Panarchy theory, with the proposition that urban food systems can and should transform into new, resilient community food systems.

**Urban Planning for Food.** In the last two decades, scholars and food system professionals have articulated growing problems with the global, industrial food system

(Carolan, 2012). Urban planners and city sustainability departments are now addressing food system planning along with housing, energy, buildings, water, air, and transportation. This is a relatively new shift in city governments, as urban planners and planning scholars have put food on the planning agenda since around 2000 (Pothukuchi & Kaufman, 1999). U.S. cities have only begun to establish food system departments and initiatives since the early 2000s (Hatfield, 2012). Although this study approaches food system planning from an urban planning perspective, food system departments and initiatives are housed in different parts of municipal organizations, and involve interdisciplinary cooperation from many departments (Hatfield, 2012).

Some of the issues that food systems planning professionals and scholars are concerned with are: public health and the epidemic of obesity and chronic disease (Nestle, 2002); food access, marked by the ubiquity of fast food chains and liquor stores, as well as a lack of fresh food in some urban neighborhoods (Wiskerke & Viljoen, 2012); food waste, estimated to be up to 50% in urban areas (Carolan, 2012); peak oil and climate change that affect and disrupt food production and transportation (Newman, Beatley & Boyer, 2009); food quality and safety (Allen, 2004); and urban agriculture zoning policies (Ackerman-Leist, 2013).

At the national and global scale, food system concerns include working conditions for farmers and farm workers (Guthman, 2004); uncertainty in global commodity prices (Carolan, 2012; Lang, 2010) food miles, or the increasing distances food travels from production to consumer (Ackerman-Leist, 2013); increased use of expensive and

potentially damaging fertilizers and pesticides (Carolan, 2012); and the loss of food literacy (Steel, 2009).

The United Nations Food and Agriculture Organization (FAO) states that “Urbanization is one of the key drivers for change in the world today.” They expect the urban population to increase from 3.5 billion in 2011 to 6 billion in 2050. The FAO states that “urban actors” are beginning to consider food in planning, designing, and managing cities, and that local authorities should take the lead along with the public sector and civil society in food system planning (Forster, 2011, p. 3).

As urban governments plan for this growth, they are also grappling with increased instances of floods, drought, and storm events that affect all urban systems including food supply, storage, and distribution (Newman, Beatley & Boyer, 2009). Social, political, and economic uncertainties are increasing, along with high levels of urban poverty and food insecurity. Peak oil and concerns about greenhouse gas leading to global climate change have urban planners, and municipal and community leaders, examining how food systems contribute to these problems (Lang, 2010; Neff, 2011; Wilson, 2012).

This research proposes that federal, city, and community-level resources aid in the creation and ongoing operations of new community food systems (defined in the following section). These three levels of resources are explained in detail in the Research Approach section of this Introduction.

**Community Food Systems.** This study examines the new community food systems (CFS) that are being created in U.S. cities. The Cornell *Primer on Community Food Systems* definition is used to operationalize this term for this research. The Primer

states that CFS take a prescriptive approach to building a food system. A CFS can refer to a neighborhood, town, city, region, or bioregion. They are distinguished from the global, industrial food system by these aspects: food security, proximity, self-reliance, and sustainability (environmental, economic, and social equity). Goals include optimized health; dietary change to include local and seasonal food; access for all community members to an adequate, affordable, nutritious diet; a stable base of farms; direct, or shortened links between producer and consumer; an economically strong food system; and increased public participation in the food system (Wilkins & Eames-Sheavly).

**Urban Resiliency.** This study explores the theory of Panarchy as a model for urban planning and creation of new community food systems, resulting in urban resiliency and food security. Since Panarchy is a theory that comes out of the larger theory of resilience, resilience theory is covered first, followed by Panarchy theory.

Walker and Salt define resiliency as “the capacity of a system to absorb disturbance and still retain its basic function and structure” (2006, p. xii). The Oxford English Dictionary states that resilience is from the Latin, to rebound, and defines resilience as “The quality or fact of being able to recover quickly or easily from, or resist being affected by, a misfortune, shock, illness, etc.; robustness; adaptability.” U.S. urban areas are challenged with high rates of food insecurity, obesity, and poverty, and a lack of resources at the local governmental level to combat these problems (Hatfield, 2012, p. 1). “Food is a critical part of a sustainable, resilient community” (Hodgson, 2012). In the coming decades, cities that are not already doing so will be forced to grapple with problems associated with feeding growing urban populations, as well as with other

planning challenges related to rapid urban growth. There is a push to “think more complexly about community-based food systems” (Ackerman-Leist, 2013, p. xxvi).

When considering the resiliency of complex urban systems the concept of a resilient food system should be central to planning. The Institute for the Study of International Development (ISID) states that food security includes four dimensions: food availability, food access, food utilization, and food system stability. The concept of food system stability, or food systems being stable through time, is essential to support food security in the long term (Méthot, 2012, p. 6). A resilient food system is one that “bridges the biological and socioeconomic processes involved in the production, distribution, marketing, preparation, and consumption of food” and is able to withstand unexpected events and stresses (Misselhorn, 2012, p. 12).

The Rockefeller Foundation 100 Resilient Cities project is providing resources for cities’ efforts to increase overall resiliency, including funding to implement a resilience plan and hire a Chief Resilience Officer. By December 2013 San Francisco was chosen as one of 32 initial cities for the project, and in April 2014 San Francisco announced the appointment of the world’s first Chief Resilience Officer. This ground-breaking project aims not only to assist in increasing resiliency in individual cities, but in creating a world-wide network of cities working and learning together to create a framework for increased resiliency (Rockefeller).

This study looks at urban food systems, and the efforts by U.S. cities to transform their food systems into community based food systems that rely, in part, on local ecosystems for food production and economic development opportunities for food sector

workers. The concept of resilient food systems with increased food security, proximity, self-reliance, and sustainability (Wilkins & Eames-Sheavly) is one essential component of overall urban resiliency.

**Panarchy.** Using the model of Panarchy within the concept of resiliency (Holling, 2004), this study examines the methods that cities are using to change their food systems from the global, industrial model to incorporate aspects of community food systems. It proposes that the global, industrial food system that dominates urban areas can be transformed, easing through stages of dismantlement and reorganization into entirely new systems. Holling's research shows that systems continually transform and that "disturbances occur as wealth accumulates and the system becomes gradually less resilient, i.e., more vulnerable" (p. 3). According to this model, as the structure of the dominant food system weakens, new, innovative systems emerge and restructure to take its place.

As Holling's theory of Panarchy is applied to the U.S. food system, it is possible to place the current status of the system as being in the stage of organizational consolidation or conservation ( $K$ ), but rapidly moving toward the Omega stage of creative destruction and release ( $\Omega$ ). Seen within this model, new community food systems, with the aid from a range of resources (e.g., federal monetary support shifting from commodity products to fresh fruits and vegetables, city planning efforts to upgrade agricultural zoning codes, or access to great numbers of community kitchens) are emerging into the alpha stage of reorganization ( $\alpha$ ). With appropriate resources, CFS may cross another threshold into the phase of rapid growth ( $r$ ) (Holling, 2004, p. 3).

This study uses the theory of Panarchy as a model for urban planning and creation of new community food systems, resulting in urban resiliency and food security. Although this study is limited to food system work in large U.S. cities, future research may look at large-scale changes to the global food system through the lens of Panarchy theory.

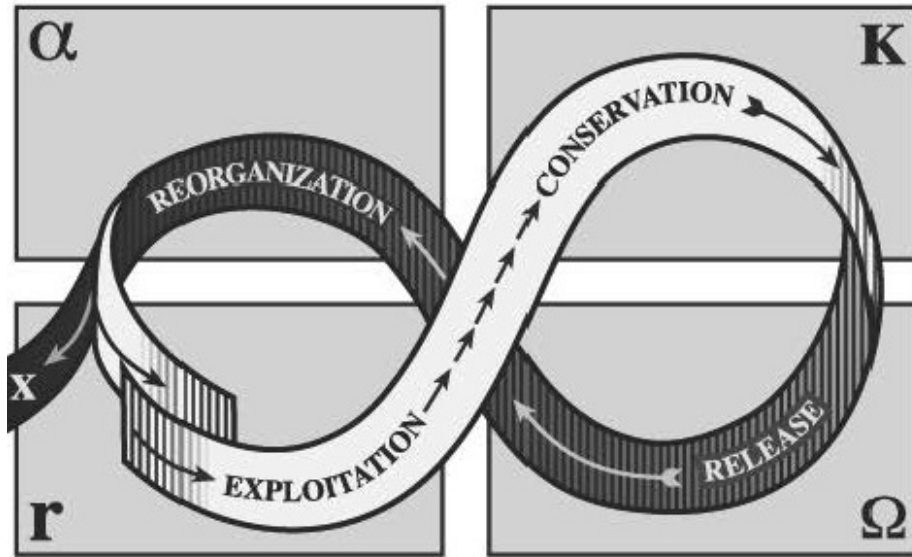


Figure 2. Panarchy model (Gunderson & Holling, 2002, p. 34).

### Statement of Purpose and Research Questions

The research purpose is to understand planning approaches that strengthen food systems, and ultimately, urban resiliency. It proposes that by understanding food system planning in this context, new planning approaches can be developed to strengthen urban food systems.

**Research Questions.** The overall research question is: How can community food systems be strengthened to become more resilient, what is the relationship between CFS and urban resiliency, and how do CFS contribute to urban resiliency?

The specific research questions were developed from the conceptual framework:

1. What is the current landscape of CFS within the most sustainable U.S. cities?
2. Who are the stakeholders and what approaches are they using to create new community food systems?
3. What policy, planning, and community resources are being used to create new community food systems?
4. How are the policy, planning, and community resources contributing to increase food security and food system resiliency?

### **Research Approach**

As described in Chapter 2: Literature Review, urban food system planning with new initiatives and widespread innovation is a relatively new and quickly expanding area of research. To explore these new planning approaches, this research used qualitative research methods within a two-phase case study approach.

1) A multiple-case study of 16 U.S. cities that exhibit high levels of sustainable practices to understand the landscape of U.S. urban food systems, and how food system work is being done in cities. The method for choosing these cities is described in Chapter 3: Methodology. This phase collected data on the stakeholders and the approaches used to conduct food system work, and the various organizational methods that cities are using to accomplish this work. During this phase the criteria was developed for choosing three cities for the second research phase.

In order to find out how cities portray their food systems the research utilized a thorough search of each city's website to find the current food-related policy, plans, and



initiatives. It purposefully avoided broad, Google-type searches, but instead focused only on city websites, and those closely linked to the city websites (e.g., non-profit organizations that partner closely on food system work). It resulted in a large number of food system documents and provided an understanding of the stakeholders and approaches being used to create and improve food systems.

2) A three-city, embedded, multiple-case study to understand how food system work is being done to create and improve community food systems. The embedded units of analysis were the stakeholders and approaches; and the federal, city, and community-level resources that support food systems work. It asked if and how planners and food system professionals integrate the concept of resiliency into food system work.

Semi-structured interviews were used to gather information from three types of food system professionals: Food system directors or advisors, urban planners doing food system work, and farmers' market managers and development directors. The research was iterative, with new findings leading back to documents that had been found earlier in the research, which resulted in new or revised interview questions.

The research data was organized and coded, with pattern matching used to facilitate analysis. This qualitative research approach was supported by qualitative research scholars including Bernard (2006), Bloomberg and Volpe (2012), Creswell (2009), Hay, (2000), and Yin (2006). Bloomberg and Volpe's (2012) methods were used to guide the data organization and analysis process.

**Study Area and Selection.** This study was designed to include a landscape view of U.S. food systems, and a three-city case study to conduct in-depth research into urban

food systems. To select 16 cities for the first phase, a comprehensive search of sustainability and resiliency rating systems was conducted and is described in Chapter 3: Methodology. The cities that were studied, listed high to low by sustainability practices are Portland (OR), San Francisco, Seattle, Chicago, Boston, New York, Denver, Philadelphia, Minneapolis, Washington D.C., Austin, Albuquerque, Oakland, Los Angeles, Baltimore, and San Diego.

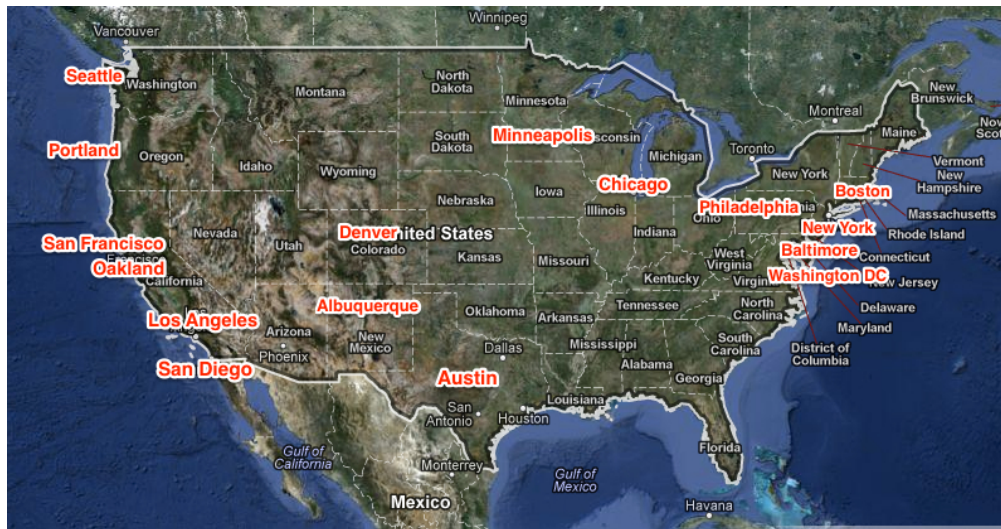


Figure 3. Sixteen-city study area.

Of those cities, three were chosen for the embedded, multiple-case study: Portland, San Francisco, and Seattle. These cities were chosen because they ranked highest in sustainability practices, and were expected to provide similar results, or literal replication (Yin, 2009). Unlike survey methods that provide generalizable results, Yin suggests striving for replication logic for multiple-case studies, where cases are carefully selected so that the logic either predicts similar or contrasting results but for predictable reasons.

**Stakeholders, Approaches, and Resources.** The following section provides context for the use of stakeholders and approaches; and community, city, and federal resources as the embedded units of analysis. As stated in the Study Context, these concepts were developed during initial research and review of the literature. This initial research showed that there are a large and growing number of stakeholders who are using many approaches to create community-based food systems. Additionally, it showed that there are many levels of resources that support food system work including federal policy, city planning, and community-level resources.

Stakeholders and approaches constitute the essential operating system for food system work. Federal, city, and community-level resources provide the necessary policy, planning, funding, education, and other events and initiatives that contribute to community food system success.

***Stakeholders.*** Stakeholders are individuals and groups who perform roles within a CFS including farm owners, operators, and workers; food producers; consumers; students; educators; retailers; gardeners; food system professionals including planning staff and consultants; and community-based organizations (e.g., planning, health, education, and economic development non-profit organizations and agencies).

***Approaches.*** Approaches are the mechanisms used to implement CFS and include urban agriculture, gardens, farmers' markets, Community Supported Agriculture (CSA), food co-ops, local food, community kitchens and food business incubators, and food kitchens and pantries.

***Resources.*** Resources include federal support and policy, city planning and policymaking, and community-level support. Federal-level resources include federal food policy and funding including U.S. Department of Agriculture (USDA) Supplemental Nutrition Assistance Program (SNAP) and food program initiative grants. City-level resources include urban agricultural planning policies, food policy councils, community food assessments, and comprehensive and sustainability plans. Community-level resources include educational and community events, marketing, networks, databases, and other food-based collaboration.

*Federal-Level Resources.* At the federal level, policies, subsidies, and incentives support and fund urban food systems and agriculture. This study includes federal policies that support CFS, including SNAP assistance, the Farmers Market Promotion Program (FMPP), and other federal grants for community food system initiatives.

SNAP usage in farmers markets declined in the mid 1990s after the switch to a completely electronic system—Electronic Benefit Transfers (EBT). In 2012, out of the 7,100 farmers’ markets in the US, only 1,500 had EBT available to process SNAP purchases. Shoppers could no longer use paper food stamp coupons, and the installation and use of electronic systems in farmers’ markets proved costly to install and maintain. In fiscal year 2012, \$4,000,000 was provided to farmers’ markets that were not currently participating in SNAP (USDAC).

The USDA FMPP, established in 2006, was created through a 2002 Farm Bill amendment of the Farmer-to-Consumer Direct Marketing Act of 1976. The goal of the FMPP is to provide grant incentives to “encourage the development, promotion, and

expansion of direct marketing.” Cities also use other types of federal grants for food system studies and programming.

*City-Level Resources.* Since around 2000, city-level resources that support CFS have increased throughout the U.S. Food system directors and advisors have been hired, and food policy councils (FPC) have been created in large U.S. cities, constituting the emergence of “first-wave” food policy councils contributing to “a marked surge in public and municipal consciousness of both food systems and their importance in the urban context” (Hatfield, 2012, p. 7). As recently as 2007 the APA produced the *Policy Guide on Community and Regional Food Planning*. Other examples of new city planning resources include urban agricultural land planning policies and updates, inclusion of food in comprehensive and sustainability plans, and community food assessments (CFA). These resources are being developed and updated to encourage, and in some cases, allow, urban agriculture, community gardens, farmers markets, and other approaches within their cities with the goal of improving their CFS.

*Community-Level Resources.* Community-level resources support CFS at the neighborhood or community scale. For this study they include support and events such as educational programming (culinary and nutritional literacy, farming, seed saving, hydroponics/window gardens, animal raising, local traditional products, and wild gathering); community events (convivial, food/wine, seasonal festivities, and local traditional festivities); recreational events (races and walks); marketing; networks and food resource databases; fund raising; building and remodeling facilities; and child-centered, and senior-centered activities.

## **Rationale and Significance**

This study is motivated by the fact that urban food systems face significant challenges, despite the fact that they are essential for urban resiliency. The persistent problem of providing food for both rural and urban areas is evidenced by persistent U.S. poverty and food insecurity. In addition, worldwide experts warn that the increased pace of urban population increase is not adequately addressed by current food production and planning (Forster, 2011). In 1880 3% of the population lived in towns of 5,000 or more, and by 1950 this figure rose to just less than an third. In the last 50 years urban populations increased more rapidly and in 2006, for first time in history, over 50% of the global population lived in urban areas. The United Nations predicts urban populations will reach 80% of the global population by 2050, growing from 3.5 billion in 2011 to 6 billion by 2050 (Forster, 2011).

Global industrial food production has created food surpluses, estimated to be more than enough to feed the current population of 7 billion people. At the same time, worldwide hunger has increased, and approximately 1 billion people go to bed hungry at night. The U.N. Food and Agriculture Organization estimates that agricultural production must increase by 60% in the next 40 years to meet rising food demand (Forster, 2011).

In 2012 14.9 percent of the U.S. population is considered food insecure at least some time during the year, and 5.7 percent of the total are considered to have very low food security (USDAb). At the same time, up to 50 percent of food is wasted, in the U.S., either in processing, shipping, or within households (Carolan, 2012).

Food systems research and planning at the current level is a relatively new endeavor. Professionals' understanding about food systems planning and resource use is evolving as research increases, and may contribute to solving the problems of food provisioning. Only since around 2000 have U.S. cities begun to address problems associated with food quality and access in the current manner, and efforts are not yet consistent or carefully measured. Standard metrics for measuring existing conditions or progress toward goals have not been established, and without a firm understanding of existing conditions goals are difficult to set.

A variety of stakeholders, using various approaches, and aided by resources are working to improve food systems, and cities already are creating new food system guidelines and frameworks. Funding is limited (e.g., food policy and planning departments established and directors hired, but with little or no budget, or a single staff member hired, but with no food planning department). In this new framework food planning is operated out of a range of offices within municipal organizations, including planning, sustainability, health, economic development, social development, or within the mayor's office. Food system policy and planning departments and food policy councils are being created. Urban agriculture policies are being created and updated, and food is finding its way into comprehensive and sustainability plans. But food policy and planning are nascent enterprises for cities, and no two are identical.

There is a great distance between the dominant global, industrial food system and new community food systems. By applying the concept of Panarchy, it is possible to

envision planning for less dominance of the global, industrial system and the emergence of strong community food systems.

Cities have the ability to help create strong community food systems—the stakeholders are in place, and food system approaches are happening now in cities. There are a variety of resources from different levels that support food systems. This research project identifies the stakeholders, approaches, and resources and measures their contribution to community food systems and urban resiliency. The expected outcome is to provide new tools to provide consistency and recommend planning and policy changes that will improve food systems within cities.

### **Definitions of Key Terminology Used in This Study**

#### **Community Food System (CFS)**

A CFS can refer to a food system within a neighborhood, town, city, region, or bioregion and are distinguished from the global, industrial food system by food security, proximity, self-reliance, and sustainability (environmental, economic, and social equity). Goals include optimized health, dietary change to include local and seasonal food, access for all community members to an adequate, affordable, nutritious diet; a stable base of farms; direct, or shortened links between producer and consumer; an economically strong food system; and increased public participation in the food system (Wilkins & Eames-Sheavly).

#### **Agriculture**

For the purpose of this study agriculture is considered production of land-based plants and animals, and fisheries.



### **Food Security**

Food security means access by all people at all times to enough food for an active, healthy life (USDA).

### **Food System**

The food system includes all those activities involving the production, processing, transport and consumption of food. The food system includes the governance and economics of food production, its sustainability, the degree to which we waste food, and how food production affects the natural environment (Oxford).

### **Healthy Diet**

A diet that promotes health and achieves balance, providing enough “energy (calories) and vitamins, minerals, and other essential nutrients to prevent deficiencies and support normal metabolism. At the same time they must not include excessive amounts of these and other nutritional factors that might promote development of chronic diseases (Nestle, 2002, p. 5)

### **Global, Industrial Food System**

The system that provides the majority of food in the U.S. includes industrial agriculture; animal production using confined animal feeding operations (CAFO); chemical fertilizers and pesticides and agricultural methods that poison and undermine soil, water, and air; agricultural subsidies that benefit large-scale growers of commodity crops primarily used for livestock feed, or used to create unhealthy foods; and an increase in genetic engineering technology (UCSUSA.org).

### **Panarchy**

“Panarchy presents theory and examples to explain why complex living systems create and also benefit from crisis” (Holling, 2004, p. 1). (There are four principal phases: 1) entrepreneurial exploitation, organizational consolidation, creative destruction, and re- or destructuring” (Holling, 2004, p. 3).

### **Resiliency**

The capacity of a system to absorb disturbance and still retain its basic function and structure (Walker & Salt, 2006, p. xii).

### **Sustainability**

Sustainability is defined as, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission, 1987, p. 43). Central are the three core concepts of sustainability—environment, economy, and social equity.

## CHAPTER 2

### LITERATURE REVIEW

#### Overview

This study examines the practice of urban planning for food systems within the context of urban resiliency. It seeks to explore the practice of food system planning and policy making within U.S. urban areas. The study asks who the food system stakeholders are, what approaches they are using, what resources support their work, and how this work contributes to food system resiliency. The study's focus is on U.S. cities, but utilizes background information and literature from the U.S., Canada, and Europe.

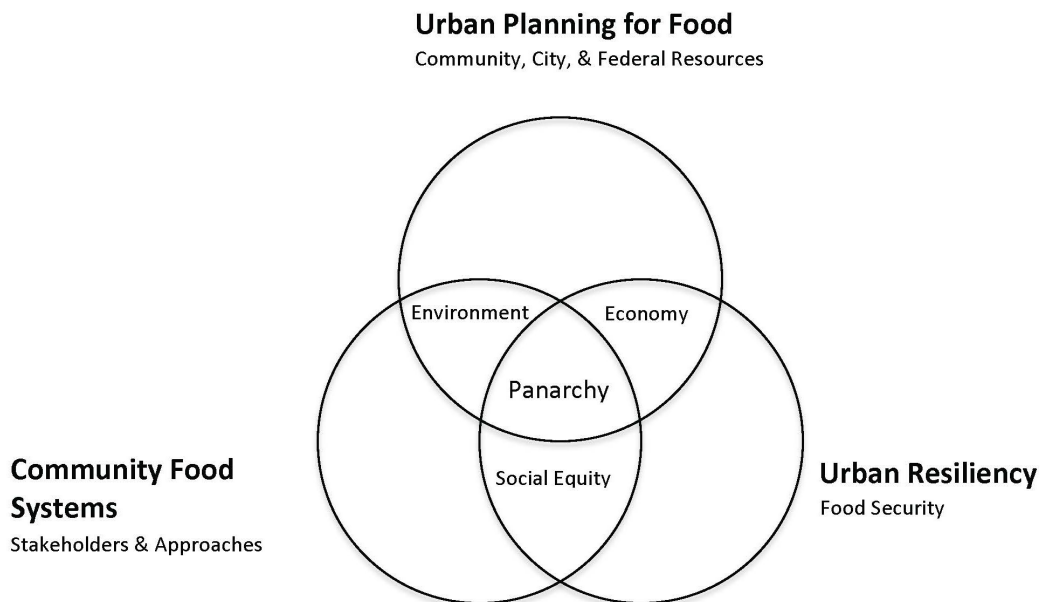
The research purpose is to understand planning approaches that strengthen food systems, and ultimately, urban resiliency. It proposes that by understanding food system planning in this context, new planning approaches can be developed to strengthen urban food systems.

As urban populations grow, cities are faced with increasing challenges to their food systems. Food system professionals, including urban planners, are developing new approaches to address these issues. According to Clapp there are serious ecological and social consequences from the industrial, global model of agriculture. In the U.S. food travels an average of 1500 miles before reaching consumers. There is an assumption that the food supply is safe and reliable, but there are ecological and social costs to the way we grow, process, buy, and sell food. There are unfair conditions for farmers and farm workers in both rich and poor countries, and agricultural production results in biodiversity loss, increased toxins and pesticides, and increases in genetically modified

crops. Relatively few companies control the food system, and stakeholders within cities are advocating for food systems that maximize the ecological and social benefits of food rather than profit (2012).

### **Theoretical Framework**

The theoretical framework for this study is based on concepts of urban planning for food, history of urban planning for food, and community, city, and federal resources; community food systems and stakeholders and approaches; and resiliency theory and food security. Panarchy theory is included as a model for creating new, resilient community food systems. Central are the three core concepts of sustainability—environment, economy, and social equity. Although the definitions of sustainability and resiliency differ, the concepts attributable to each overlap, as will be demonstrated in the resiliency portion of this literature review.



*Figure 4.* Theoretical framework.

This literature review emerged from an urban planning perspective but includes interdisciplinary literature. Research into food and food systems is an interdisciplinary endeavor, and academic disciplines include rural sociology, agronomy, anthropology, ecology, economics, political science, planning, architecture and design, health sciences, recreational studies, and sustainability studies.

### **Urban Planning for Food**

Until recently, urban planners' concerns included every other aspect of urban and rural planning necessary for life including land use, transportation, housing, air and water quality, solid waste and recycling, parks and recreational use. Planners' involvement in the U.S. food system is relative new—only in the last decade or so has the planning community recognized the need to include food systems in the planning agenda (Pothukuchi & Kaufman, 2000). Attention to food planning has only recently become a focus for urban and regional planners and for planning scholars (Kaufman, 2004). Reasons behind this omission are that food planning was considered a private sector role, with supermarkets effectively providing food in urban areas. Food provisioning was considered a rural agricultural issue. From a policy standpoint, cities respond to initiatives led by the U.S. Department of Housing and Urban Development (HUD), which only rarely addresses food system issues, while the USDA deals with food policy relating to farms and agriculture (Pothukuchi & Kaufman, 1999).

In fact, policies relating to food, farms, and agriculture greatly impact cities. The loss of rural agricultural land to development is now being addressed, especially as city governments and non-profit organizations attempt to reintroduce food production into

urban and peri-urban areas. Planners are focusing more on food planning, with a marked increase in research into food security and food deserts (Aggarwal, 2012; American Planning Association, 2007). Food is an important component of local economies, affecting public health; solid waste systems; local land use and transportation; and water, air, and soil quality (Pothukuchi and Kaufman, 1999).

As recently as 2007 the APA adopted the *Policy Guide on Community and Regional Food Planning*. The guide states “... among the basic essential for life—air, water, shelter, and food—only food has been absent over the years as a focus of serious professional planning interest,” and “seeks to strengthen connections between traditional planning and the emerging field of community and regional food planning” with two goals: to build stronger, sustainable, and more self-reliant community and regional food systems, and to suggest ways that the industrial food system may interact and strengthen communities and regions (American Planning Association, 2007).

The APA initially included a food track in its 2005 national conference in San Francisco when it formed the Food Planning Steering Committee. By 2006, when it presented a white paper at the San Antonio conference, the need for formal involvement in food system planning was still questioned by some members. By 2007, when the Policy Guide was presented and adopted at the annual conference in Philadelphia, resistance was limited and this marked acceptance by the APA of the importance of food system planning (Pothukuchi, 2009).

Pothukuchi documented the progress made in urban food system planning from about 2000 to 2009 and provided insight into factors contributing to advancement of food

system work. She stated that food system planning “surfaced independently in a variety of fields and by a variety of critics, mostly articulated as a protest against the global, industrial and corporate-led food system (2009, p. 350). The critiques asked for government intervention, attention to vulnerable populations challenges to the structure of subsidizing commodities, and attention to locally based linkages. These critiques illustrated widespread market failures in the global, industrial food system and provided a rationale for urban food system planning. Pothukuchi also noted that movements to build community food security, and emerging research by planners and health professionals into links between the food system and diet-related disease increased substantially during this period (2009). Pothukuchi’s research resulted in numerous plans and policies enacted in less than a decade that address the key points in the APA Policy Guide, illustrating the increase in momentum in food system work being done throughout the U.S.

**Urban Areas and Food.** Despite recent interest and activities related to increasing local and regional food supplies, urban food systems are reliant on distant food sources. As urban populations grow, increased urban development has encroached upon agricultural land, and food production has become more centralized and farther removed from urban areas. By the 21<sup>st</sup> century, food consumed within the U.S. travels an average of 1500 miles from where it is grown or produced to where it is consumed (Clapp, 2012). Although there is no universally accepted definition of “local,” the USDA uses the definition from the 2008 farm act: “less than 400 miles from its origin, or within the State which it is produced” (Martinez, 2010, p. iii). Direct-to-consumer sales, which generally take place in smaller geographical areas than the USDA description, accounted for just

0.4 percent of total agricultural sales in 2007 (Martinez, 2010). Although numbers of farmers' markets and CSAs are increasing they remain a very small part of overall food sales.

Carolyn Steel describes *Hungry City: How Food Shapes Our Lives* (2009) as being "about the underlying paradox of urban civilization." She states that for a city the size of London (currently over 8 million) every day "enough food for thirty million meals must be produced, imported, sold, cooked, eaten and disposed of again..." a process that takes place every day, in every city on earth. Few are conscious of this enormous effort, rarely wondering about this process (p. ix).

The formation of urban development would not be possible without a steady, accessible, dependable source of food. For most of human history, humans produced food and lived in proximity close proximity to food production. Cities began to develop when agriculture produced a stable, consistent food supply, and cities further developed as farming enabled some people to pursue other endeavors besides procuring their own food (Steel, 2009, p. 10). In early urban development, people lived side by side with agriculture and animal husbandry. Food didn't travel far from producer to consumer, while increasing amounts of food was needed to feed growing urban populations. Increased industrial activities, and food and animal production presented increasingly dirty, dangerous, and foul smelling conditions within cities. Food production moved from within city walls, and as advances in technology enabled food preservation, storage, and shipping from farms to cities, urban development and the food production on which it depended moved further and further apart.



At the same time, technological innovations in food packaging, storage, and transportation were developing—a transformation of the food system that would change the face of human development and habitation. The time when food was still produced within and adjacent to cities may, perhaps, mark the last time that cities showed resiliency in their food systems.

Only recently planners have begun to seriously address urban food systems. Planners and community food security advocates are doing important work in the areas of food security and improving food access in urban areas. Caton Campbell (2004) believes that tools and techniques that have proven successful in alleviating environmental disputes “can be applied to search for common ground in food systems discourse, coalition building, policy advocacy, and grassroots activism.” She cites the importance of involving urban and regional planners to “achieve local food systems that are economically stable, environmentally sound, and socially just” (p. 342).

At the global level the United Nations Food and Agriculture Organization (FAO) states that the current urban population of 3.5 billion will almost double to more than 6 billion by 2050. With migration from rural to urban areas, planning for increased urban populations is a huge challenge. Ensuring access to good nutrition and producing enough food, while still preserving the surrounding ecosystem is a huge challenge for planners around the world (Forster, 2011).

**Food Security.** There is a paradox within every city—while the overall volume of food has increased, reported rates of food security have decreased. Increased food production (a doubling, according to Aggarwal, 2012, p. 189) coincides with rising levels

of insecurity. In 2012, 14.5 percent of U.S. households were food insecure, meaning that they did not have access to enough food for an active, healthy lifestyle at all times throughout the year. 5.7 percent had very low food security, with food intake of one or more household members reduced, and eating patterns disrupted at times during the year because the household lacked money or other resources for food (Coleman-Jensen, Nord & Singh, 2013). Urban areas have high levels of food deserts, “socially distressed neighborhoods with low average household incomes and an inadequate accessibility of healthy food.” Low income and minority neighborhoods have lower access to supermarkets than white, medium to high-income neighborhoods, and instead have higher access to convenience markets, mostly with no or little fresh food. (Aggarwal, 2012, p. 190).

The Community Food Security Coalition, which provided leadership, collaboration, and research within the food justice movement for 16 years, defines community food security as “a condition in which all community residents obtain a safe, culturally appropriate, nutritionally sound diet through an economically and environmentally sustainable food system that promotes community self-reliance and social justice. (Based on a definition by Mike Hamm and Anne Bellows).” The World Hunger Year’s Food Security Learning Center describes food security, “At a basic level, Community Food Security is about making healthy food accessible to all. It focuses on bringing fresh, local food into low-income communities, thereby reducing hunger, and improving individual health. But, as this definition suggests, it’s about much more than that.” They state that food security includes access to nutritious and culturally appropriate

food; supporting local, regional, family-scale, and sustainable food production; revitalizing local communities and economies; providing fair wages and decent working conditions for farmers and food systems workers; promoting social justice and equitable access to resources; and empowering diverse community members to work together to create positive changes in the food system and their communities (Abi-Nader et al., 2009, p. 6).

The United Nations FAO defines food security as when “Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.” Household food security is the application of this concept to the family level, with individuals within households as the focus of concern. They state that the concept of food security originated in the mid 1970s during a global food crisis, and that the initial focus was on food supply problems, including availability and price stability of basic foods at the international and national level. Ongoing negotiations resolved that information, resources for promoting food security, and dialogue on policy issues; a redefinition of food security recognizing the critical aspect of potentially vulnerable and affected people; and critically important for modifying views of food security was the evidence that “the technical successes of the Green Revolution did not automatically and rapidly lead to dramatic reductions in poverty and levels of malnutrition” (Thomas, 2003).

The USDA (Cohen, 2002) in its Food Assessment Toolkit states that communities lie somewhere in the continuum between ‘food secure’ and ‘food insecure’ and that the

goal is a community which “all people in a community have access to a culturally acceptable, nutritionally adequate diet through non-emergency (or conventional) food sources at all times (p. 4). This publication lists community, or locally produced food products as well as conventional products as important factors in community food security. USDA literature on agricultural resilience stresses the importance of local and regional food production in responding to disturbances, including the 2012 drought. The publication states that increases in farmers’ markets, CSAs, organic farmland, farm-to-school programs, and marketing of local foods have increased resiliency (USDAa). Increased urban agriculture including community and individual gardens, and participation in farmers’ markets are suggested strategies to increase food security and urban resiliency (Scharf, 1999, p. 123; Beatley, 2004, 2011; Pinderhughes, 2004).

**Community Food Assessments.** Planners, including Pothukuchi (2004) and Hodgson (2012), recommend conducting community food assessments as the first stage in developing goals to improve urban food systems. Other planning tools that are examined in this project are City Food Policy Councils, and the inclusion of food policy and planning in comprehensive and/or sustainability plans.

Pothukuchi (2004) assessed nine community food assessments (CFA), saying that CFAs constitute a first step in planning for community food security. The study looked at the industrialized food system, charitable food assistance, federal food safety, and community food systems. She recommends that planners partner with community food coalitions in assessing and planning for greater food security, and notes that they may already be doing so by saving farmland, instituting procedures for community gardens, or

pursuing national supermarket operators to open in low-income neighborhoods. She states that increased urban agriculture including community and individual gardens, and participation in farmers' markets are strategies to increase food security and urban resiliency.

## **Urban Food Systems**

**Section Overview.** This review of the literature related to community food systems is presented from the urban planning perspective. It begins with the history of urban food systems and the mid-19<sup>th</sup> century shift in technology and society that enabled food to become increasingly processed, stored, and transported. It covers the ways food in this new system was produced, and distributed, and exchanged, with an emphasis on urban environments. It then describes the current global, conventional, industrial food system, including the U.S. food system. It discusses current thought on the problems related to sustaining this highly complex system with its many economic and political influences. It then describes the current field of “alternative food systems,” or the emerging systems that have arisen in contrast to the global system. It addresses current criticism that local food systems are inherently better than non-local systems. Finally, it describes the concept of a “community food system” (CFS) that is the focus of this research.

**History of Urban Food Planning.** This section describes the history of the U.S. food system with a review of literature from the standpoint of urban planning. It shows how food production and consumption trends changed as the urban population and geography changed and expanded, especially since the mid-19<sup>th</sup> century.

This history of food production and consumption practices in U.S. urban areas includes literature from the U.S. and Europe. The U.S. and England developed and shared similar technologies through the 18<sup>th</sup> and 19<sup>th</sup> centuries, and European customs and traditions remained strong in the U.S. due to significant European immigration continuing until the early 20<sup>th</sup> century. While European immigrants shaped U.S. agriculture patterns, aspects of the U.S. agricultural system greatly affected Europe. The availability of vast tracks of U.S. land provided great opportunities for agricultural and animal production, which in turn changed the quantity and quality of imports available in the European market.

**Early Food Transportation and Preservation.** Producing and distributing food for urban areas is a recent construct. Goody (1997) states that the four factors making industrial cuisine possible in the West are preserving, mechanization, retailing and wholesaling, and transport. Until technological advances in food processing, preservation, storage, and transportation made it possible to produce and transport food from production sites to the urban areas where consumers lived, food was produced in close proximity to where it was consumed. In the pre-industrial world, few cities grew larger than 100,000. A day's journey by cart—approximately 20 miles—was the most a farmer could travel to deliver food products to urban markets (Steel, 2009, pp. 70-71). Cities with access to water and shipping had the advantage of trading; for example, Athens, Greece imported Black Sea grain in the 7<sup>th</sup> century B.C. and Rome imported grain from Sicily as far back as the 3<sup>rd</sup> century B.C. Paris, which had grown to 650,000 by the mid-18<sup>th</sup> century struggled to supply food, and notably grain for bread for its

citizens. Although on the Seine River, Paris was 170 miles from the sea, making large-scale grain imports impossible. Government intervention was necessary to procure needed supplies, sometimes relying on strong-arm tactics to control the grain trade (Steel, 2009, p. 81).

By the 18<sup>th</sup> century, the European rural countryside was moving dramatically towards industrial farming, when half of the iron produced was used for plows and horseshoes. By the mid 18<sup>th</sup> century, technological advances transformed English agriculture, where new machinery, including steam-driven threshers, decreased the numbers of workers needed in agriculture, and rural workers moved to cities. This shift began to shake the social bonds that linked cities to their rural surroundings, and this gap continued to widen. This rural-social phenomenon continues today, and is now being addressed by the concept of civic agriculture (Steel, 2009, p. 31).

In the U.S. in the late 18<sup>th</sup> century, “city foodsheds were largely constrained by the endurance of a horse.” In the early 19<sup>th</sup> century new advances in technology encouraged both city growth and westward expansion of farming and food producing. Early transportation using canals and railroads allowed food production to move farther from urban areas, and markets, wholesalers, and various middle-men emerged to handle the process of getting food from producers to consumers (Vileisis, 2008, p. 37).

According to Steel, it was the railroad that completely transformed the system of food exchange and transportation, both in Europe and in the U.S. The railroad was “an invention that would render all resistance to urban expansion useless. In the space of a

few years, the railways removed all the constraints that had hitherto chained cities to their rural back gardens” (2009, p. 31).

In the U.S. by the mid-19<sup>th</sup> century, expansion of railroad lines into new geography enabled previously inaccessible farmland into the food chain. The huge influx of European farmers to the U.S. found freedoms unavailable in the European serf and tenant farmer systems, and they created agricultural enterprises that expanded to serve global markets. This trans-continental shift, as Europe began to import grain from the U.S., created an agricultural depression in Europe from which it has never recovered (Steel, 2009, p. 32). U.S. producers also increased production, consumption, and export of meat due to the availability of artificial feedlots, mechanized processing plants with conveyor lines, and improved preservation and storage.

The effect of new technologies on urban development cannot be overstated. In 1820, as food industrialization was developing, only three U.S. cities had populations over 50,000, with 7.2 percent living in urban areas. Large towns and cities swelled to 20 percent of the total population by 1860, 30 percent by 1880, and 45 percent by 1910 (Vileisis, 2008, p. 42). In addition to the direct effect of improvements of production and distribution to cities, reasons for urban population increases included westward expansion, new mill-powered factories offering urban employment, and increased numbers of immigrants escaping European poverty and war.

According to Goody, early food preservation was directed by the needs of “travelers, explorers and the armed forces” (1997, p. 340). Techniques such as drying, pickling, and salting were evidenced in early European domestic food preservation. Dried



biscuits and salted meats and fish sustained sailing ships by the 15<sup>th</sup> century. Glass jars were in use to preserve medicines and wine in the late 17<sup>th</sup> century, with tin containers in use beginning in 1812. The preservation technique of canning was constantly being improved, with wide use in the U.S. by the end of the 19<sup>th</sup> century.

Freezing, first by use of preserved blocks of ice, then with refrigeration, was used to preserve food for transport on railroad cars. Fish were packed on ice for transport by 1825 (Mayo, 1991, p. 51), and by the 1851 the first refrigerated rail car transported butter from Ogdensburg, New York to Boston. Refrigerated transportation enabled the meat industry in the Chicago stockyards to grow, with meat being shipped to the growing urban centers in the East (Mayo, 1991, p. 55). The U.S. exported live livestock to Europe in large numbers by the early 1870s, while frozen meat was exported to England as early as 1872 (Goody, 1997, pp. 344-345).

Refrigeration marked an important advancement in public market building technology, allowing merchants to chill products in food stalls. The New York City Grand Street Market contained an icehouse by 1820, and the first mechanical refrigeration in a public market was in Boston's Quincy Market in the 1890s (Mayo, 1997, p. 51).

**Foods of Convenience.** By the mid-19<sup>th</sup> century, many city dwellers had already made the transition from growing and producing all of the food needed for a family, but the introduction of prepared foods took some time to get used to, as these foods often had little semblance to what was found in nature. Vileisis details the processing and altering

of canned and processed foods, with the first investigation of adulterants in food in the late 1880s (2008, p. 93).

In towns and cities changing demographics, increased economies, and an influx of immigrants and emancipated slaves to perform labor allowed women—even those from the lower social/economic class—to hire domestic help. Urban women, who had once had complete control over every aspect of homemaking, including growing, butchering, weaving, and candle making, began to delegate tasks to domestics, or to purchase food from markets and middle-men. One chore that women released to servants was that of daily food shopping. In addition, “the new idealized vision of home demanded a higher standard of housekeeping in middle-and upper-class households,” making increased household demands more than one woman could handle (Vileisis, 2008, pp. 43-44).

By the mid 19<sup>th</sup> century, large-scale methods were used to manufacture processed foods, and soon prepared foods entered the food system, becoming staples of city kitchens. By the late 19<sup>th</sup> century, the increased use of prepared food was not related to new advances in technology, as much as to the introduction of “branding, packaging, advertising and marketing” to increase sales of prepared foods (Goody, 1997, p. 347).

Beginning with bottled sauces, food developers sold products to consumers by convincing them that they needed products that civilization had, to date, survived without. This phenomenon would not be possible without the emergence of a large working class who moved to cities and large towns to power growing industries. A new system of agents and wholesalers intervened between producer and consumer to deliver both old and new food products on a mass scale to a new generation of buyers. Lea &

Perrins' Worcestershire sauce, first invented in 1823, gained popularity and increased sales by 1855, due to advertising on both continents. The invention and marketing of this sauce “exemplifies the rapid growth of prepared foods, the shift in focus from kitchen to factory, as well as the influence of overseas trade and overseas colonization” (Goody, 1997, p. 345).

A Seventh Day Adventist, Dr. John Kellogg developed the first-known packaged breakfast food in the 1850s to address the needs of fellow vegetarians. Soon after, Charles W. Post used techniques previously used by patent medicine makers to market his new breakfast cereals. By “selling health foods to well people,” Post was a pioneer of modern marketing and advertising, and ever since, the food market “has been heavily dependent upon massive publicity campaigns” (Goody, 1997, p. 346).

The growth of the new working-class enabled a food retailing revolution in both England and the U.S. In England, by 1856 the Rochdale Pioneers Cooperative operated successfully at multiple branches within the city. Soon, private firms entered the field. Thomas Lipton started one grocery store in 1872, and by 1898 the company operated 245 branches throughout the kingdom. Grocers were forced to deal with a new type of commodity—cheaper imports, and large amounts of “branded” and manufactured products that were “‘sold’ before sale by national advertising” (Goody, 1997, p. 349).

**Twentieth Century.** Planners can look to the past to see a vision that may be held by food system professionals today. Ebenezer Howard's publication, *Garden Cities of To-Morrow* published in 1898 (1965), described cities where the rural and agricultural were given equal importance with the planned city. Howard envisioned utopian cities as

alternatives to the late 19<sup>th</sup> century industrial cities that were becoming overcrowded, dirty, and dangerous. Residents would enjoy the opportunities afforded by living in a city, as well as the beauty and agriculture of living in the country. His vision was a mix of city and country, where people lived in harmony with nature, and where improvements and investment were reinvested in each community. Each community would consist of five thousand acres of agricultural land served by rail to avoid overcrowding. “This arrangement, he claimed, would be mutually beneficial to both farmer and city dweller, reducing the cost of transportation of food and allowing for the recycling of city waste to increase the fertility of agricultural land (Pothukuchi & Kaufman, 1999, p. 215).

Several planned communities in the early 20<sup>th</sup> century were based on Howard’s model, including the “true” garden cities of Letchworth, Welwyn Garden City, and Wythenshawe in England. However, other later developments did not incorporate the communal ownership or the integration of housing, industry, commercial, and recreational functions that Howard envisioned. Instead, developments more closely resembled modern suburban developments (Talen, 2005).

By the mid-20<sup>th</sup> century the technological advances that enabled urban areas to develop and expand, removed from the location of food production, also transformed food consumption and preparation. Levenstein (1993) states that the post World War II era marked a shift in food customs that still prevails. With incomes rising and a shift in development to accommodate returning war veterans and their families to the growing suburbs, spending on food also rose, from 22 percent in 1941 to 26 percent in 1953. The majority of that rise is attributed to the increased consumption of prepared and processed

food (p. 101). Boosted by the G.I. Bill and increased lending for single-family housing, 21.4 million new cars and 20 million new refrigerators were purchased in the four years after the end of WWII. The cars made it possible to drive, park, and shop in the new self-serve supermarkets, and refrigerators made it possible to shop for food less frequently (p. 102).

Women had experienced a new independence during the war, supporting military manufacturing, and holding other jobs traditionally held by men. Hayden (2002) describes the forced shift to post WWII roles, saying that developers created a model of suburban homes that would "... help the veteran change from an aggressive air ace to a community salesman who loved to mow the lawn. That house would also help a woman change from Rosie the Riveter to a stay-at-home mom" (p. 59). She adds that the "postwar propaganda told women that their place was in the home, as nurturers; men were told that their place was in the public realm, as earners and decision makers" (p. 59).

Another revolutionary marketing campaign was directed at women in the post WWII 1940s to early 1950s. Not only were women marketed to as purchasers of prepared convenience foods, but also as consumers and users of new household technology. Similar to the idealized vision of women as keepers of a modern home and kitchen in the late 19<sup>th</sup> century, women, who performed in the workplace during the war, were once again delegated to the home as housewives and, increasingly, consumers of household convenience foods, food preparation technology, and household "timesaving" devices.

Although this cultural memory proposes that women gave up their wartime jobs and returned to the kitchen of their new suburban homes, in reality the number of women in the labor force was increasing. Increased spending on homes, cars, appliances, and other trappings of the new “suburban dream” was expensive, and despite the idealized image of men “bringing home the bacon,” with full-time housewives tending the household, the reality was that 30 percent of housewives worked in 1953, compared to 24 percent in 1941. By 1957, women represented 32 percent of the labor force, half of whom were married. Levenstein notes that prior to WWII, most women workers were working class, but by the mid-1950s about half were middle-class (p. 105).

Recognizing the time restraints placed on working women, food manufacturers marketed the new processed and preserved foods to women, noting that working wives and mothers were great buyers of convenience foods. The rise in the use of a growing variety of convenience foods coincided with many women doing double duty—working both in and outside of the home. Hayden notes that the suburban dream houses “demanded a great deal of unpaid female labor (Hayden, 2002, pp. 59-60).

**From Public Market to Supermarket.** Early U.S. public markets mark an era where municipalities took a strong ownership position by establishing essential food markets in city centers. Beginning with open public markets in colonial times, markets were gradually roofed or closed-in, extending along the median of wide, public streets. These early municipal markets were “the main food emporiums for the nation much longer than any other building type for food retailing” (Mayo, 1991, p. 41). The first open market in Boston was established in 1639 by order of the governor. New York City

opened its first open public market in the 1630s on Broadway Street, with another in Battery Park area in 1656. Early open markets were located near waterways and docks for access to food shipments.

By the 19<sup>th</sup> century, municipal “street market houses” were developed along wide, centrally located city streets. City leaders saw benefits to creating these public markets along city streets, as there was no cost in purchasing land, and by renting stalls to merchants they collected revenue. Cities were also able to provide health standards for the municipally-owned buildings. In the early years merchants did not see a problem with this public monopoly, or socialized institutions, as the organization for retailing food (Mayo, 1991, p. 42).

The street market houses were common buildings without grand architectural details. Structures were between 25 and 30 feet in width, and as long as 300 feet. Typical markets were divided into meat, fish, and fruit and vegetable sections with booths on both sides, and a central aisle for customers. Some had a two or three level structure that served as a community building abutting one end. Various community buildings housed police or fire departments, or night watchmen. Most common was for the first floor to house market activities, and the second floor to serve as a community meeting place (Mayo, 1991, p. 43). These uses reinforced the strength of the notion that the public market was the local community center. In cities such as Baton Rouge, Charleston, and Savanna, street market houses were built in public squares instead of on streets. Street markets flourished through the mid-19<sup>th</sup> century, and were still operational at the end of the 19<sup>th</sup> century, but few still exist. Growing cities and traffic congestion led to changes

in the location of public markets. The need for larger markets, which would not fit down the middle of city streets, is one of the reasons for the demise of the public street markets. As building technology improved, large roof spans, unencumbered by posts, enabled large buildings with newer technology like refrigeration and access to loading docks. Also, land speculation, a push for economic development, and the primacy of property rights became stronger than public interests, causing food markets to become privatized. (Mayo, 1991).

Although early public markets were a place for active public life for city residents, they also reinforced the social class system that is still evident in the 21<sup>st</sup> century. Mayo (1991) describes how all vendors, from butchers to street vendors to country farmers, were more equal in the early open markets. As markets developed onto city or privately owned, larger and more modern markets, the larger and more successful vendors (e.g., butchers) secured the popular but more expensive booth locations. This arrangement is a precursor to modern retailing, where corporations and advertising compete for sales. Consumers are offered goods that benefit corporate revenue, instead of goods that benefit consumers.

As market space became more expensive, street vendors could not compete with the choice locations and superior interior atmosphere of the new markets. Country farmers, who often traveled as far as 30 miles to market each day, were forced to sell their products on the street, in left-over spaces. Mayo states that the “country people were an essential element of the public market, because these producers provided the freshest goods” (Mayo, 1991, p. 47). Today, increasing numbers of consumers are again choosing



products from local or regional farmers and producers due to freshness and known quality.

Technological advances like refrigeration changed the markets forever. From an icehouse in New York's Grand Street Market in 1820, to the first mechanical refrigeration in Boston's Quincy Market in the 1890s, markets were able to expand their offerings as well as the length of time they could store products without perishing. The automobile affected market design to a great degree, necessitating both adequate street access and guaranteed parking. The New Center Market in Newark, New Jersey was constructed in 1924, and accommodated approximately 500 automobiles on its second floor. On the west coast, drive-in markets were developed where shoppers could drive by a line of stalls and make their purchases, which sales people would place in their cars. Automobiles, which were changing the design of cities and suburbs in the early 20<sup>th</sup> century, were also changing the design of food markets everywhere (Mayo, 1991).

The public markets of the 19<sup>th</sup> and early 20<sup>th</sup> century were largely replaced by privately owned shops and company-owned markets. After centuries of buying from public markets and receiving personal, hands on service at small, family owned markets, the first self-service Piggly Wiggly store opened in 1916 in Memphis, Tennessee. Lower food prices due to bulk pricing, and the ability to drive to the new supermarkets, enabled people to purchase larger quantities of food at a time. New preservation techniques, longer storage time, self-serve supermarkets, and the shopping cart revolutionized food shopping. Supermarkets fit perfectly with new, post WWII low density, automobile

dependent development, and by the 1950s daily food shopping at small urban markets was becoming a historical artifact (Steel, 2009, pp. 136-137).

**The Twenty First Century Global, Industrial Food System.** Food has been traded globally for centuries, with salt, sugar, and spices traded over long distances. Colonial powers traded crops such as coffee, tea, and tropical fruits from the early 17<sup>th</sup> century. But it wasn't until the 1940s and 1950s that global food markets grew markedly with a push from industrialized countries, and particularly the U.S. "This phase of expansion in the world food economy saw the promotion of a global adoption of the industrial agricultural model, as well as the development of international markets for foodstuffs" (Clapp, 2012, p. 6). According to Clapp this expansion is due to four key forces: state-led industrial agriculture and international market expansion, new norms for liberalization of agricultural trade, the rise in transnational corporations, and the transformation of food as a commodity within the financial markets (Clapp, 2012, p. 6). Taken as a whole, the system includes all inputs and processes needed to produce, process, store, transport, and distribute food to the world's citizens. The global food market reached \$8 trillion in 2008, and agriculture accounts for six percent of global GDP (Clapp, 2012, p. 7). Corporate supermarket chains control the movement and distribution of food products, with companies like Walmart reporting sales of \$444 billion in 2012, a 5.9% increase from 2011.<sup>1</sup>

In *Food Politics*, Marion Nestle (2002) provides a concise description of the global, industrial food system, or food industry. The industry refers "to companies that

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<sup>1</sup> Walmart sales 2012: <http://www.walmartstores.com/sites/annual-report/2012/financials.aspx>.

produce, process, manufacture, sell, and serve foods, beverages, and dietary supplements.” “The system includes the production and consumption of food and beverages; producers and processors of food crops and animals; companies that make and sell fertilizer, pesticides, seeds, and feed; those that provide machinery, labor, real estate, and financial services to farmers; and others that transport, store, distribute, export, process, and market foods after they leave the farm. It also includes the food service sector... and associated suppliers of equipment and serving materials.” This industry generates a trillion dollars or more a year, accounts for 13% of GNP, and employees 17% of the U.S. labor force. Of the \$800 billion spent directly on food and drink, \$90 billion is spent on alcoholic beverages, and the rest on retail food (54%) and food service (46%) (11).

By the 21<sup>st</sup> century the food commodity chain has been transformed into a system that is highly concentrated, with few large corporations controlling food from seed to checkout counter. Multinational agricultural companies control seed, fertilizer, pesticides, and animal production from birth to packaging. In agriculture, increased yields have been possible only due to increased inputs of more and more expensive seed, pesticides, herbicides, fertilizer, fuel, and farm equipment, yet farmers’ incomes have not risen at the same pace. Food producers earn a mere 20 percent of retail expenditures (Steel, 2009, p. 95).

Carolan (2012) states that while the value of farm outputs have remained relatively stable for the last 35 years (when converted to a normalized average that allows for comparisons across time), the price of inputs has more than doubled. This “treadmill

logic” is responsible for the decline of full-time farmers in developed countries, and the increase in average farm size (pp. 19-20).

At the same time, global food prices are rising, which affects the poorest people more than those with a varied, diverse diet. For example, for those with diets consisting mainly of a staple like rice or corn, when prices on that commodity rise, the impact on that consumer is disproportionately large. Some of the world’s poorest countries that were once food exporters have become net importers in the last 50 years. The rise in food prices in 2007-2008, then again in 2012-2011 negatively impacted those in developing countries, some who spend upward of 50-80 percent of their income on food (Clapp, 2012, p. 4). In early 2009 the United Nations Food and Agriculture Organization (FAO, WFP and IFAD, 2012) announced that the number of people who are hungry increased 150 million in just a year. The FAO estimates that for the period of 2010-2012 there are almost 870 million people chronically undernourished. The organization has stated the Millennium Development Goal of halving the prevalence of undernutrition by 2015, but is not on track to reaching its goal (FAO, WFP and IFAD, 2012; IFPRI, 2012). In contrast, while global agriculture produces enough in calories to feed every person, malnutrition persists (Carolan, 2012, p. 7).

**U.S. Agriculture and the United States Department of Agriculture.** Globally, \$365 billion is spent a year by governments on food and agricultural subsidies, with large agribusiness receiving the largest share (Carolan, 2012, p. 7). The U.S. has seen a dramatic increase in farm size, decrease in numbers of farms, and a decrease in the diversity of crops and animals it produces. Increases in farming efficiencies have resulted

in larger farms specializing in fewer crop varieties. According to the U.S Census of Agriculture the commodities produced for sale of at least 1 percent of Iowa farms from 1920 to 2007 diminished from 34 to nine products. In contrast to the range of fruits, vegetables, and livestock in 1920, by 2007 the nine products consisted of corn, soybeans, hay, cattle, horses, hogs, oats, sheep, and goats (2012, p. 16). This is illustrated in the fact that the USDA defines fruits, vegetables, and tree nuts as “specialty crops.”

USDA agricultural policies that favor large corporations contribute to the loss of crop diversity. From 1995 to 2009, 88 percent of the \$211 billion in farm subsidies went to 20 percent of all farms, and three companies received over \$1 billion during this period (Carolan, 2012, p. 22). Government subsidies to farmers began in the Great Depression in the 1930s, as an attempt to prop up the agricultural sector and prevent a downturn and loss of farmers who remain a politically important constituency. Farmers were encouraged to stay in the industry, and food supply for the country was secured. Price supports allowed the government to purchase surplus crops at set prices, sidestepping the uncertain open market. Other elements of USDA support that remain today include production controls, crop insurance, and tariffs on imports to protect domestic farmers (Clapp, 2012, p. 26).

In late 2013 the U.S. food system was disrupted in a way that people may not have noticed, but with potential negative effects to both the U.S. and global food system. Due to the October 1-16 federal government shutdown, the U.S. Food and Drug Administration, which is tasked with inspecting and regulating food to ensure it is “safe, wholesome, sanitary, and properly labeled” sent home 45 percent of its staff. The Center

for Disease Control (CDC), which “advises state health agencies about how to effectively deal with outbreaks of foodborne illness, such as listeria and E. coli, by identifying the type of pathogen, notifying the public if there is an outbreak, and tracking the source” sent home 68 percent of its staff. The USDA could not support farmers or generate the reports that are essential for farmers, traders, and brokers to manage the global food supply. The approximately 47 million Americans who receive food assistance through SNAP (which was already losing a percentage of its funding through the U.S. Farm Bill) were at risk of losing their benefits (Zurofsky, 2013).

**Alternative Food Systems, Local Food, and Embeddedness.** Food travels long distances from crop to consumer, and average food in the U.S. travels 1500 miles. Due in part to the energy needed for fuel, processing, and transportation, 10 calories are spent to produce every calorie of edible food, (Carolan, 2012, p. 225).

Local food sales in 2008 of \$4.8 billion represented only 1.9 percent of total U.S. farm sales for the year. These sales were mediated through direct-to consumer sales (farmers’ markets, roadside stands, farms stores, and CSAs); direct and intermediated markets (mixture of markets); and intermediated markets (grocers, restaurants, regional distributors). Only \$877 million of the \$4.8 billion in local food sales was through direct-to-consumer sales (Ackerman-Leist, 2013, p. 184).

Clapp (2012) states that these concerns have “spurred a small but growing movement that seeks to promote alternative food systems that maximize ecological and social benefits of food, rather than profits.” She adds that producers and consumers within these movements are affected by the global food system, even if they participate

almost exclusively in an alternative system (p. 3). Feenstra (1997) argues that the benefits of local food systems “aim to be economically viable for farmers and consumers, use ecologically sound production and distribution practice, and enhance social equity and democracy for all members of the community” (p. 28).

As the concept of eating locally has become more mainstream, research and criticism has also emerged. The concept of local food is mired in conflict—for example the simple statement that local food is inherently better than food that has traveled hundreds or even thousands of miles, has reasonable criticism. Direct farmer to consumer supply chains, compared to conventional supply chains, have the advantage of eliminating the middleman, and increasing farmers’ profits. However, costs associated with bringing products to market may cost a farmer (or other producer) from 13 to 62 percent of the retail price (King et al., 2010, p. v).

The often-quoted fact that food travels an average of 1500 miles to consumers is, on the surface, a good reason to choose local food. The massive movement of food affects fuel costs, air pollution, and freeway and railway use. However, a study undertaken by the USDA Economic Research Service found that “products in local supply chains travel fewer miles from farms to consumers, but fuel use per unit of product in local chains can be greater than in the corresponding mainstream chains,” due to greater fuel efficiency with larger loads and logistical efficiencies (King et al., 2010, p. v). The following section contains discussion about “defensive localism,” and stresses the need to address geographical scale, and use reflexivity when evaluating any food system.

**Criticism of Defensive Localism, Scale, and Reflexivity.** The concept of embeddedness, or how community food systems are aided by “...social connection, reciprocity and trust” (Hinrichs, 2000, p. 296) helps explain how CFS become embedded in urban environments. An embedded CFS would include food from a range of geographical scales that includes a strong local food economy, in an effort to increase resilience and local food security. Embeddedness is one tool that is used to distinguish alternative food systems (AFS) such as CFS from the conventional, globalized food system. Hinrichs (2000) explains that embeddedness is where the social system is embedded with the food market, but “remains fundamentally rooted in commodity relations” (p. 297). Her research on embeddedness and AFS builds upon earlier work by Block (1990) and other social economists who describe markets as “socially structured institutions, infused with cultural norms and meaning,” and where “economic behavior is embedded in and mediated by a complex, often extensive web of social relations” (p. 296).

Although components of CFS are based on economic, market-based institutions, they contain production and exchange from a variety of scales. For example, farmers’ markets fall into the economic market exchange category (i.e., food is exchanged for money, or by charges to the federal government SNAP program). Alternatively, there are other, informal exchanges taking place. Braudel, (1977) defines informal exchange, where “an enormous share of the production was absorbed by the self-sufficient family or village and did not enter the market circuit” (p. 16-17). He states that there is a “shadowy zone” laying beneath the market economy, where basic economic activity occurred,



which Braudel names “material life,” or “material civilization” (Braudel, 1992, pp. 23-24). Today, activities that would be included in Braudel’s “shadowy zone,” include individual and small group food producers like home and community gardens, informal food exchange, and activities taking place in community kitchens to process and store food for individual use and exchange.

A CFS is not purely a local food system, but should include appropriate levels of local agriculture, production, and sales. Among the cacophony of research and media that touts the benefits of local food, there is a body of academic research that warns against defensive localism, and what Born and Purcell (2006) have coined the “local food trap.” They state that sustaining resilient food systems may include products sourced from a variety of geographical scales. Accordingly, Sonnino and Marsden (2006) state that pitting local against global represents binary thinking that “does not reflect the current reality of the agri-food sector, where boundaries between “alternative” and “conventional” food systems are becoming increasingly blurred (p. 61).

Wilson, in *Community Resiliency and Environmental Transition* (2012), addresses different scales of resources, from the global, to the community and household level. He states that tangible effects of actions tied to resiliency are mediated by the individual and/or household within a community and turned into action with tangible effects in a given locality. Local decision-making is embedded in nested hierarchies of scales with interconnections between the community and the regional, national, and global levels where we find “indirect expressions or resilience (e.g. policy and planning, societal ideological pathways) that inform and influence resilience action by individuals and/or

households (p. 36). Communities are open to inflows and outflows that permeate the boundaries from regional and national levels, including not only goods and services, but planning and policy implementation, including land management policies and the impact of agricultural subsidies. Wilson discusses the right balance between communities and their scalar interactions for maximizing community resilience—for instance too little may isolate a community, while too much may lead to “over globalization” (p. 38).

CFS resources come from a range of scales, from federal to neighborhood and community-level. Wilson explores the impact of “nested hierarchies of scales, with close scalar interconnections between the community and the regional, national and global levels...” finding indirect expressions of resilience (e.g., policy and planning, societal ideological pathways) that inform and influence resilience action by individuals and/or households (in Lebel et al, 2006). He states that “regionally based norms, national policy, and global drivers of change are mediated at the household level,” with the first aggregation of individual actions at the local community level (2012, p. 36). In addressing the strength and resiliency of a given CFS, the impacts of federal, city, and community-level resources ultimately affect resiliency at the local community and household level.

Another concept that is used in evaluating scale and localism in CFS is reflexivity, which asks that these systems be examined with receptiveness to diversity, and acceptance that systems can include a range of scales, sources, and food-related institutions. Hinrichs (2003) encourages reflexive approaches, stating “Turning from the potential isolation of defensive localization, diversity-receptive localization sees the local

embedded within a larger national or world community, recognizing that the content and interests of “local” are relational and open to change (p. 37).

Reflexive approaches to food justice would assess the value of localism as a strategy on a case-by-case-basis (Goodman, DuPuis, & Goodman, 2012, p. 31). Approaches to food system resiliency should also assess the value of localism by the same strategy. By utilizing a “reflexive localism” that takes into account different visions of justice, community, and good food (Staheli, 2008 in Goodman et al., 2012) a community can respond to “changing circumstances, imperfectly, but with an awareness of the contradictions of the movement” (Goodman et al., 2012, p. 30).

**Slow Food.** Carlo Petrini founded the international organization of Slow Food in Italy in 1986 as a response to global influences on the Italian and European food systems, specifically the opening of a McDonald’s near the Spanish Steps in Rome. Slow Food launched the Terra Madre network in 2003 to bring together thousands of farmers and producers from throughout the world to preserve and celebrate traditional products. The events have expanded to include producers of non-food products and indigenous musicians, among other cultural groups who work together and share and build global networks ([www.slowfood.com](http://www.slowfood.com)).

Petrini (2009) calls those who consume local food produced by small farmers “coproducers,” and that “they buy the food they need to feed themselves with great thought and intelligence” and that they see themselves as part of the larger biological system of nature. Petrini states that “the term ‘consumption’ is reductive since it implies an action that is at once sustained by the consumer, passive toward the food system, and

harmful to the planet, which is what, in the end, is being ‘consumed.’” Being a coproducer is the opposite—it entails being part of the food community together with growers, breeders, processors, and distributors, and taking part in the process that will “enable the earth to prosper and regenerate” (29).

Caton Campbell (2004) describes “food citizens” as those who promote sustainable agriculture including “eating place-based, seasonal foods grown using environmentally sustainable production practices; protecting small, diversified family farms; building an economically viable local and regional direct marketing network of producers and consumers; and developing a politically active citizenry.” She states there is compelling research on the value of supporting locally-based sustainable agriculture in building strong communities and increasing civic involvement around food.

### **Community Food Systems**

This research examines the development of community food systems as an alternative to the global, industrial food system. Although community-based food systems tend to stress eating seasonal, locally-grown and produced foods (PPS 3), they are inclusive systems based on relationships at a variety of scales. CFS stress a strong relationship between stakeholders, food sources, and cultural influences. CFS respond to increased interest in safe, affordable, locally grown food products for everyone; food security; lessening the “food miles” traveled by food and food products; lessening the environmental impacts of conventional food production; increasing the quality and taste of foods; halting the loss of traditional food plants and animals and the loss of diversity; and supporting local business that in turn keep profits and pay taxes in the local area.

Incorporating the concepts of community food systems in urban food systems as a way to increase food security and access, and to combat obesity and other food-related health issues is a tactic that is being used throughout U.S. cities. A “food system” generally includes everything from seeds, to farm, to table, and back into the land. Urban food systems are hugely complex, with myriad inputs and outputs including production, distribution, acquisition, consumption, and waste. For urban planners and policy makers, food systems should be of the utmost interest due to their impact on urban environments. Inputs and outputs include factors that planners already attend to, including inputs such as building infrastructure, water, solar energy, fossil fuels, capital, and labor; and outputs such as pollution, erosion, transport, jobs, and tax revenue. Other, less tangible but nonetheless important outputs related to food include health outcomes, innovation, regional and cultural identity, tourism, economic development, happiness, and art (Cassidy and Patterson, 2008).

Despite the scale, from regional to local, food systems include components that planners may address when looking at increasing urban resiliency. Dahlberg (1994) lists the essential components as “production issues (farmland preservation, farmers markets, household & community gardens), processing issues (local vs. external), distribution issues (transportation, warehousing), access issues (inner-city grocery stores, co-ops, school breakfasts & lunches, food stamps, the WIC program, etc.), use issues (food safety and handling, restaurants, street vendors), food recycling (gleaning, food banks, food pantries and soup kitchens), and waste stream issues (composting, garbage fed to pigs, etc.).”

Creating community-based food systems is a function of the “food movement,” which is “a collection of social movements: food justice, fair food, fair trade, organic food, slow food, food security, public health, food sovereignty, family farms, and local folks just trying to make things better. The list is extensive because the problems with our food systems are extensive, systemic, and acute.” The development of food policy councils, which have grown in numbers beginning in the early 2000s, are helping to coordinate the activities of the disparate groups within the food movement (Harper, Shattuck, Holt-Gimenez, Alkon & Lambrick, 2009, p. 7).

This study uses the Cornell University, Division of Nutritional Sciences’ *A Primer on Community Food Systems: Linking Food, Nutrition and Agriculture* to describe the components of a CFS. The Primer states that four elements—food security, proximity, self-reliance, and sustainability—“distinguish CFS from the globalized food system that typifies the source of most food Americans eat” (USDA). The Cornell publication includes a detailed description of CFS:

Several qualifying terms have been used to describe the food system: simple, complex, local, global and regional. A community food system is a food system in which food production, processing, distribution and consumption are integrated to enhance the environmental, economic, social and nutritional health of a particular place. A community food system can refer to a relatively small area, such as a neighborhood, or progressively larger areas - towns, cities, counties, regions, or bioregions. The concept of community food systems is sometimes used interchangeably with "local" or "regional" food systems, but by including the

word "community" there is an emphasis on strengthening existing (or developing new) relationships between all components of the food system. This reflects a prescriptive approach to building a food system, one that holds sustainability - economic, environmental and social - as a long-term goal toward which a community strives. (Wilkins & Eames-Sheavly)

This description states that a CFS enhances “the environmental, economic, social and *nutritional health* [emphasis added] of a particular place,” which is significant due to its duplication to the core concepts of sustainability—the three E’s, but with the addition of nutritional health. There is significant work being done in cities to increase access to food and improve nutritional health, and initiatives to build urban CFS are at the forefront of that charge.

The Community Food Security Coalition defines Community Food Systems as “The interdependent parts of the system that provide food to a community in a way that is sustainable and nourishes all people within that community. This includes the growing, harvesting, storing, transporting, processing, distribution, and consumption of food.” The Coalition further states that community food security, or the condition where all community members have access to safe, culturally appropriate, and nutritionally sound diets is a core value of a community food system (Abi-Nader et al., 2009).

Allen (2010) also stressed that CFS are much more than just urban farming, as they contain all “the components that are needed to establish, maintain, and perpetually sustain a civilization.” She states that we need CFS, with stakeholders as central

participants in the planning, development, and execution of building the infrastructure that supports food systems (p. 1).

In their study of land available for urban agriculture in Philadelphia, Kremer & DeLiberty (2011) state that local food systems are not delineated only by geography, or limited to products flowing from production to consumption, but are “natural and social networks formed through common knowledge and understanding of particular places, embedded in their localities” (p. 1252).

Community Food Systems are a reflexive approach to planning a system that is responsive to a particular place, with its unique environment, economy, and culture. They strive to support local business and keep profits and taxes in the local area. Involvement in CFS supports community interaction and civic involvement. Goodman et al. (2012) advocate “open-ended, continuous, ‘reflexive’ processes... that bring together a broadly representative group of people to explore and discuss ways of changing their society” (p. 14).

There is much overlap between community food systems, local food systems, and alternative food systems in the literature. The USDA publication, *Local Food Systems: Concepts, Impacts, and Issues* (Martinez et al., 2010) states that there is no agreed upon definition of local food systems, but that “local” is based more on marketing arrangements (e.g., direct farmer to consumer exchange) (p. i). Citing studies exploring consumer preferences for locally produced food and their willingness to pay higher prices for locally produced foods, motives include “perceived quality and freshness of local food and support for the local economy,” placing importance on “product quality,



nutritional value, methods of raising a product and those methods' effects on the environment, and support for local farmers” (p. iv).

**Urban Agriculture.** Hendrickson & Porth (2012) define urban agriculture as one component of local food systems, “the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities” (p. 7). They stress that urban agriculture is a food-producing and community activity, and is sometimes a for-profit activity, especially when considered in a city’s sustainable development goals. City and federal-level interest and support for urban agriculture has increased, as the federal government is providing increased funding to support urban agriculture, and cities are passing or updating zoning ordinances “intended to foster urban food production for recreation, subsistence, or profit” (Taylor & Lovell, 2012, p. 58).

Cities are reassessing and updating guidelines for urban agriculture and animal husbandry within neighborhoods. In some cities residential neighborhoods contain extensive agriculture and animal-raising, preceding the altering of zoning that prohibits these activities. Taylor and Lovell (2012) discovered that in the City of Chicago, private gardens may be significant sources of urban food provisioning, but have gone largely unmeasured and underappreciated (p. 58). “As cities grow by 5 - 10 % per year, meeting the food needs inside the city will create a market for the people who will produce food in the area. This is not to say that we are not going to depend on rural areas: we will have to integrate the urban-rural linkages. Agriculture is a part of the urban mix” (Forster, 2011, p. 36).

An APA report, *Planning for Urban Agriculture: Lessons Learned* (Hodgson et al., 2011) conducted case studies of 11 U.S. cities to identify planning approaches that support urban agriculture. One of the study's findings was that cities' successful urban-agriculture policies are often part of broader community food-system agendas. The report states:

Creating urban environments that are favorable and supportive of all forms of urban agriculture requires planners to consider how urban agriculture fits into the larger local and regional food system. This represents a broader level of integrated understanding of how to fit urban agriculture within a food supply and consumption system that has long been taken for granted and how to fit the food system into a larger social infrastructure. Case-study communities that have successfully removed regulatory barriers for urban agriculture tend to have strong foundations in community food-systems planning, including traditions of food-producing community gardens or newer efforts such as food policy councils. Urban agriculture thus becomes one part of a comprehensive approach to integrating food system considerations into municipal policy and decision-making processes. (pp. 109-110)

They articulate that “enabling urban agriculture is more than a response to citizens’ demands for opportunities to grow food in closer proximity to their tables” but is “part of a larger, growing movement with the potential to influence the food-related choices of all North Americans, rich and poor” and an important opportunity to grow healthier, more sustainable, and more resilient communities” (p. 110).

Cities are working to improve CFS by creating or updating their urban agricultural land planning policies. City administration and planners realize that farming, beekeeping, and animal husbandry are taking place, but often against outdated zoning codes. Many cities, including the 16 cities included in this research project, are responding to the realization that these activities are beneficial for community environmental, social, and economic goals. Cities are learning from each other, and using emerging urban agricultural policies as models. For example, Tucson, Arizona planners observed extensive urban agriculture and animal husbandry practices, which were not in compliance with City codes. City planning staff is currently developing their *Sustainable Land Use Code: Urban Agriculture* based on the existing San Francisco code.

**Farmers' Markets and CSAs.** According to the USDA, direct-to-consumer marketing amounted to \$877 million in 2008, compared with \$551 million in 1997. Farmers' markets increased from 1,755 in 1994, to 2,756 in 1998, to 5,274 in 2009, and to 8,144 in 2013. The number of CSAs increased from 2 in 1986, to 400 in 2001, and to 1,144 in 2005, 1,400 in 2010, and 13,000 in 2013. Although markets are increasing in numbers, they are not ubiquitous in each city and neighborhood (USDA.org).

Farmers' markets serve as a very growing and visible component of community food systems for a variety of reasons. The Project for Public Spaces has conducted considerable research on public markets including the economic benefits for individuals, businesses, and cities; increasing diversity; and the role of farmers markets in supporting local food systems. In conjunction with the W. K. Kellogg Foundation, PPS developed a \$3 million national funding program for public markets in low and moderate-income to

strategically support markets and broaden their social and economic impacts on their communities (PPS 2).

Public markets have always brought people together in markets to socialize as well as buy food (Steel, 2009; PPS 1). They provide an opportunity to come together as citizens as well as consumers and producers, in cities and towns where “few such opportunities exist in modern life” (Steel, 2009). Traditional public markets are once again on the rise after their decline following World War II. Since the 1980s there has been a shift, with an increased interest in the availability of locally or regionally produced foods as an alternative to global, industrially produced food that is shipped hundreds or thousands of miles from farm or factory to markets. Many American consumers’ only connection to community-based food systems is through their local farmers’ market (PPS 3, 2003).

CSAs began as a way for farmers to enlist the help of local consumers of their products to help fund their yearly crops by purchasing shares at the beginning of the farming season in return for weekly baskets of the farm’s produce. At its core, this is a partnership between farmers and community members, as the local consumers would receive products commensurate with the yearly success of the farm. Although this model is still in use, a common model is for consumers to prepay, but to expect more or less consistent amounts of food each week. Some CSAs include a storefront where excess produce is sold to non-members.

While up-front payments benefit farmers, community members often have the benefit of getting to know their farmer, and visiting farms, making this an educational

partnership. Local Harvest, an on-line database that connects consumers with CSAs, lists over 4,000 CSAs, and while the USDA does not track CSA numbers, Internet searches show approximately 13,000 CSAs in the U.S. in 2013. Local Harvest lists the benefits to farmers as being able to market their products before their busy season begins, receiving cash payments early in the season, and getting to know the people who consume their food. For consumers, benefits include “ultra-fresh food, with all the flavor and vitamin benefits,” exposure to new vegetables and recipes, and farm visits for families and children, and developing a relationship with the people who grow and produce their food (localharvest.com).

## **Resiliency**

The following section covers literature on resiliency theory, and the proposition that the basic definition of resiliency, or the ability to bounce back or recover after an external disturbance, is not sufficient to address resiliency within the current conventional, global food system. Instead, it proposes that food system resiliency requires adapting to changes, and restructuring the existing system into new community food systems that could emerge even stronger after disturbance. Panarchy theory is used to describe transformation from the current dominant system to new resilient community food systems.

The section begins with a discussion of the concepts of sustainability and resiliency, and issues and challenges for urban resiliency.

**Sustainability and Resiliency.** The term “sustainability” has become well known in the U.S. lexicon, and elements of urban sustainability are also attributed to urban

resiliency. Pijawka and Gromulat (2012) state, “resiliency is a key principle in helping define and frame urban sustainability” (p. 11), and that “Cities should implement resiliency thinking and principles to directly confront present problems, and prevent or diminish future threats” (p. 12). But sustainability differs from resiliency in that sustainability strives to retain characteristics of a system without compromising overall resources, while resiliency theory recognizes that systems do change over time, transitioning from one “system state,” or “regime,” to another as “thresholds” are approached and sometimes crossed. Although this may happen “fast and slow, small and big events and processes can transform ecosystems and organisms through evolution...” (Holling, 2004, p. 1).

Sustainability is defined as, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission, 1987, p. 43). Resiliency theories assess complex socio-ecological systems and attempt to understand how human systems respond to internal and external disturbances (Wilson, 2012, p. 1).

Karlenzig, (2007, p. 11) differentiates between sustainability approaches, which address environmental, social, and economic issues (the “three E’s”) and traditional environmental management, which “focus on issues like pollution or habitat restoration in isolation.” He discusses research approaches, stating, “The beginning of the 21<sup>st</sup> century represents a turning point for cities as sustainability subsumes environmental practices and policies.” His position is that people and institutions benefit from the

changes brought about using sustainability approaches, while natural systems and the economy benefit in turn.

**Resiliency Theory.** The Resilience Alliance states that “the aim of resilience management and governance is either, to keep the system within a particular configuration of states (system ‘regime’) that will continue to deliver desired ecosystem goods and services... or to move from a less desirable to a more desirable regime.”

Resiliency “depends largely on underlying, slowly changing variables such as climate, land use, nutrient stocks, human values and policies” and can be degraded due to factors including “loss of biodiversity; toxic pollution; inflexible, closed institutions, perverse subsidies that encourage unsustainable use of resources; and a focus on production and increased efficiencies that leads to a loss of redundancy.”<sup>2</sup> The Resilience Alliance stresses that the key to resiliency is diversity, which is a factor affecting the conventional, global food system, and that it includes the ability to learn from the disturbance. In addition to being able to recover from external shocks, a resilient system anticipates changes leading to thresholds and basic system changes, anticipating and readying for those changes. “Learning, recovery and flexibility open eyes to novelty and new worlds of opportunity.”

Carp notes that resiliency science research is rooted in ecological science, and that in early research social impacts were characterized as a driver to ecological change. Subsequent literature includes “more specific attention to the social aspects of systems in terms of facilitating social and ecological change... (p. 101). Walker and Salt “formalize this relationship within a set of theoretical propositions, including this one: ‘The

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<sup>2</sup> <http://www.resalliance.org/index.php/resilience>.

ecological and social domains of social-ecological systems can be addressed in a common conceptual, theoretical, and modeling framework” (p. 6). They suggest further research in the area of social dimensions in social-ecological systems, as resilience scientists are limited in their knowledge of relating particular components of social system adaptability to concepts of governance and social capital (Walker & Salt, 2006, in Carp p. 101).

Holling (1973) introduced the inevitability of random events affecting ecosystems, stating that a study of biological systems cannot be presented in a deterministic fashion, but that “...in fact, the behavior of ecological systems is profoundly affected by random events. It is important therefore, to add another level of realism...” in research of terrestrial and aquatic biologic systems (p. 13). Using a 28-year long study of the interaction of the spruce budworm and its interaction with the spruce-fir forests of eastern Canada as an example of, Holling states:

It is useful to distinguish two kinds of behavior. One can be termed stability, which represents the ability of a system to return to an equilibrium state after a temporary disturbance; the more rapidly it returns and the less it fluctuates, the more stable it would be. But there is another property, termed resilience, that is a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables. In this sense, the budworm forest community is highly unstable and it is because of this instability that it has an enormous resilience. I return to this view frequently throughout the remainder of this paper. (pp. 14-15)



Holling stresses equilibrium states can be more “analytically more tractable,” but that it does not always provide the most realistic understanding of a system’s behavior, and that “Moreover, if this perspective is used as the exclusive guide to the management activities of man, exactly the reverse behavior and result can be produced than is expected” (p. 15). His concluding paragraph stresses the unpredictability of future events:

A management approach based on resilience, on the other hand, would emphasize the need to keep options open, the need to view events in a regional rather than a local context, and the need to emphasize heterogeneity. Flowing from this would be not the presumption of sufficient knowledge, but the recognition of our ignorance; not the assumption that future events are expected, but that they will be unexpected. The resilience framework can accommodate this shift of perspective, for it does not require a precise capacity to predict the future, but only a qualitative capacity to devise systems that can absorb and accommodate future events in whatever unexpected form they may take. (p. 21)

Walker and Salt (2006) echo Holling’s contention, saying that sustainability, being efficient with our resources, and having the ability to “live within the carrying capacity of our environment” (as in reduce, reuse, recycle) actually undermines the resiliency of a system. Although this concept will always be an important approach to sustainability, they state that “the more you optimize elements of a complex system of humans and nature for some specific goal, the more you diminish that system’s resilience” (p. 9). Their thesis is that all systems—ecological or social—change, and ignoring or resisting change in any system increases our vulnerability and forgoes

emerging opportunities (pp. 9-10). They contend that current responses to natural resource management are failing since they are often modeled on average conditions, expect incremental growth, ignore major disturbances, and seek to optimize some components in isolation of others—an approach that fails to acknowledge how the world actually works (p. 14).

Carp states that from a resilience theory perspective, “places, as complexly linked social-ecological systems, are constantly adapting to circumstances that are themselves constantly changing.” She states that planning practice asserts an instrumental linkage between management and predictable outcomes, “but in resilience theory, policies influence our social-ecological systems rather than command, control, or comprehend them.” Resilience theory recognizes that it takes time for such habits of mind to change (2012, p. 100).

Citing the need to apply resilience thinking to urban areas, Kevin Johnson, Mayor of Sacramento, California, and Chair, Resilient Communities for America, is quoted:

Resilience isn’t just about bouncing back, it’s about moving forward to adapt to changes and grow stronger in the process. And we could use some forward progress: Over the past two years, virtually no community in America has been untouched by a major power outage, a major storm or hurricane, a scorching heat wave or a withering drought—and all of this on top of devastating job losses and a weak economic recovery.” Mayor Johnson sees resilience as turning adversity into opportunity, and that the steps that cities take “to prepare for more frequent storms, floods, droughts,

and heat waves will renew our infrastructure, build on our competitive advantages including our agricultural economy...”<sup>3</sup>

According to the Rockefeller Foundation the three greatest threats to resiliency are increasing urbanization, globalization, and climate change. “Building resilience is about making people, communities and systems better prepared to withstand catastrophic events – both natural and manmade – and able to bounce back more quickly and emerge stronger from these shocks and stresses.”<sup>4</sup> The examination of resiliency as it pertains to urban areas covered in this chapter; the following section digs deeper into food system resiliency.

**Food System Resiliency.** While resiliency studies are based on ecological models and tend to look at large social or biological systems (e.g., forest systems), food system research is done in individual communities or urban areas. This section reviews literature with a focus on food system resiliency.

Challenges to food system resiliency include what Lang calls the new fundamentals—impacts that we can either address or that will restrict development and resiliency. These fundamentals include climate change, water, biodiversity and ecosystems support, energy and non-renewable fossil fuels, population growth, waste, land, soil, labor, and dietary change and public health. The range of disturbances or crises that will likely affect urban food systems range from minimal, like food delivery delays

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<sup>3</sup> Johnson, K., Resilient America. <http://www.resilientamerica.org/mayor-kevin-johnson>.

<sup>4</sup> <http://100resilientcities.rockefellerfoundation.org/resilience>.

lasting for a day or two, to catastrophic when storms or floods destroy the infrastructure of neighborhoods or cities (2010, pp. 90-94).

Walker and Salt's research focuses strongly on issues of food and agriculture, citing inadequate agricultural land and crop production to meet future demands, water scarcity and land degradation, and loss of species and fisheries. They state that the costs of development on the planet have been great and that humanity has been "spectacularly successful" in modifying the planet to meet growing population demands. While human-induced climate change is a global environmental threat, it is only one of many severe challenges to sustainability and resiliency. They further state that "resilience thinking" requires more explicitly incorporating uncertainty rather than assuming that strategic control, or comprehensivity, is possible. Resilience theory recognizes that it takes time for such habits of mind to change.

Newman, Beatley and Boyer (2009) suggest steps that cities can take in the coming decades to greatly increase overall resiliency, especially when faced with predictions of post-oil conditions and climate change. By incorporating renewable energy; carbon neutrality; distributed utility systems; locally harvested energy, food, and fiber; closed-loop energy and waste systems; an understanding of the positive power of place-based systems to build economy, nurture a high quality of life, and create a strong commitment to place; and walkable, transit oriented options for all, cities will experience a paradigm shift (p. 57). They state that local food systems are one key to resiliency, with a move toward food localism and varying levels of urban agriculture, with smart transport centers central to their concept. Localization in food production, transportation, quality,

and distribution are central to reducing resource use and increasing quality of life measures.

**Panarchy.** For Walker and Salt (2006), a resilient system operates within a panarchy, or a nested hierarchy of linked adaptive cycles at a range of scales. They state that the concept of a panarchy [from the Greek god Pan] “was originally coined by Buzz Holling and Lance Gunderson to describe the cross-scale and dynamic character of interactions between human and natural systems” (p. 89). Using the theory of Panarchy within the concept of resiliency, this research proposes that new community food systems can be created or expanded. It proposes that the conventional food systems that dominate urban areas can be transformed through stages of dismantlement and reorganization into entirely new systems.

Gunderson and Holling, building on decades of resiliency research, propose the concept of panarchy as “a theory and examples to explain why complex living systems create and also benefit from crisis” (Holling, 2004, p. 1). Gunderson and Holling (2002) integrate theories from ecology, economics, and social systems, with the concept of “panarchy as a framework of nature’s rules...” (p. 21). They state that panarchy is the antithesis of the concept of hierarchy, or sacred rules, to explain living systems. In understanding resilience and adaptive cycles of constantly evolving nature, they illustrate the four stages of the adaptive cycle: exploitation, conservation, creative destruction, and renewal.

As this theory is applied to the U.S. food system, it is possible to place the current status of the system as being in the stage of organizational consolidation or conservation

(K), but rapidly moving toward the Omega stage of creative destruction and release ( $\Omega$ ). Within this model, a system of new community food systems, aided by a range of resources (e.g., city planning efforts to upgrade agricultural zoning codes) are emerging into the alpha stage of reorganization ( $\alpha$ ). With appropriate resources, CFS may cross another threshold into the phase of rapid growth (r). This process is illustrated by Figure 2 in Chapter 1: Introduction.

Resilience can be represented by the distance between a *system state* and a *critical threshold*. Transitions between *system states* can be slow or abrupt, but being aware of *critical thresholds* can potentially provide advance warning of impending change and can help reduce the likelihood of crossing into new, undesirable state. Urban food systems may be located at any point along this spectrum. At one end are global, industrial food systems in danger of crossing into an untenable state that cannot feed urban populations. At the other end are diverse, regional food systems that have passed thresholds resulting in sustainable and resilient systems that serve communities with safe, healthy, and accessible food and food products<sup>5</sup>.

Meadows (1999) ties resiliency with the necessity to evolve in her statement, “Insistence on a single culture shuts down learning. Cuts back resilience. Any system, biological, economic, or social, that becomes so encrusted that it cannot self-evolve, a system that systematically scorns experimentation and wipes out the raw material of innovation, is doomed over the long term on this highly variable planet” (p. 16).

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<sup>5</sup> Resiliency theory terms from Resilience Alliance, [resalliance.org](http://resalliance.org).

Meadows' statement can be applied to the global, industrial food system, as it fits within Gunderson and Holling's theory of Panarchy.

In linking panarchy to the food system, Fraser, Mabee & Figge (2005) created a framework for assessing the vulnerability of food systems to future shocks. They use Holling's framework that states "wealthy, non-diverse, tightly connected systems are highly vulnerable" (p. 465). They state that we have a poor ability to predict the future of a complex system like the global food system, and that current research efforts in this field rely on too many variables and is too complex to be used to develop policy around food system improvements. Using the panarchy framework provides simple diagnostics of complex systems. While panarchy relates to natural or biological systems, it translates well to use with social systems. An example of this is the Irish Potato Famine, where many communities relied on an agricultural system that was biologically wealthy, well connected, and had low diversity (p. 467). Connectivity in food systems can be very damaging in large areas of connected fields, or where large numbers of animals are raised in confinement. Pests and diseases spread more easily in this type of environment than those that are less well-connected.

In their framework, the concept of wealth can be seen two ways. A system that is wealthy biologically, as in the development of fertilizers to produce a "wealth" of plants, like the abundance of mono-cultures like wheat and soy. On the other hand, wealth in human communities differ, and social and financial wealth actually help communities adapt to change.

## **Chapter Summary**

This review of literature included the three main concepts that guide this research project: urban planning for food systems, community food systems, and urban resiliency and the planning and residency theories that support community food systems. It attempted to tie together these concepts in support of creating new community food systems. As the research progressed, data collected from cities' primary and secondary sources of documents, and interviews with food system planners and other professionals provided further understanding of what types of food system work is being done in cities, and how creating new community food systems is being accomplished. The following chapter describes the methodology used to conduct the study.



## CHAPTER 3

### METHODOLOGY

#### Overview

This study examines the practice of urban planning for food systems within the context of urban resiliency. It seeks to explore the practice of food system planning and policy making within U.S. urban areas. As urban populations grow, cities are faced with increasing challenges to their food systems. Food system professionals, including urban planners, are developing new approaches to address these issues. The study asks who the food system stakeholders are, what approaches they are using, and what resources support their work. It also asks how this work contributes to food system resiliency within the urban context.

The research purpose is to understand planning approaches that strengthen food systems, and ultimately, urban resiliency. It proposes that by understanding food system planning in this context, new planning approaches can be developed to strengthen urban food systems.

To carry out the study, the research design included two phases. 1) A multiple-case study of 16 U.S. cities that exhibit high levels of sustainable practices to understand the landscape of U.S. urban food systems, and how food system work is being done in cities. During this phase the criteria were developed for choosing three cities for a multiple-case study. 2) A three-city, embedded, multiple-case study to understand what resources are being used to support food system work, and to explore the relationship between these resources and success in creating and improving community food systems.

This phase also asks if and how the concept of resiliency is used by food system professionals to promote overall urban resiliency.

This chapter describes the study's research methodology with details about the following areas: Introduction and research questions; overview of information needed, including specific research and data gathering questions for each of the two case study phases; key informant selection; interview methods, techniques, and questions; research design, data collection methods; data analysis and reporting findings methods; analysis and interpretation methods; ethical considerations; quality, including validity and reliability; and limitations of the study.

### **Research Questions**

In order to understand and strengthen this relationship, the study addressed these overall research questions: How can community food systems be strengthened to become more resilient, what is the relationship between CFS and urban resiliency, and how do CFS contribute to urban resiliency?

1. What is the current landscape of CFS within the most sustainable U.S. cities?
2. Who are the stakeholders and what approaches are they using to create new community food systems?
3. What policy, planning, and community resources are being used to create new community food systems?
4. How are the policy, planning, and community resources contributing to increase food security and food system resiliency?

## **Rationale for Case Study Research Design**

Many factors at a range of geographical scales contribute to the success of CFS in the context urban community resiliency. (Born & Purcell, 2006; Goodman, DuPuis & Goodman, 2012) For this reason, a two-phase, embedded, multiple-case research project was designed to fully explore these relationships. Yin (2009) states that a case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between the phenomenon and context are not clearly evident (p. 13). In the case of community food systems, where the food system is the phenomenon, the context is not clearly defined due to the nascent nature of emerging community food systems within urban areas.

Case studies use *how* and *why* questions about a contemporary set of events over which the investigator has no control. They are used to expand and generalize theories and are generalizable to theoretical propositions, not to populations or universes (Yin, 2009, p. 10). Cases are not samples. They are not ethnographies or participant observation studies—however, some of the same research methods can be used as with ethnographies.

There are advantages and disadvantages to using multiple-case (or comparative) over single-case studies. Yin (p. 43, citing Herriott & Firestone, 1983) states that multiple-case designs are often considered more compelling, with the overall study being more robust. In the study of new and emerging food systems, the rationale for a single case study as being unusual, rare, critical, or revelatory do not apply; or if they do it is not evident from the research to which case this would apply. For example, although

Portland, Oregon is highly regarded among cities trying to improve their food systems, its Food Policy Council recently disbanded. The details of this event, and the next phases are still under consideration. Because of the nascent and changing nature of community food systems, and with the sheer number of initiatives appearing throughout the country, there are likely many moving parts to the various systems; however no one system has been identified as unusual, rare, critical, or revelatory.

Yin cautions researchers that multiple case studies can require extensive time and resources; for that reason the three cases selected for in-depth case studies, while unique in their individual approaches to CFS, are similar in several aspects, and provide the researcher relatively consistent data in the emerging planning area of food systems. The cities are similar in geography (U.S. west coast), size (population ranging from 584,000 to 805,000), and consistently rank in the top five U.S. cities based on overall sustainable practices. The cities were chosen from the initial field of 45 cities, which was then narrowed to 16 (see Sixteen-City Case Study in this Methodology section).

The cases in this study present a model for performance evaluation of CFS in any urban area. Given their high rankings among other U.S. cities, these cases may provide a generalizable theory of creating and maintaining strong urban food systems, and provide a model for further food study theoretical propositions and urban resiliency research.

**Literal Replication or Theoretical Replication.** Yin (2009) suggests striving for replication logic for multiple-case studies, where cases are carefully selected so that the logic either predicts similar results (literal replication), or contrasting results (theoretical replication) but for predictable reasons (p. 47). In a multiple-case study, differing case

outcomes may be predicted, but as long as those results are as predicted, the study would provide compelling support for the initial set of propositions. For this study, literal replication is predicted between the three case study cities because of their similarities, high ratings as sustainable cities, and reputations in both popular and academic literature as politically progressive, forward-thinking, food-centered cities. In contrast, a study that included Portland and Phoenix, Arizona (rated #1 and #42 respectively in the initial “sustainable cities” research) would strive for theoretical replication, with the prediction that there would be contrasting findings, and that the cities would have highly divergent levels of food systems.

Yin states that the logic underlying multiple-case studies is analogous to that used in multiple experiments. Cases must be carefully selected with results predicted to be similar or contrasting, as described above. If the majority of the cases result as predicted, there is compelling support for the original proposition. If not, then the initial propositions must be revised and retested with another set of cases. He states that “an important step in all of these replication procedures is the development of a rich, theoretical framework... which needs to state the conditions under which a particular phenomenon is likely to be found (a literal replication) as well as the conditions when it is not likely to be found (a theoretical replication)” (p. 54).

Babbie (2007) mentions a criticism of the case study method that is often repeated, that case studies provide limited generalizability. He states that this risk is reduced by using the comparative case study approach, when more than one case is

studied in depth (p. 300). By designing a multiple-case study, the results can be generalized to a theory, if not to a population.

In his discussion of case study design, Creswell (2009) reminds researchers that cases must be bounded by time and activity, using a variety of data collection procedures over a sustained period of time (p. 13). O’Leary (2004) strives for credibility in case studies, or the exploration of a “bounded system” by delving deeper and using triangulation in case study projects. By collecting data in a range both deep and broad, studies can achieve credibility. For example, building a rich and diverse understanding of one single situation or phenomenon may be achieved by using peer review, persistent observation, and by triangulation (using more than one source of data) (p. 115). O’Leary states that while not generalizable, case study design can offer much to the production of knowledge, as they can: Have an intrinsic value, be used to debunk a theory, bring new variables to light, provide supportive evidence for a theory, and be used collectively to form the basis of a theory (p. 116).

Case studies can include both qualitative and quantitative research methods (mixed methods). Hay (2000) states, “Qualitative methods have been used more widely in human geography throughout this century than is commonly believed. They have been used in conjunction with quantitative methods in a search for generality, and have also been used to explain difficult cases or to add depth to statistical generalizations; above all they have traditionally been used as part of triangulation or multiple methods in a search for validity and corroborative evidence” (p. 18). Hay also discusses how the researcher’s

role in qualitative research is not detached. These writings on case-study research strengthen the case for using the multiple case-study method for this project.

### **Overview of Information Needed**

Bloomberg and Volpe (2012) cite four types of information that are needed to answer a research question “and thus shed light on the problem you are investigating (p. 105): contextual, demographic, perceptual, and theoretical. They cite the usefulness for incorporating these four types of information in a variety of research designs, including case studies. Based on their guidelines, the types of information gathered for this case study project include:

**Contextual information**, or the context of the cities and their food systems. This information strives to understand the context of food system work in U.S. cities, and the organizations and individuals performing that work. This includes city food system overview; the vision and objectives of the cities and the organizations and individuals; the products and services that are being offered; and the strategy for future growth and success. From an organizational standpoint, the leaders, structure, organization, and procedures around food system work are identified.

**Demographic information** describes who the participants in the study are and the activities they are involved in, and the resources being used to support those activities. For this study this includes information on the stakeholders who are performing food system activities using various approaches and aided by different levels of resources, from community to federal. Public sector, non-governmental organizations, consultants, and individuals are included in this category. Instead of specific

demographic information (age, gender, occupation, and ethnicity), this data includes the roles, where they fit in the food system process or organization, their goals, and their perceptions or organizational standpoint on the concept of food systems. It notes similarities and difference in participant perceptions.

**Perceptual Information**, although data, are not facts. They are what people perceive as facts (Bloomberg and Volpe, 2012, p. 106). Perceptions are rooted in long-held assumptions and worldviews, and are neither right nor wrong. They relay what participants believe to be true. For this study, perceptual information gives valuable insight into why participants and groups do what they do, and reveals how their experiences affect their involvement and sense of purpose. Because the projects and initiatives at the core of this research are relatively new in the field of urban planning, it is important to understand what objectives are important, and how individuals and organizations perceive those objectives being met. Equally important is data on how attitudes have shifted as new information about emerging food systems are being introduced and understood.

**Organizing the Overview of Information Needed.** By categorizing the information needed in this way the researcher was able to organize the research questions by designing the information needed and what the researcher wants to know; specific research questions and where they fall under contextual, demographic, or perceptual categories; and methods used to acquire the data to answer the research questions. This information was organized using Bloomberg & Volpe's Template for Overview of Information Needed (2012, p. 107) and is included as Appendix A: Overview of



Information Needed. This template provided a valuable tool for displaying and sorting the research questions and information needed. This became an iterative process because gaps or overlap in the scope of information needed became apparent by using this visual tool.

### Research and Data Gathering Questions

The following section shows the steps taken to develop the specific interview and data gathering questions that were designed to answer each of four research questions.

**Sixteen-City, Multiple Case Study Question.** Question 1 asked: What is the context of the current landscape of CFS within the most sustainable U.S. cities? The indicators listed in the Community Food System Indicators and Metrics were used as categories for the table shells, as well as additional indicators that have emerged from the literature, including: Urban Agriculture; community, home/ private, and school gardens; farmers’ markets; CSAs; food co-ops; amount of local food; community kitchens & food business incubators; and soup kitchens and food pantries.

Table 1

#### *Community Food System Indicators and Metrics*

Goal	Metric	Source
Urban Agriculture	% of land	Community database
Community Gardens	# per capita	Public-sector staff
Home/Private Gardens	# per capita	Planning consultants
School Gardens	# per capita K-12	NGOs
Farmers' Markets	# per capita	USDA
CSAs	# per capita	Community Food Assessments (CFA)
Co-ops	# per capita	US Census
Local Food	% of total	Educational institutions
Community Kitchens & Food Business Incubators	# per capita	American Planning Association (APA)
Food Kitchens/Pantries	# per capita	

Using a search of the websites of 16 cities, primary and secondary documents were collected and reviewed. This provided a landscape overview of U.S. cities food systems within the context of city organizations and tried to understand what cities and closely related nonprofit organizations say about their food system activities. The findings included programs, initiatives, and policies that cities are engaging in to improve their food systems. The data categories that were collected came from the CFS Indicators Table, as well as other categories found throughout initial research and the literature review.

The process used to choose the 16 cities is described in this chapter under Research Design. The cities, in order of sustainability criteria, are Portland (OR), San Francisco, Seattle, Chicago, Boston, New York, Denver, Philadelphia, Minneapolis, Washington DC, Austin, Albuquerque, Oakland, Los Angeles, Baltimore, and San Diego. Inclusion in the top 16 cities signifies that these cities are already taking steps to increase urban sustainability. This research project adds another layer—that of the activities, planning, programming, and policies of each city’s food system, and the measures the cities are taking to increase urban resiliency in their food systems.

**Three-City, Embedded, Multiple- Case Study Questions.** Questions 2-4 were addressed during the second research phase, which used semi-structured interviews in a three-city case study. The process used to choose the three cities for this phase is described in this chapter under Research Design.

The interview and data gathering questions were developed after reviewing the information obtained during the 16-city landscape view research, and were also informed

by the design of the *SustainLane* rankings, which included two food system indicators out of a total of 15 sustainability indicators. Other indicator systems used include the *USDA Food Security Toolkit*, the *Cornell University Community Food System Primer*, and review of cities' community food assessments, which are tools used by cities to measure community food security. Pothukuchi's (2004) study of nine CFAs was reviewed for indicators.

Cities' comprehensive and sustainability plans were examined to develop questions about food system indicators. Hodgson's study for the American Planning Association (2012) on comprehensive and sustainability plans was reviewed, as well as Hodgson, Caton Campbell & Bailkey's APA report (2011) that evaluated cities' plans for inclusion of food-related programming and policy, and Portney's (2002) evaluation of comprehensive and sustainability plans for sustainability initiatives.

### **Key Informant Selection**

This qualitative method of interviewing and interpreting key informants involves non-probability sampling. The informants were selected for their unique and in-depth knowledge of very specific concepts identified in this study. Non-probability sampling is "purposeful, strategic, or information-rich sampling" (Crabtree & Miller, 1999, p. 76).

The initial review of the literature, and the first phase of research to understand the landscape of U.S. urban food systems contributed to key informant selection. In order to answer the research questions, informants working in the three cities food systems were selected. These food system professionals needed to have experience and expertise in the areas of resiliency, urban planning, or community food systems. In addition they

needed to be able to answer all or some of the questions about the scale of resources—federal, city, and/or community—that support urban food systems.

Nine key informants were chosen, by either subject-matter research, or by snowball sampling. Snowball sampling took place during interviews or through email communication as the research progressed. Unstructured interviews were also conducted with two food planning consultants and researchers, and emails were exchanged with subject matter experts. Every interview informant who was asked to participate agreed with the exception of Seattle’s Food Policy Senior Advisor who was on leave; her proxy was an excellent source, as she had developed the program that hired the advisor. The informants are listed in Appendix B: Interview Informants.

**Food System Directors and Senior Advisors.** Because of the importance of the new food system departments the directors or senior advisors of the three cities were chosen for semi-structured interviews. The literature review and the 16-cities research showed that the new and emerging roles of Food Policy Councils and Food System Directors or Advisors are central to cities’ planning for CFS. The three-city case study was structured around three cities with the longest time period between formal food system department inception dates (Portland, 2005; San Francisco, 2002; and Seattle 2012). It was also based on the varied locations of food system departments within each city’s organizational structure (Portland, Bureau of Planning and Sustainability; San Francisco, Program on Health, Equity, and Sustainability with the Department of Public Health; and Seattle, Office of Sustainability and Environment).

**City Food System Planners.** In order to understand urban food systems from a planning prospective, and to dig deeper into what resources city planners are using to build CFS, snowball sampling was used to select planners with a strong practice on food system planning and policy work. For San Francisco the planning informant became apparent during the interview with the food system director. She described how she had worked with the food system planner as the planner moved from an entirely different focus into food system planning. For both Portland and Seattle, the food system director and senior advisor were asked for recommendations for food system planners to interview.

**Farmers' Market Organizers, Managers, and Fund Raisers.** To gain an understanding of how community resources contribute to CFS, farmers' market organizers, managers or fundraisers were identified. In San Francisco, research showed that the Ferry Plaza Farmers' Market is a very popular market with a 20-year history, with three weekly markets and a strong educational component. The location in and outside of the iconic San Francisco Ferry Building attracts local business and residential customers, as well as tourists. Although the executive director would have been a likely informant, the staff biographies showed that the development director performed day-to-day, hands-on planning and management of the market, fundraising, as well as the range of educational activities that are at the core of the organization's mission. In Portland snowball sampling was used to select the director of the James Beard Public Market project. In Seattle, snowball sampling was also used, by asking the acting food system

advisor, resulting in an interview with the Executive Director of the Washington State Farmers' Market Association.

### **Interview Methods and Techniques**

An unstructured interview was conducted with one informant prior to refining the research and interview questions, which was followed up with a semi-structured interview. Unstructured interviews were also conducted with two food system planners or professionals. Semi-structured interviews were conducted with nine informants.

Unstructured interviews are not informal chit chat—the interviewer and informant sit down for an interview, the interviewer has a clear plan, and the idea is to let the informant open up and to speak at their own pace. Unstructured interviewing can be used at the onset of research to gain an understanding of the review concepts. It is often used in long-term fieldwork where interviews take place on many occasions (Bernard, 2006, p. 211).

Semi-structured interviews have some of the qualities of unstructured interviews, and require the same skills. Informants are asked similar sets of questions, and an interview guide may be used. Bernard states that a semi-structured interview works well with high-level bureaucrats who have limited amounts of time, because they feel that the interviewer is in full control, but it leaves both you and your respondent free to follow new leads. It shows that you are prepared and competent but that you are not trying to exercise excessive control” (Bernard, 2006, p 212).

Interviews began with the researcher receiving permission to record the interview (unless it had already been given by email while setting up the interview). The researcher

gave a brief overview of the study, and encouraged further questions. Some introductions also included friendly small talk, including talk about informants that had already been interviewed, as the informants tended to know, or know of some of the other informants.

During the interviews the researcher used techniques including probing to encourage the informant to elaborate on a concept; echo probing where the informant's words are repeated and asking them to continue; the uh-uh probe to continue speaking about a concept; the tell me more probe, explicitly asking for more information about a concept; and the long question probe, by describing in more detail the question being asked. As opposed to an ethnographic interview where the interviewer should not share too much about their stance or opinion, during this interview process the informants were clear about the researcher's stance as knowledgeable and interested in food system planning.

### **Interview Questions**

To develop interview questions that were directly tied to the research questions, a matrix was created using Bloomberg & Volpe's Table 7.4, Template for Research Questions/ Interview Questions Matrix (2012, p. 109). Research questions 1-4 were copied into a matrix, then questions were brainstormed that would get to each research question. This resulted in 12 interview questions, plus two specific questions aimed at answering Research Question 1 using document research. This process is documented in Appendix C: Research Questions/Interview and Data Gathering Questions.

The interviews were designed for informants in three different roles, so the interview questions were further sorted according to which informant role could best

answer each question. Since semi-structured interviews are designed to allow informants to follow new leads, they often responded with information outside of the scope of their specific interview questions. In some cases the researcher asked follow up questions that were out of range of the original questions. The introductory remarks and interview questions are listed below:

**Federal Resources: Farmers' Market Managers; City Food Planning Staff**

Some of the federal support that is considered in this project is SNAP usage, marketing, and promotion in community food programming; and federal grants for food-related projects such as the USDA Farmers Market Promotion Program (FMPP).

1. How do you work with the SNAP program and recipients?
2. Do you receive federal funds like the FMPP grants or others?

**City resources: Food Policy Council Directors/City Planners**

***Food Policy Council Directors/Food System Directors***

1. Community Food Systems, as a goal of food policy programs, strive for 3Es of sustainability, but this study is also looking at food system resiliency.
  - a. What is being said about resiliency?
  - b. Does the City's policy and programming consider resiliency as a goal and how is that demonstrated?
  - c. What strategies are your city using to increase food system resiliency?
2. Where is the CFS housed in the city's organization? Considering this, how does the CFS director work and coordinate with City Planning on food system policy,



- planning, and programming? How do you ensure cross-departmental collaboration?
3. Does the FPC support and intent (policy vs. programming) change as city administration changes (e.g., new mayor and administration)?
  4. Who in City Planning should I interview?

### ***City Food System Planners***

These tools are mentioned in planning literature as important to urban food system planning and policy for many cities:

- City Food Policy Council
  - Community Food Assessment
  - Urban agriculture zoning and updates
  - Inclusion of food policy and planning in comprehensive and/or sustainability plans
1. What are the important food system reports, plans, and recommendations that have been developed, and what are under development?
  2. How are these plans, reports, and recommendations being used to pursue food system policy?
  3. Are there barriers to moving from plans, reports, and recommendations to implementing policy?
  4. What policies are being used to move food system programming forward?

## **Community Resources: Community or Nonprofit Organizer, Farmers'**

### **Market Development/ Outreach Staff**

- Below is a list of community-based events and resources that are used in cities to supplement other policy and planning for building community food systems. Educational (local traditional products, wild gathering, culinary, farming, seed saving, hydroponics/window gardens, animal raising)
- Community events (convivial, food/wine, seasonal festivities, local traditional festivities)
- Recreational events
- Marketing
- Networks and food resource databases
- Fund raising; building/remodeling facilities
- Child-centered or senior-centered events, education, etc.

What events and resources are used to support the community food system?

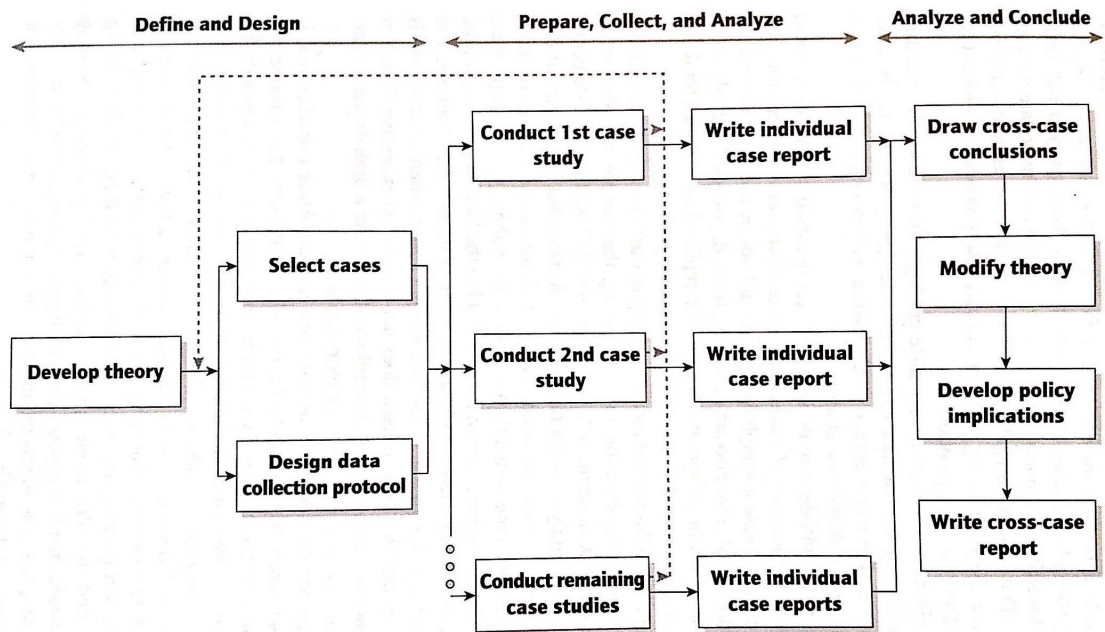
### **Research Design**

**Case Study Research.** Unlike grounded theory or ethnography research designs, which “deliberately avoid specifying any theoretical propositions at the onset” (Yin, 2009, p. 35) case study research begins with propositions that lead to the development of research questions. This research was designed based on the conceptual framework of urban planning for food, new community food systems, and urban resiliency, including urban food security. At the core is the theory of Panarchy as a model for urban planning and creation of new community food systems. The research questions were designed to

link community food systems with increased urban resiliency and the findings and conclusions should create theories that can be applied to other cities.

This study was designed as a case study, but contains elements of ethnography. Case studies are designed to gain an understanding of specific cases, while ethnography seeks to understand the specifics of a case from the information gained from informant interviews. Yin (p. 36) describes theory development as “a (hypothetical) story about why acts, events, structure, and thoughts occur. He continues, saying that research design will provide surprisingly strong guidance in determining data to collect and strategies for analyzing that data.”

Yin (2009) illustrates the replication approach to case study research, beginning with theory development, and concluding with report writing. Yin’s figure 2.5 (Figure 5) illustrates the iterative nature of the case study method. The process Yin describes generally moves from define and design; prepare, collect, and analyze; and analyze and conclude. Preliminary research is conducted on the first case, the report is drafted, and the researcher draws cross case conclusions. The theory may be modified at this point, and the second case study is conducted, a report is drafted, and cross-case conclusions are drawn, etc. until all case studies are completed (Yin, p. 57).



**Figure 2.5** Case Study Method  
SOURCE: COSMOS Corporation.

*Figure 5.* Case study method (Yin, 2009, p. 57).

Bloomberg and Volpe describe research design specific to qualitative research (2012, p. 251) that illustrates “ongoing data analysis as a strategy for validity and reliability.” They suggest ongoing phases of data collection beginning with interviews and continuing through refinement of instrumentation and coding, and data analysis and presentation, but concluding prior to analysis and interpretation of findings.

This research design proceeded as followed:

- Conduct preliminary research and literature review of the global food system.
- Write literature review focused on the U.S. food system, food system planning, and resiliency.

- Select sixteen cities for phase one, landscape view of U.S. cities' food systems (process detailed in "Research Site Selection").
- Conduct primary and secondary data collection in sixteen cities. This consisted of Internet research to gather detailed information from city websites, including executive leadership, food system organization within each city, planning and food system staff, active non-profit organizations involved in food system planning and policy, and related contact information. It also gathered data on key initiatives and dates of establishment, planning and policy documents, and an overview of which departments were active in city food system programming. All data collected was recorded on a multiple-page Excel spreadsheet.
- Conduct participant observation in Portland and San Francisco, snowball sampling to gain an informal interview with the Portland farmers' market key informant, an informal interview with a Portland farmers market organizer, and snowball sampling to gain an informal interview with Molly Hatfield, author of a critical planning document on food policy councils.
- Review 16 cities findings.
- Select three cities for embedded, multiple-case study (process detailed in "Research Site Selection").
- Collect additional primary and secondary data.
- Conduct interviews, two in person in San Francisco and the remainder by Skype audio phone and recorded.
- Organize, analyze, and write-up data findings.

- Conduct final interviews.
- Complete writing up data findings.
- Conduct and write up analysis, interpretation, and synthesis.
- Develop and write up conclusions and recommendations.
- Provide interview participants with Chapter 4: Presentation of Findings and update with their edits.
- Provide final draft for full dissertation committee review.

**Research Site Selection.** The methodology for choosing the cities for this study could have been developed in a number of ways. Both phases—understanding the landscape of food systems in 16 cities and the in-depth case study of three cities—could have used cities that are large, medium, and small; determined from a specific geographical array; that demonstrate a high level of food system activities; that have performed a Community Food Assessment; that include food in their comprehensive or sustainability plans; that have varying levels of “progressiveness” (e.g., blue vs. red states); or that rate along a scale in terms of resiliency or sustainability.

Research into resiliency as criteria did not uncover enough data on U.S. cities to adequately use resiliency levels, but many references and rating systems that rank U.S. cities on their levels of sustainable practices were discovered. *How Green is Your City? The SustainLane US City Rankings* (Karlenzig, 2007) provided a model for ranking cities according to overall sustainable practices, and current ranking systems for the most sustainable cities in the U.S. were found using 1) a general Internet search and 2) an academic document search using the ASU library database. The academic search found

data related to city comprehensive/sustainability plans and global city statistics, with but no literature ranking cities on sustainability practices.

The Internet search found two types of ranking systems: 1) Sustainable, green, smart, or resilient; and 2) Livability or quality of life. The livability and quality of life rankings generally focus on lifestyle amenities available to the middle-to-upper socioeconomic demographic; include a broad range of populations and locations (from very small towns to large metropolitan cities); and are published by lifestyle, travel, and real estate magazines and websites. These ranking systems were not used.

The sustainable, green, smart, or resilient ratings that were used focused on sets of social, economic, and environmental indicators that include air quality; water use, quality, and management; recycling and reuse; sustainable (LEED) building practices; parks and green space; energy use including renewable technologies; and transportation and transit including commute times, mass transit, walkability, and bicycling. They also include what the Mother Nature Network calls “green lifestyle choices” which include food and agriculture-related components. Some include no food or agriculture-related components, including Popular Science’s “green living” and “green perspective” categories, and Scientific American’s “green thinking” categories.

Table 2

*Sample of Green and Sustainable Cities Ratings*

Organization/Title	Website	Categories	Food Categories
Mother Nature Network: Green Cities	<a href="http://www.mnn.com">http://www.mnn.com</a>	Carbon footprint reduction; air; water; recycling; LEED; greenspace; renewable energy	Green lifestyle choices including organic products; buying local
Organic Gardening: Green Cities (small, mid-sized, and major metro). Used other ratings including SustainLane.	<a href="http://www.organicgardening.com">http://www.organicgardening.com</a>	Air; water; recycling; transit; parks/green space; renewable energy	Households with flower/vegetable gardens; % of population that eats natural foods; availability of locally grown food
Popular Science: Greenest Cities. Used other ratings.	<a href="http://www.popsoci.com">www.popsoci.com</a>	Electricity; transportation; green living and recycling; green perspective	None of the "green" categories are food related
Scientific American: Green Living Performances. Used other ratings.	<a href="http://www.scientificamerican.com">www.scientificamerican.com</a>	Green thinking; buildings; transportation; bikable; walkable	N/A
National Resources Defense Council (NRDC) Smart Cities: Smarter Cities	<a href="http://www.smartercities.nrdc.org">http://www.smartercities.nrdc.org</a>	Energy usage and initiatives	N/A
Green Growth Investment: Smart,	<a href="http://www.greengrowthinvestment.com">www.greengrowthinvestment.com</a>	Green technologies, initiatives, and	N/A

The general Internet search found 15 current ranking systems, which ranked a total of 46 cities for sustainable, green, smart, or resilient cities. An Excel spreadsheet was created and one full point (1.0) was given to each city for each mention in the 15 ranking systems. Cities that were included in the SustainLane project were given an additional 0.5 point when they were rated in a food system-related category. The total scores ranged from 0.5 to 14.5. The complete list of rating systems used and their metric is shown below:



Table 3

*Ratings Systems for Sustainable Cities*

<b>LEGEND</b>		
Metric		
1	BM	Bill Moyers & Co
1	BRR-RCI	Building Resilient Regions-Resilience Capacity Index
1	DB	Daily Beast 25 Greenest Cities (green thinking)
1	ED	Earthday
1	L	Livability.com Top Green Cities
1	MNN	Mother Nature Network
1	NRDC	NRDC Smarter Cities
1	OG	Organic Gardening
1	PS	Popular Science
1	SA	Scientific American-Top 10 Overall Green Cities
1	SL	SustainLane 50 Most Sustainable Cities-top 20
0.5	SL-LFA	SustainLane-Top 20 for Local Food and Agriculture
0.5	SL-GE	SustainLane-Top 20 for Green Economy
0.5	SL-KB&C	SustainLane-Top20 for Knowledge Base & Communications
1	TNGG	The Next Great Generation-Best and Worst Green Cities
1	WS	Walk Score top 20
1	TP-G	Triple Pundit 10 Global Resilient Cities
1	TP-US	Triple Pundit 10 US Climate-Ready Cities

The top 16 cities, with scores from 4.0 to 14.5 were chosen for this research project; the table with all cities, metrics, and ratings are in Appendix D: Sustainable Cities Ratings Spreadsheet. Listed from highest to lowest score the 16 cities are: Portland (OR), San Francisco, Seattle, Chicago, Boston, New York, Denver, Philadelphia, Minneapolis, Washington DC, Austin, Albuquerque, Oakland, Los Angeles, Baltimore, and San Diego. The 16 cities are followed by 30 cities with scores ranging from 0.5 to 3.5. In determining the cut-off point for inclusion, the initial suggestion by the researcher's committee to choose 10 cities (with a cut off point of 7.0) was considered. However, the next six cities, with scores from 4.0 to 6.5, included four cities that appear prominently in the literature as having emerging food system initiatives (Austin,

Oakland, Los Angeles, and Baltimore). Therefore, the top 16 cities, with scores ranging from 4 to 14.5, were chosen for this research and may be considered cities that demonstrate the most sustainable overall practices in the U.S.<sup>6</sup>

***Rationale for Choosing Sixteen Cities Based on Sustainability.*** The most comprehensive of all of the ranking systems found is *How Green is Your City? The SustainLane US City Rankings* (Karlenzig, 2007). *How Green is Your City?* ranked the largest 50 cities in the U.S. in “the first systematic report card measuring city quality of life combined with resource impacts” (Karlenzig, 2007, p. xii). It included only three categories out of 15 that relate to food systems, and the highest ranked cities overall do not rank the highest in the food-related categories.

Throughout the research for this study, a comprehensive rating for food systems similar to *How Green is Your City?* has not been found. It is possible that this study could contribute to the development of a systematic and comprehensive approach for measuring urban food systems.

***Rationale for Choosing Three Cities for an Embedded, Multiple-Case Study.*** Similar to choosing 16 cities for the food system landscape view, a range of criteria could have been used to choose the three case study cities. The cities could have been large, medium, and small; determined from a specific geographical array (East, west, and central U.S.); demonstrated a high level of food system activities; performed the most recent Community Food Assessments; include food in their comprehensive or

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<sup>6</sup> Since these 16 cities were chosen, an additional publication, *Green Cities: From A to Z* (Cohen, 2011) was discovered. The seven U.S. case studies included in *Green Cities* are included in this study’s 16 cities. This further validates the strength of the methods used for choosing the 16 cities for this research.

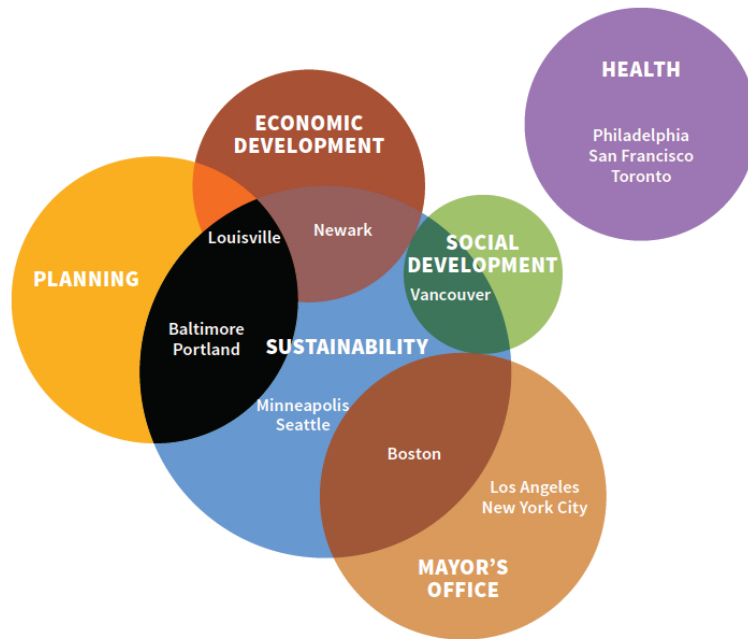
sustainability plans; have varying levels of “progressiveness” (e.g., blue vs. red states); or, based on the original survey of sustainability ratings they could have ranged from the highest, to middle, to lowest in overall sustainability practices.

After choosing the 16 cities based on sustainability practices, the rationale for the three city selection was to choose cities with strong overall sustainability practices, and those expected to show strong planning and sustainability practices around food. By choosing these cities it was hoped to discover “best practices” from which to learn and apply to other cities. Using Yin’s (2009) theory of replication logic, this study choose literal replication, where the three cities were predicted to have similar results, or findings, for predictable reasons. If cities were chosen from the highest to lowest levels of sustainable practices, then theoretical replication would have been used, where the cities would have been predicted to have different results, or findings, for predictable reasons.

During the 16 city research a document was reviewed that surveyed municipal food policy professionals serving in U.S. and Canadian cities about their city’s food program history, structure, and policy and planning (Hatfield, 2012). It confirmed initial findings that food policy/programming sits in different areas of cities’ organizational structures. It also confirmed the recent inception dates of food system programs in major U.S. cities, with the first in San Francisco in 2002. Another finding was that there are variations of support for food programs ranging from Mayor/ executive offices, non-profit organization, or hybrid support from both areas.

A semi-structured interview was conducted with Mollie Hatfield, the author of the report, to help develop criteria for choosing three cities from the initial sixteen. Hatfield

stated that it is important to pay attention to the location of food programming within governments because the location is an important influence on food policy priorities (Hatfield, 2012, p. 2). Her study found food programming housed in the following departments: Mayor’s Office, Sustainability, Planning, Health, Social Development, Economic Development, or some combination and is illustrated below:



*Figure 6.* Bureaucratic location of food policy programs (Hatfield, 2012, p. 16).

Hatfield’s study confirmed information found in the landscape research, with some programs having strong mayoral support, and with a range of locations within city organizations, and a range of inception dates since 2000. This study compared the highest-ranked of the 16 cities and found that they also have a broad range of inception dates and organizational locations. Four west coast cities were chosen initially.

Table 4

*Four Cities Food Systems Establishment Dates and Organizational Location*

City	Date Food Program Established	Location of Food Program in City Organization
San Francisco	2002	Department of Public Health
Portland	2005	Bureau of Planning and Sustainability
Los Angeles	2011	Office of the Mayor
Seattle	2012	Office of Sustainability and Environment

Because three cities were required for this study, the three that were the most consistent and comparable were selected. Of the four cities, Los Angeles has a much larger population of 3.8 million, while the other three cities range from 584,000 to 805,000 (2010 Census). Also, in the 16-city sustainability rating, Portland, San Francisco, and Seattle ranked 1 through 3; Los Angeles ranked 14. By excluding Los Angeles, the remaining cities still represent a broad range of initiation dates (2002, 2005, and 2012) and a range in location in their city organizations.

The Hatfield interview also validated the findings that there is great variation in all of the cities' programs, regardless of the area of support, the organizational structure, or the year the food system department is established. The fact that all U.S. programs are very new, and that they exhibit strong variation, gives this research project the opportunity to uncover a wide range of practices currently in use. Ultimately, it may lead to recommendations for some standards of practices for urban food programming.

**Case Study Protocol.** The first phase used a multiple-case study design to examine the landscape of U.S. urban food systems, and tracked data using a structured table shell, or matrix. The researcher completed this phase with limited interaction with

city staff or stakeholders. The second phase consisted of an embedded, multiple case-study design to discover, in depth, the characteristics of three cities' food systems (Yin, 2009, p. 40).

A case study protocol is essential for a multiple-case study, and “is a major way of increasing the *reliability* of case study research...” (Yin, 2009, p. 67). The protocol was developed for both phases of the project, recognizing that a large number of documents and web page links would be collected in the first phase, and a large amount of more complex data from interviews would be collected for the second phase.

The protocol for both phases included:

- Overview of the case study project including the project objectives and relevant readings about the topic.
- Field procedures that consisted of Internet data research and compilation, and the reading and review of relevant documents that were uncovered in this phase. This was an iterative process, with new findings leading to additional sources, and review of original sources.
- Case study questions and the creation of “table shells” for arrays of data.
- A guide for the case study report, which included an outline of data needed, and an organizational process to file the many reports and documents that were collected.
- Bibliographical information was organized using hard drive files and Internet bookmarks specific for each city.

### **Three Embedded Units of Analysis**

The units of analysis embedded within each of the three case studies are the stakeholders who conduct food system work; the approaches used in food system work; and the three levels of resources—federal, city, and community—that support food system work. These three units of analysis are described and discussed below.

**Stakeholders.** Stakeholders are individuals and groups who perform roles with the CFS including farm owners, operators, and workers; food producers; consumers; students; educators; retailers and market organizers and managers; gardeners; planning staff, consultants, and other food system professionals; and community-based organizations (e.g., planning, health, education, and economic development non-profit organizations and agencies).

Turner, McKnight & Kretzmann (1999) provide a guide to mapping and mobilizing community associations, and identify three types of “local individual and associational assets.” In addition to the municipal planners and other food system professionals, these three types encompass the many stakeholders and stakeholder groups who perform food system work.

1) Residents, including those with low incomes, are people with talents and solutions. They are not just clients with problems. Identifying and mobilizing residents’ gifts, skills and capacities helps build both community problem-solving abilities and economic power. 2) Local citizen associations are active in virtually every community as people organize around common cultural values, shared

social problems, physical proximity, social movements, and specific tasks. Identifying associations and understanding what they do are important steps towards re-empowering citizens and counteracting the dependency behaviors of needs-based strategies. 3) Neighborhood institutions are traditionally defined as not-for-profit, for-profit, and government, thus, they include non-profit agencies, businesses, libraries, and parks. Each neighborhood institution can bring many assets to support the community building initiatives of citizens and their associations” (p. 2).

**Approaches.** Approaches are the types of operations and initiatives that make up community food systems and include urban agriculture—market gardens, community, home/private, and school gardens; farmers’ markets; CSAs; co-ops; local food; community kitchens and food-related business incubators; and soup kitchens and food pantries. **Resources.** Resources that contribute to CFS include the federal policy, city planning, and community-level support that contribute to CFS. This unit of analysis includes federal-level food policy and funding including USDA SNAP and food program initiative grants like the FMPP; city-level urban agricultural planning policies, community food councils and policies, and comprehensive and sustainability plans; and community-level resources including educational and community events, marketing, networks, databases, and other food-based collaboration.

**Federal.** At the federal level policies, subsidies, incentives, and funding support urban food systems and agriculture to improve food systems and food access. In 2012, out of the 7,100 farmers’ markets in the U.S., only 1,500 had the electronic benefit



transfer capacity to process SNAP vouchers. In fiscal year 2012 the USDA funded \$4,000,000 for education and to upgrade electronic card readers in non-participating farmers' markets. Programs including the Farmers' Market Promotion Program (FMPP) and various grants to municipalities to improve food access are also resources that cities can use in food system programming and policy.

**City.** At the city level, some of the resources used by food system professionals include food policy councils, community food assessments, urban agricultural land planning policies and updates, and the inclusion of food in comprehensive and sustainability plans. Urban agricultural land planning policy implementation and updates are one tool that cities are using to encourage urban food production, and cities are learning from each other. Cities are using food policy councils to establish planning and policies around food, and food is included in some general, comprehensive, and/or sustainability plans as a prescriptive approach to increase food access and supply.

**Community.** Community-level resources support the creation and implementation of CFS and include educational (local traditional products, wild gathering, culinary, farming, seed saving, hydroponics/window gardens, animal raising); community events (convivial, food/wine, seasonal festivities, local traditional festivities); recreational events; marketing; networks; and food resource databases. Additional resources include fund raising, building/remodeling facilities, and child- and senior-centered activities. Of the three levels (federal, city, and community-level) the community-level resources cover a broad range of activities, and the results from this study suggest that further research may be needed to fully grasp the extent of these activities in cities.

## **Data Collection Methods**

**Sixteen-City Data Collection.** For the first research phase primary and secondary data was collected at the city level with a comprehensive search into city websites. Broad “Google-type” searches were not performed, as the intent was to discover how the cities portray their food systems, and how their programming fits within the city structure. Numerous reports and publications were discovered, which, when reviewed, led to new sources of information on each city. The process was iterative, as new documents and web pages were constantly being discovered, and new documents were posted on city websites for the duration of the research process.

This phase was purposely done on each city’s website and the websites of organizations closely connected to their food programming. For example, some cities showed a strong working relationship between their food systems programming and policy department and a non-profit organization that works closely with their food program. In those cases, the non-profit organization’s website was researched.

According to the established case study protocol, table shells in the form of a multi-tabbed Microsoft Excel spreadsheet was populated. Each indicator was assigned one worksheet, and each worksheet was formatted identically with rows and columns representing the 16 cities, information gathered, the source, and a notes column. Data was copied and pasted from the Internet, or typed into each worksheet. Using this method allowed the researcher to enter, or copy and paste unlimited information as it was found. Later, when writing up the findings and analysis, relevant data was used, while some

extraneous data was not, but all data is saved in the table shell to ensure reliability of data sources.

The full list of indicators researched is: Urban agriculture, community gardens, private gardens, school gardens, farmers' markets, CSAs, community kitchens and incubators, soup kitchens and pantries, co-ops, local food, food policy council, and community food assessments.

A master copy (Cites-Master) was created, and information that seemed most significant from the worksheets was pasted. Also, additional columns were added to this worksheet to include information found that didn't match the criteria for the individual indicator worksheets. For example, a column was added titled City Goals, which noted especially strong indicators of food system goals, usually from the Mayor or other executive office.

As part of the iterative nature of this study, after indicators were discovered for a specific city, the researcher often returned to the other cities' websites to search for that indicator. As city food systems were researched, and discoveries made, a full picture of the landscape of the U.S. urban food system emerged.

### **Three-City Data Collection.**

*Interviews.* Interviews were conducted with informants involved in urban food system planning, programming, and policy in the three cities. Interviews were conducted from January 2013 to February 2014, with most taking place between December 2013 and January 2014. Interviews were semi-structured, with three separate sets of questions depending on the role of the informant. The interview questions are listed in Appendix E:

Interview Questions. Most interviews took place over the phone, with three taking place in person. Interviews lasted from 45 minutes to an hour and forty minutes. After receiving verbal or email approval to record the interviews, interviews were recorded and notes were taken to capture concepts that the researcher found especially relevant. A handheld recorder was used for in-person interviews. Phone interviews were conducted using Skype audio calls, and recorded using Call Recorder for Skype. Initial interviews were transcribed by the researcher; subsequent interviews were professionally transcribed. After transcription the researcher listened to the audio recordings while reading through the transcripts and corrected any errors.

Follow-up calls or emails were used to obtain additional information as gaps were found in the research, or if clarification was needed. The nine interview informants were emailed the findings chapter with their quotations and they were asked to respond with comments or edits. All responses were replied to, and their edits were incorporated. Although interviews were included as data collection methods as part of the overall research design, the types of informants were not selected until primary and secondary research collection was underway. A wide range of stakeholders involved in urban food systems had been identified during early research and literature review. Then, as primary and secondary documents were discovered and reviewed, the types of informants who were directly involved in food system planning and policy were identified as interview informants including: food system directors, those involved in food policy councils, city planners and planning consultants, and farmers market organizers and marketing/development staff.

As evidenced during initial data collection, many other non-profit organizations are involved in urban food systems in a range of roles and activities. But, inclusion of these contacts proved to be too wide-ranging for this research project. As this project has a base in urban planning, keeping a narrow focus on the functions of municipal planners and policy makers, and those instrumental in the development and operation of farmers' markets became central to the interview process.

As suggested by Creswell (2009) and Bloomberg & Volpe (2012), the conceptual framework guided the study, linking each phase with the original research intent. In this case, the research questions were designed so that informants would provide data related to that framework. Interview questions were designed to gain data from informants in these areas:

- Urban resiliency, both food and comprehensive categories—food system directors and FPC representatives
- Urban planning and food—urban planners
- Community food systems—farmers' market representatives.

The questions were also designed to understand how the cities' food systems use of federal, city, and community resources to improve their food systems.

***Participant Observation.*** The results of participant observation were not transcribed or formally included in the findings; however they were used to inform and add context for the study. Participant observation was conducted as a secondary activity, adding a valuable data collection method, and increasing project validity. The study of food products in urban settings, especially farmers' markets, farms, and specialty markets

is varied, rich in context, and valuable as a data collection technique. Observing behavior in urban markets gives a sense of the types of shoppers and vendors, the product sources and types of farmers and producers, marketing methods, and overall market design. It is also a good opportunity for researchers to speak informally with organizers, vendors, and consumers, and to discover additional interview informants.

One example of how participant observation informed this study is when the researcher arrived at the Ferry Plaza Farmer's Market on December 12, 2013, one day prior to interviewing the Director of Development for the markets. Among other things the researcher noted that 1) the market was on a Thursday, 2) while the market to the left of the clock tower consisted of normal farmers' market products including vegetables, fruit, and prepared food, the market to the right of the clock tower consisted of small food booths, with prepared food similar to food truck fare, and 3) there was a group of elementary-aged school children exploring the food booths. The subsequent interview with the Development Director included the fact that the Thursday market was developed after research found that the area was currently saturated with typical farmers markets, and in response a lunchtime market was developed with ready-to-eat products along with a smaller selection of farmers' market booths. This design serves a significant amount of local business and residential customers, and the food purveyors include products from the farmers' market in their daily specials. An educational goal of the market organizers is that some of these prepared food consumers will also become food product buyers, increasing the demand for farmers' market products.

The observation of the school children prompted a question during the interview, with resulting data on a very robust food, nutrition, and culinary education program offered to all of the City's elementary school children.

***Primary and Secondary Data.*** Throughout the research process primary and secondary documents including reports, plans, proclamations, and policies written by city staff, planning consultants, U.S. governmental organizations, and food system-related non-profit groups were collected. During the interview process the relationship between the documents and each city's planning processes became clearer. For example, during the interview with the Food Systems Director for San Francisco, it was found that the Mayor was a strong proponent of increasing planning, programming, and policy for food. He was involved in a rural/urban roundtable organized by the non-profit group Roots of Change, and subsequently issued the *Executive Directive on Healthy and Sustainable Food* in 2009. This Directive set a framework for city food policy, and resulted in every city department engaging in food system planning, reporting to the Food System Director on what their department can do to advance the Directive. Information gleaned from the interviews was essential in understanding the relative importance of the documents that had been collected, and provided guidance for collecting new documents.

***Quantitative Data-Food Indicators.*** The qualitative data were supplemented with a limited quantitative study that collected available data on specific indicators of the three-cities' existing food systems. This research was conducted after the 16-city research was complete, as some of that data included these indicators. These data were obtained from very specific searches of city websites and documents, interview questions, emails

to city staff, independent websites, and USDA data. Research into food pantries and soup kitchens was done through the Internet, with several conflicting results. Co-ops were also done through Internet searches, but the results seem reliable due to several comparable results. Community kitchens research resulted in many hits describing the use and desirability of community kitchens as educational and economic development tools, but with few results.

Metrics were calculated based on city population, square miles, population per square mile, number of people below poverty level, or percentage below poverty level, depending on the indicator and metric.

Because of the nascent nature of urban food planning and policy making, data availability is overall uneven, and where available it tends to be sparse, for example, data on a specific indicator is available for some years, skipping others. Research including emails to USDA researchers, and a standard question for Food System Directors resulted in no data for urban agriculture or local food indicators. This will be further explored in subsequent chapters.

This challenge further justified the use of the multiple-city, embedded case study method, and an approach that is exploratory, reflexive, and iterative. This design resulted in a continuous gathering of data, and incorporated feedback loops as new information was discovered which informed or confirmed earlier data findings. What these findings do show is what metrics cities are or are not tracking—the fact that there are metrics that were presumed to be available but are not is further justification for increased research and measurement of urban food systems. The indicators and metrics that were compiled



for Portland, San Francisco, and Seattle do not provide a strong comparison of the cities' food systems, however, a table with the data compiled is included as Appendix F: Three Cities Indicators and Metrics.

**Data Sources.** Primary and secondary data was collected from city websites and informants in the form of documents, databases, and archives. In addition, the following sources were used to collect data: community capacity-building organizations; planning consultants and organizations such as the American Planning Association and the Urban Land Institute; food security and quality organizations such as the National Center for Appropriate Technology's National Sustainable Agriculture Information Service and the Farmers Market Coalition; urban resiliency and sustainability organizations such as the Resilience Alliance; and educational institutions including agricultural colleges. Websites and databases from governmental agencies including Housing and Urban Development, U.S. Department of Agriculture, U.S. Census, and the United Nations Food and Agriculture Organization were also used. Email communications with USDA subject experts were used to inquire about the availability of data on city food system indicators.

The majority of information for the three-city case study was acquired through semi-structured interviews with key informants who are professionals working within each city's food system. These interviews brought to light additional documents which were added to existing data.

### **Data Analysis and Reporting Findings**

**Analytic Strategy.** Theories and prior research inform the conceptual framework, and the framework informs the analytic strategy, which offers potential coding

categories. Bloomberg and Volpe (2012) suggest using either individual or a combination of strategies in qualitative analysis. Data, or words, are reduced and used to identify themes or patterns, and “the analytic process is an interweaving of inductive and deductive thinking. Ultimately the researcher decides what will be reported.” Using the Bloomberg and Volpe’s Template Approach, key codes were derived from the theory or research questions, and the codes serve as a template, “remaining flexible as the data analysis process proceeds” (p. 138). The process used in this study was informed by research and used Bloomberg and Volpe’s *Road Map for the Process of Qualitative Data Analysis: An Outline* (2012, p. 140):

Figure 8.1 Road Map for the Process of Qualitative Data Analysis: An Outline

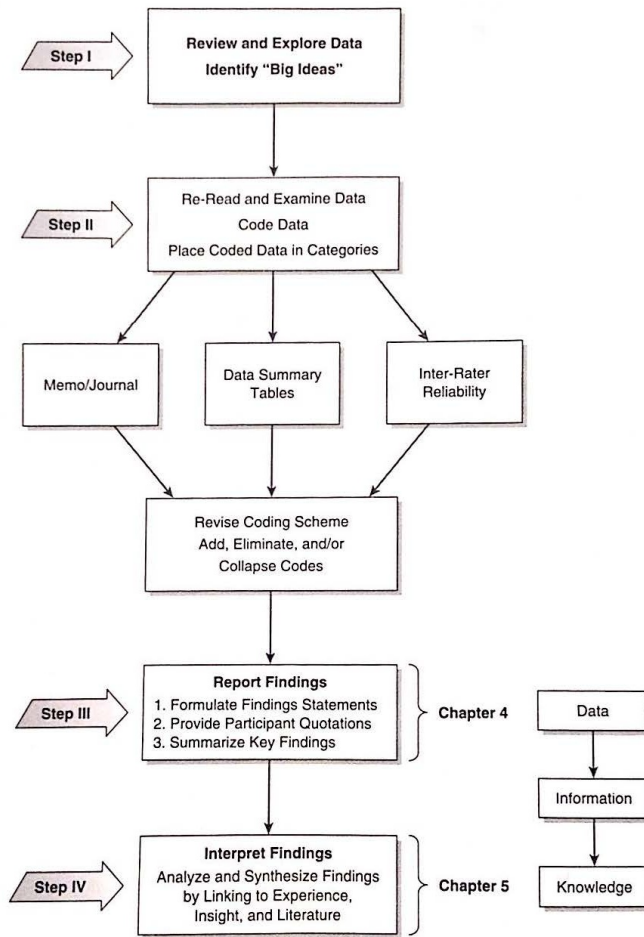


Figure 7. Road map for the process of qualitative data analysis: an outline (Bloomberg & Volpe, 2012, p. 140).

Yin (2009) suggests a similar process of relying on theoretical propositions (p. 130-131) and reminds the researcher to follow the theoretical propositions that led to the case study. He states “The original objectives and design of the case study presumably were based on such propositions, which in turn reflected a set of research questions, review of the literature, and new hypotheses or propositions” (2009, p. 130). He adds that

“theoretical propositions stemming from “how” and “why” questions can be extremely useful in guiding case study analysis in this manner” (p. 131).

**Organizing and Preparing Data for Analysis.** The process of organizing this study’s data was developed in the research protocol and followed throughout the study. For the first phase, data was in the form of reports, Internet webpages, email communication, and telephone conversations and informal interviews. The data was used to further develop the study, as in the telephone interview that helped in selecting cities for the three-city case study phase. The reports and Internet pages, primary and secondary data sources, were reviewed and written up as part of the exploratory phase, with little analysis.

Data from the second phase consisted of additional reports and Internet webpages, email communication, and in-person and telephone semi-structured interviews. The reports and webpages were filed electronically by city, and Internet webpages were bookmarked using the same categorical system as the reports. The interviews resulted in handwritten notes and audio files. The researcher transcribed two audio files, and subsequent files were transcribed professionally. The researcher checked the professionally transcribed files against the audio recordings and errors were corrected. Since all respondents agreed to be recorded and did not ask to remain anonymous it was not necessary to develop a system to ensure confidentiality.

**Data Review and Exploration.**

*Category Development.* Bloomberg and Volpe state that the conceptual framework is the “...centerpiece in managing and reducing the data.” The framework is

adapted to become the coding legend for the data. At the same time, the original conceptual framework stays intact as the guiding framework for the literature review. (p. 142).

Saldana states “aside from such cognitive skills as induction, deduction, abduction, synthesis, evaluation, and logical and critical thinking, there are seven personal attributes all qualitative researchers should possess, particularly for coding processes.” These personal attributes are the need to 1) be organized, 2) exercise perseverance, 3) be able to deal with ambiguity, 4) exercise flexibility, 5) be creative, 6) be rigorously ethical, and 7) have an extensive vocabulary. He reminds researchers that quantitative research precision rests with numeric accuracy, while precision in qualitative research rests with word choices. (2009, pp. 28-30)

The interviews were reviewed and explored to identify “big ideas” (Bloomberg & Volpe, 2012, p. 140, figure 8.1). As the raw data was read, coding categories were developed while referencing the conceptual framework. During this process the concepts included in the framework were both refined and expanded, according to the concepts included in the raw data. For example, in this research project, concepts in the original framework were refined to combine urban resiliency and food; and urban resiliency (comprehensive categories). The reason is that within the context of the interviews, the resulting sub-concepts were interwoven, with food being one of many resiliency concepts that were identified in the informant interviews.

The concepts were expanded from the original conceptual framework as new and related concepts were discovered both through the review of secondary level data, and through the informant interviews.

The first interviews were conducted, then read and coded within the text. Then, a worksheet was created that listed the concepts from the conceptual and theoretical frameworks. There was some overlap in the original concepts, so duplicate concepts were deleted. The resulting master categories were:

- Urban Resiliency
- Urban planning and food
  - Federal
  - City
  - Community
  - Funding
- Community food systems
- Food security and food deserts
- Sustainability
- Urban Poverty

Once the categories were developed and grouped, the categories from the first interview were matched to the master categories, and sorted and grouped together. This step confirmed that the conceptual framework informed the research questions, which in turn informed the interview questions. The codes that were derived from the interview

data, once sorted, matched up to the conceptual framework concepts. (Appendix G: Coding Legend and Descriptors)

As subsequent interview transcripts were examined the coding legend was revised with codes added, eliminated, and or collapsed. Then, the data was placed into categories, with notable sections categorized together. The researcher was careful to place aside categories that, although interesting, were not necessarily meaningful or noteworthy in terms of this study's analysis. Precision is key, and participant identification was included with each unit of information, and each passage was noted as to its position in the original transcription. (Bloomberg & Volpe, 2012, pp. 141-142).

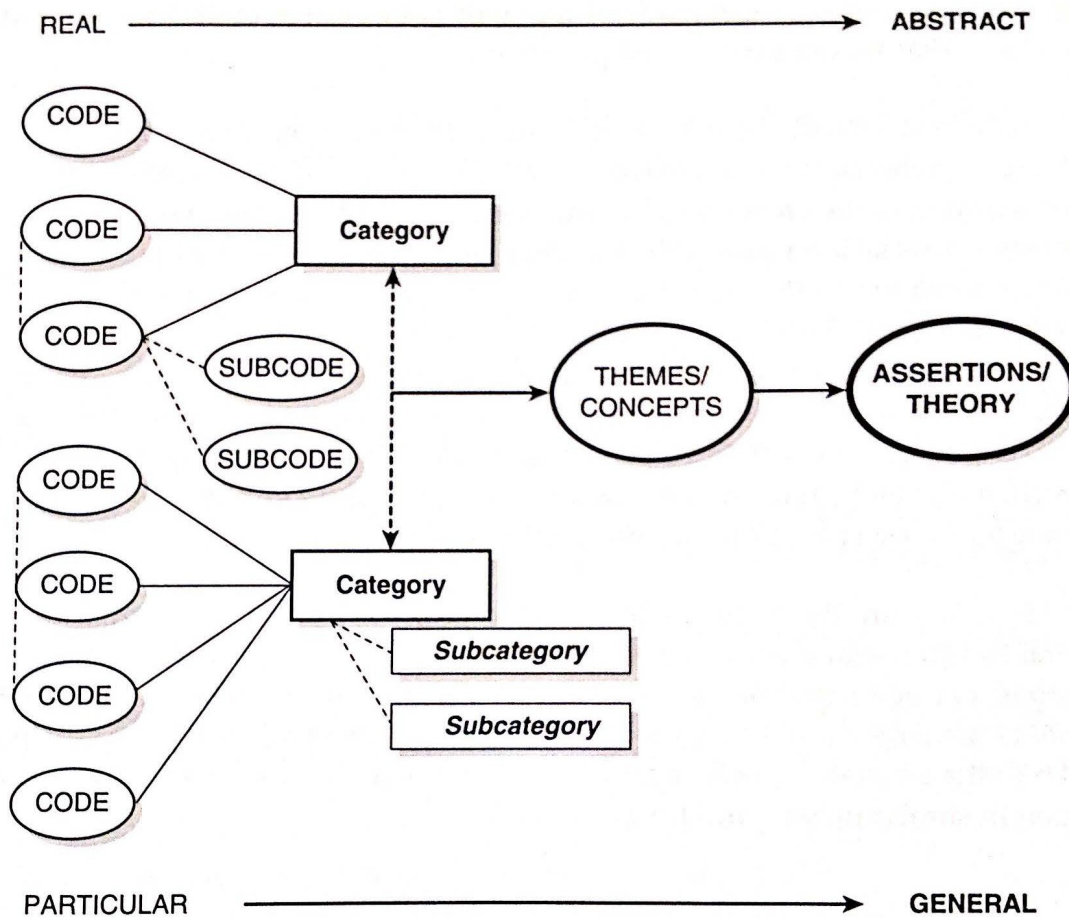
***Descriptor Development.*** The process of assigning descriptors to the emerging codes begins early in the process of developing codes. To ensure that the analysis will be comprehensive, this is the point to revisit the study's research questions and ensure that "there is at least one category that relates to each research question (Bloomberg & Volpe, 2012, p. 141). Before assigning descriptors the researcher revisited the research questions, and matched them with the draft codes. Research question 1 was answered within the landscape view research, and that section is not coded. Research question 2 matched with coding category 3—Community Food Systems. Research question 3 matched with coding category 2—Urban Planning and Food. Research question 4 matched with coding category 1—Urban Resiliency. The codes in category 4 related to food security and food access, and were combined with category 6-urban poverty, and resiliency-vulnerability food. Category 5-sustainability was analyzed in relation to the

resiliency and sustainability discussion in the analysis. This sorting is illustrated in Appendix H: Coding Legend—Sorted.

***Data Rereading and Coding.*** While reading and re-reading the data, notes were jotted in the margins and in a notebook, including “ideas, thoughts, reflections, and comments that come to mind” in order to log initial and subsequent sense of the data (Bloomberg & Volpe, 2012, p. 141).

Saldana states, “...qualitative codes are essence-capturing and essential elements of the research story that, when clustered together according to similarity and regularity (a pattern) they actively facilitate the development of categories and thus analysis of their connections” (2013, p. 8). He states that is rare for anyone to get coding right the first time, and recoding continues through subsequent reading of the data. He characterizes the process of moving from data to theory, or from the abstract to reaching theory. Categorizing moves from abstract data, to general, higher-level concepts, which are then developed into theory. A theme is an outcome of coding, categorization, and analytic reflection, not something that is, in itself, coded. He adds that development of theory is not always a necessary outcome for qualitative research. (pp. 11-13). Saldana’s codes-to-theory model is shown below:





**Figure 1.1** A streamlined codes-to-theory model for qualitative inquiry

*Figure 8.* Streamlined codes-to-theory model for qualitative inquiry (Saldana, 2013, p. 13).

Most qualitative research texts include suggestions for using electronic software for coding and sorting data. Had the study included structured interviews or questionnaires, software may have been employed. In this case of this study, with less than a dozen semi-structured interviews, sorting by hand was a manageable process.

Analyzing the content of the data (as opposed to analysis and interpreting the findings, which is the next step) is one of the most basic techniques for examining text

(Hay, 2000, p. 125). The analysis of the interview data in this study included the original reading of the transcripts, creating initial codes for concepts included in those data, and rating or determining the importance of the concepts. By re-reading, and returning to the study's conceptual framework, both expected and unexpected results were coded and included in the presentation of the data. Bloomberg and Volpe warn against using predetermined categories, and running the risk of coding text according to what the researcher expects to find. They stress that the conceptual framework must stay flexible throughout this process. The reason for interviewing key informants in this study was to "find out what *their* experience is and to endeavor to understand it from *their* perspective" (2012, p. 143). As they suggested, during this process of coding and categorizing some excerpts fit in more than one category, and they were placed where it seemed the most appropriate. These instances were noted, and the text was later coded more specifically.

***Data Sorting and Categorizing.*** The categories of the conceptual framework become the category headings and subheadings, and under those the codes and descriptors were listed. Once data is coded the quotes within the interviews was copied and pasted into separate analytical categories. The recommendations for the process of sorting and categorizing data, involve cutting, pasting, and sorting hard-copy data on pages, note cards, flip charts, and into manila envelopes. It is also recommended that original copies are saved before cutting and sorting (Bloomberg & Volpe, 2012, p. 146).

For this project, electronic copies of the original voice recordings and transcripts were archived. The transcripts were duplicated and codes were applied, and those copies

were archived. Those coded copies were then duplicated, and data was sorted and categorized using electronic Word documents. Although all actual cutting and pasting was done electronically, large paper pages were used by the researcher to hand write the analytic categories and the coded data that most closely matched each category.

***Presenting Research Findings.*** Yin suggests writing the case study report in a way that communicates the information to “non-specialists” and that case studies can go beyond the role of a typical research report. Although this research project is written specifically to the requirements of the researcher’s dissertation committee and academic unit, it may relate to planners, policy makers, and other practitioners in sharing the findings and analysis, and furthering the practice of planning for urban food systems (2009, p. 169-170).

In presenting the findings the researcher is tasked with telling the story that she learned from the informants, using quotes to illustrate salient points. The research findings were represented as objectively as possible, and without researcher bias.

***Developing Quotation Categories.*** At this point the data had been reduced into categories and subcategories of information, which is the first goal of presenting the data. They were then reviewed and reread to be sure that the codes were consistent across interviews. The qualitative data obtained through interviews was presented through narrative passages, “with extensive samples of quotations from participants.” This method of presenting the research findings uses the informants’ words, and demonstrates that “the reality of the participants and the situation studied is accurately represented.” Although this narrative can be represented graphically in tables or charts, for this study

the goal was for the findings to be “seamlessly woven into the discussion... in narrative form.” There are several formats to present this narrative, and this project grouped individual excerpts in “thematically connected categories” (Bloomberg & Volpe, 2012, pp. 148-149).

The findings were presented with an introductory statement of the study’s purpose. The chapter was organized by research using the research questions, and Bloomberg and Volpe’s Appendix Z: Road Map of Findings was used to organize data for this phase (Bloomberg & Volpe, 2012, p. 277). The research questions were reviewed, and each research question was matched with the resulting findings. The actual number of mentions for each code, or category, can be found in Appendix G: Coding Legend and Descriptors. The Coding Legend (Appendix H: Coding Legend—Sorted) was transferred into an Excel spreadsheet in order to sort and examine the final codes related to their descriptors and research questions. The data were examined, sorted in various ways, and used as the organizational structure for writing up the Findings chapter.

Reporting the findings is not merely reporting what individuals said, but with what frequency. In this case, the frequencies were used to indicate overall prominence of each category, but percentages were not used. Prominence is loosely related to frequency, and of how strongly the responses answer the research questions, or how strongly they suggest further research. Lead-in sentences were used to introduce the quotations, so that even without the quotations it would be clear what points were being made. This section was concluded with summary paragraph and the intent of the next two chapters.

## **Analyzing and Interpreting Findings**

Background information was developed for the three cities and was included in the analysis section. During the analysis phase it is important to continue to connect the study's findings and analysis with the relevant research. This was done by using the study's research questions as a framework for coding and analyzing the findings. The research questions reflect the theoretical framework that was the basis for the literature review. By continuing to work within this framework through the analysis stage the study was able to contribute to the understanding of the phenomenon studied (Bloomberg & Volpe, 2012, p. 178).

During the process of rereading, coding, sorting, and categorizing, the researcher made notes related to the next step, analyzing and interpreting findings. Emergent patterns and themes were recognized throughout the process. Concepts that seemed to require further research were noted, as well as concepts that may contribute to recommendations in the conclusion. Bloomberg and Volpe describe the process of analyzing qualitative data as “a highly intuitive process; it is certainly not mechanical or technical” and that “the process is an ongoing one, involving continual reflection about the findings and asking analytical questions (Bloomberg & Volpe, 2012, p. 172). The process used in this study's analysis was iterative, with ongoing reflection of the information being studied.

Bloomberg and Volpe describe data analysis as “deconstructing the findings—an essentially postmodern concept.” Analysis involves scrutinizing the data to see what has been found by comparing across and within groups, and by comparing findings with

those from other studies. (2012, pp. 171-172). They say that the findings chapter “splits apart and separates out pieces and chunks of data to tell the ‘story of the research’ and the analysis chapter is an attempt to reconstruct a holistic understanding of your study” (2012, p. 179)

Both Bloomberg and Volpe (2012) and Yin (2009) say that going deeper into the meaning of data begins when codes were assigned to the data. Yin says that pattern-matching logic is “one of the most desirable techniques” for case study analysis. He says that this method compares the empirically-based pattern with predicted one, and when patterns coincide it strengthens internal validity (2009, p. 136). In this study’s research design, literal replication was predicted between the three case study cities because of their similarities, high ratings as sustainable cities, and reputations in both popular and academic literature as forward-thinking, food-centered cities. Yin says that at this “state of the art” of qualitative research analysis, pattern matching involves no precise comparisons, but that researchers should “avoid postulating very subtle patterns, so that your pattern matching deals with gross matches or mismatches who’s interpretation is less likely to be challenged (pp. 140-141). The analysis for this project followed Yin’s guidelines, and used Bloomberg and Volpe’s (2012) detailed chapter on qualitative analysis to complete this analysis.

The analysis chapter begins with a brief introductory paragraph and chapter overview. It then presents a summary of the findings and how the data were analyzed and synthesized. The findings were analyzed in the same organizational structure as in the findings chapter. Although the analysis is presented in narrative form, the findings,

analysis, and conclusions were outlined throughout the process using Bloomberg and Volpe's Appendix CC (2012, p. 284).

### **Ethical Considerations**

This project received Exempt Status from the Arizona State University Human Subjects Institutional Review Board on June 16, 2010 (Appendix I: IRB Exempt Status). Subsequent email confirmation from Susan Metosky on March 1, 2010 and June 15, 2012 confirmed that as long as there are no changes to the study research could continue. There is no expiration date for exempt studies.

### **Quality in Case Study Research Design: Validity and Reliability**

Hay states "Qualitative methods... have traditionally been used as part of triangulation or multiple methods in a search for validity and corroborative evidence... and in different conceptual frameworks to reveal that which has previously been considered unknowable—feelings, emotions, attitudes, perceptions, and cognition" (Hay, 2000, p. 18). He states, "It is no frivolous thing to share, interpret and represent others' experiences" and stresses the need for ensuring rigor in all research, and "for others using our research to have reason to believe it has been conducted dependably" (P. 46). He describes research as starting from our interpretive community, our research participant community and ourselves, eventually returning to our interpretive community for assessment. Formulating strategies early in the research design process, and applying them at various stages in the process, including opening up our research for checking within the participant community can ensure validity. Documentation of each stage of research is necessary for checking by the interpretive community.

Yin (2009, p. 34) provides four tests commonly used in social science research to determine case study quality—construct validity, internal validity, external validity, and reliability. The following tactics and stages of research were used in this study insure quality throughout the process:

**Construct Validity.** Construct validity is increased by identifying the correct operational measures for the concepts being studied (Yin, 2009, p. 40). This study was operationalized by defining the concepts being studied, and including an embedded, three city study. One concern, using subjective judgments in analyzing the data was addressed by transcribing and reviewing the content of the interviews, carefully and objectively laying out the findings, and choosing a consistent method to analyze the data and draw conclusions. These processes all followed the original conceptual framework and other researchers should be able to follow the logic used. Key informants who are subject experts in their fields reviewed the draft case study report during composition.

In addition, multiple sources of evidence were used during data collection. Primary sources included CFS stakeholders working directly within food systems, and planners, consultants, and city staff. Primary and secondary sources include city documents, databases and archives; organizational documentation from the American Planning Association; data compiled by organizations such as the United States Department of Agriculture (USDA), the National Center for Appropriate Technology's National Sustainable Agriculture Information Service, the Farmers Market Coalition, the U.S. Housing and Urban Development (HUD), and the U.S. Census; urban resiliency and



sustainability organizations such as the Resilience Alliance and the Institute of Governmental Studies; Resilience Capacity Index.

**Internal Validity.** Yin (2009) states that for descriptive or exploratory case studies, which do not attempt to prove causality, internal validity is not a concern. He does suggest using pattern matching during qualitative data analysis to strengthen its internal validity. In this study pattern matching was used in the case of literal replication, where the results between the cases were predicted to produce similar results. Had the results been predicted to differ, theoretical replication would be predicted. Yin states that if the patterns coincide the results strengthen the case study's internal validity (Yin, 2009, p. 43).

This study chose three cities based on their similarities, with food systems and city organizations that seemed consistent and comparable and it was predicted that the results and conclusions would be similar between cities.

**External Validity.** For this study, replication logic was used for analytic generalization. While study data should be generalizable to a larger universe, case study analysis strives to generalize to some broader theory (Yin, 2009, p. 43). This study produced almost 20 recommendations for food system professionals, which were based on similar conclusions derived from the analysis, showing that the study produced concepts and theories that are generalizable to broader theories.

**Reliability.** This study utilized a case study protocol that was followed throughout the study. A case study database was developed and the system was adhered to. A chain of evidence was maintained throughout, with an organized system for filing

data. The study includes appendices showing the transparency of methods, matrices, and tables used to design, track, and analyze data. Also, the full 156 pages of transcriptions are not included in this document because of space considerations, but the interview informants were all supplied with their transcriptions for review.

### **Limitations and Delimitations of the Study**

According to Bloomberg & Volpe, “limitations and delimitations define potential weaknesses of the study and the scope of the study.” A goal of qualitative research is transferability, or the ability to “apply findings in similar contexts or settings.” They state: “Limitations are external conditions that restrict or constrain the study’s scope or may affect its outcome. Delimitations are conditions or parameters that the researcher intentionally imposes in order to limit the scope of a study. (2012, pp. 8-9).”

For the semi-structured and unstructured interviews, snowball sampling was used to find subject experts for the study. A small number of informants from three different areas of food system work areas were interviewed (food system director/advisor, urban planner, and farmers market professional), possibly resulting in a limited range of information. However, the informants are all subject matter experts in their fields.

The following questions were included in the original Interview Questions for Food System Directors/Advisors, but were not asked due to time limitations: 1) What outside resources do you rely on for support (other FPC directors, academic organizations, non-profits)? What resources do you need? 2) Characterize change since you began in this position. What do you see in the next 10 years? 3) What are your top three programming initiatives for 2014?

The study originally intended to collect data sets of indicators and metrics for measuring food systems, but it was discovered early on that this would not be possible within the range of this study, and in fact some of the most important indicators are not tracked by cities. However, this study followed established case study design and protocol, which does not include tracking of quantitative data.

### **Chapter Summary**

This chapter was designed to give a thorough understanding of the research design and methods used to complete the research project. It listed the research questions and rationale for conducting the research, and tied the research questions, the overview of information needed, and the interview questions together. It described the data collection methods, the method for analyzing raw data and reporting findings, and for data analysis and interpretation. It concluded by describing how ethical considerations, and project validity and reliability were assured, and with the limitations of the study. Chapter 4: Presentation of Findings lays out the findings after the raw data has been organized, analyzed, coded, categorized, sorted. The chapter includes narrative description of the data collected, with quotations from informant interviews.

## CHAPTER 4

### PRESENTATION OF FINDINGS

#### Overview

The purpose of this study was to explore the relationship between planning for community food systems (CFS) and urban resiliency. The research proposes that by understanding this link, new planning approaches can be developed to strengthen CFS, which are important components of urban resiliency. This chapter presents the key findings obtained through two research phases:

1) A multiple-case study of 16 U.S. cities that exhibit high levels of sustainable practices to understand the landscape of U.S. urban food systems, and how food system work is being done in cities. During this phase the criteria were developed for choosing three cities for a multiple-case study. The findings from the landscape view of U.S. urban food systems produced many documents, showing that cities are committing resources to planning and developing policies for community food systems. The documents provided a secondary literature review with up-to-date information about current food system programming, and provided context for developing this study's interview questions.

2) A three-city, embedded, multiple-case study to understand what resources are being used to support food system work, and to explore the relationship between these resources and success in creating and improving community food systems. This phase also asked if and how the concept of resiliency is used by food system professionals to promote overall urban resiliency. The findings from the semi-structured interviews are reported in a narrative style with quotations.

Data collection methods for this project are detailed in Chapter 3: Methodology. Each category of data was organized in response to the research questions, which were guided by the conceptual framework. For this chapter, raw data were organized, analyzed, coded, and reported in preparation for Chapter 5: Analysis, Interpretation, and Synthesis.

### **CFS Indicators and Metrics**

The original research design proposed that indicators and metrics related to cities' food systems would be gathered and organized into a table. It proposed that these metrics could be used to measure the progress of cities' food system work. However, it became apparent that these indicators are not being tracked sufficiently to create metrics and measure progress. Although there is some tracking and measurement in cities, there are no agreed-upon data sets or metrics. This, in itself, presents a strong opportunity for further research. These findings are presented in this chapter, and discussed in chapters 5 and 6.

The indicators and related metrics are shown in Table 1. *Community Food System Indicators and Metrics* in Chapter 3: Methodology.

### **Reporting Findings: Landscape View of U.S. Food System**

Research Question 1 asked: What is the current landscape of community food systems within the most sustainable U.S. cities? The findings came from primary and secondary documents including reports, plans, recommendations, assessments, proclamations, and other food-related documents. Research focused on the websites of 16 cities, with some data from linked websites such as non-profit organizations that support

cities' food systems work. The 16 cities were Portland (OR), San Francisco, Seattle, Chicago, Boston, New York, Denver, Philadelphia, Minneapolis, Washington DC, Austin, Albuquerque, Oakland, Los Angeles, Baltimore, and San Diego

A search of city websites resulted in numerous publications and reports, almost all of which were created since 2000. They include those produced by city staff and departments; consultants for city departments; and non-profit and other community organizations working with cities on food system programming and policy. While cities are conducting similar plans and implementing a similar range of projects, there is little format consistency, as titles and content organization vary. Document types included: Food policy councils plans and reports; food systems plans, assessments, and reports; urban agriculture overviews, zoning updates, inventories, and agricultural plans and reports; food system related publications for the public; community garden information, inventories, and databases; and sustainability and comprehensive plans and reports.

Prominent reports from Portland, San Francisco, and Seattle include Portland's *Diggable City series* (2005-2007), Portland Climate Action Plan (2009); the *Multnomah Food Action Plan* (2010); *Portland Comprehensive Plan* (2011); and *The Portland Plan* (2012); *San Francisco's General Plan* (1996); the *Mayor's Executive Directive on Healthy and Sustainable Food* (2009); *San Francisco Food Security Task Force Annual Report* (2010); *The Sustainability Plan* (1997); *Assessment of Food Security in San Francisco* (2013); *The Seattle Food Action Plan* (2012); *Community Food Security Coalition Recommendations for Food Systems Policy in Seattle* (2011); *Toward a Sustainable Seattle: The Comprehensive Plan* (2014 updates).

Prominent reports from the other 13 cities include Chicago's *Chicago: Eat Local, Live Healthy* (2007), *GreenNet Chicago: Guide to Resources for Chicago's Community Gardeners* (2011), *Healthy Chicago* (2011), and *Sustainable Chicago 2015* (2012). Denver's *Greenprint Denver* (2006-2011) with the 2011 update stating the achievements; Philadelphia's *Greenworks* (2009), and *Greenworks Progress Report* (2010); Minneapolis' detailed website, *Homegrown Minneapolis* including their sustainability report, tracking indicators for seven years; Washington DC's *Sustainable DC Plan* (2013) and web-based interactive map designed to identify fresh food outlets throughout the city; Austin's AustinGrows program with its community garden information and permit application packet (2012) and *Sustainable Food Policy Board Annual Report* (2012); Oakland's *Food System Assessment* (2006) and *Urban Agriculture Zoning Update* (2011); Los Angeles' *Good Food for All Agenda* and [goodfoodla.org](http://goodfoodla.org); and Baltimore's *Food Policy/Urban Agriculture Update*.

This is not a complete list of cities' reports and publications; however, it shows the resources that cities are committing to planning and developing policies for community food systems. The documents provided a secondary literature review with up-to-date information about current food system programming, and provided context for developing this study's interview questions.

### **APA Policy Guide**

This study has noted the importance of the *APA Policy Guide on Community and Regional Food Planning* (American Planning Association, 2007) as ushering in an important phase of food system planning, and as an indication of planners' commitment

to food system planning along with other planning disciplines. This study's literature review noted Pothukuchi's 2009 study that documented the progress made in urban food system planning from about 2000 to 2009. Following in Pothukuchi's method, this study has reviewed the recommendations from the APA 2007 report and has found the following.

The 2007 APA report made the following suggestions for planners, with specific policies for planners to follow:

1. Support comprehensive food planning process at the community and regional levels;
2. Support strengthening the local and regional economy by promoting local and regional food systems;
3. Support food systems that improve the health of the region's residents;
4. Support food systems that are ecologically sustainable;
5. Support food systems that are equitable and just;
6. Support food systems that preserve and sustain diverse traditional food cultures of Native American and other ethnic minority communities;
5. Support the development of state and federal legislation to facilitate community and regional food planning discussed in general policies #1 through #6 (p. 2).

This study found that the range of professionals involved in food system planning are following these suggestions, but that a range of plans and policies are guiding the work. The cities studied in this research showed progress in creating the framework for comprehensive planning at the community and regional level, with the understanding that regional planning is necessary because of the complexity of food including the



production, processing, distribution, retail, consumption and waste issues that are involved in food planning. Although support for local food production is a popular goal, cities see food production at a range of scales within and surrounding cities.

Although the creation of planning documents which then translate into policy is seen as an APA goal, this study found that this process is much more complicated and nuanced than planners may be used to. The broad, interdisciplinary backgrounds of food system professionals are using a variety of plans, recommendations, proclamations, and policies to implement food system work. For example, the use of comprehensive plans has been seen as a vehicle for implementing a variety of planning policies, yet one of the most progressive cities, Portland, Oregon, is implementing food system work without mention of food in its current comprehensive plan, but look to their forward-thinking climate change policies and Portland Plan to provide food system work guidance. Seattle recently adopted their Food Action Plan as the framework their food system work.

Many of the policies suggested by the APA report are being undertaken by food system professionals in different disciplines, but working together in an interdisciplinary fashion. As noted in this study's findings, food system work is housed in different departments in each city, depending on the background of program initiators, and on the specific goals of each city. However, planners are essential for creating and updating plans and policies related to urban agriculture; plan for urban farmers markets and farm stand zoning; transportation planning to improve access to food for vulnerable populations; urban design that allows for walkability and multi-modal transportation; incorporating possibilities for increased urban agriculture in urban design, protecting

urban, peri-urban, rural, and regional agricultural land; and support systems that decrease energy use and waste. As noted in this study, planners can work together with other departments, acknowledging that while planning and process may differ, the complexity of food system work necessitates new approaches and tactics by all stakeholders involved.

**Urban Agriculture.** The landscape study of cities' food systems found a very strong trend for cities to encourage a range of urban agriculture activities and to update urban agriculture zoning policies. Many of the cities' stated goals are included in Portland's *Diggable City Report*: promoting self reliance, fostering economic resiliency, connecting residents to their food supply and bridging the urban/rural gap, increasing awareness of the importance of local and regional agriculture to economies, increased cultural exchange, promoting health and nutrition, and incorporating the 3 E's of sustainability: environmental health, economic activity, and social equity. Goals in San Francisco's urban agriculture policy include increasing urban production of fresh, locally-grown produce, revitalizing vacant land, and creating green jobs. Seattle also relates the production of food through urban agriculture to race and social justice and to emergency preparedness. Other cities cite increasing education around healthy eating and food production, increasing partnerships, increasing healthy food to schools and other institutional organizations, and achieving sustainable agriculture.

As noted in this research, cities are not currently tracking comprehensive data on food systems and production, yet many cities cite specific goals toward urban agriculture, consumption of local food, and equitable access to food, among other goals. For example,

Philadelphia's *Greenworks 2010* states the goal of bringing local food within 10 minutes of 75 percent of residents; Minneapolis states the goal of ensuring that all residents live within ¼ mile of a healthy food choice; and Washington D.C. aims to bring locally grown food within a quarter mile of 75 percent of residents by 2032, and to sourcing 25 percent of the District's food from within a 100-mile radius of the city. Included in some of these plans and reports are goals toward implementing data collection including food-related indicators and metrics.

The 16 cities showed an overwhelming trend toward UA, led by programming and policies to promote community gardens on both public and private land. They are removing barriers to urban agriculture and sales of agricultural products. Portland, San Francisco, and Seattle encourage urban agriculture, and have updated policies to allow citizens in all areas of the city to sell the produce that they grow from garden sites. The cities are actively encouraging economic development opportunities for urban gardeners. This is in contrast with historical barriers against selling produce on-site, which required produce to be sold through a commercial vendor or farmers' market.

**Farmers' Markets.** According to Local Harvest ([www.localharvest.org](http://www.localharvest.org)) there are almost two million farms in the U.S., 80% of which are small farms, and many family owned. Increasingly, farmers are selling products direct to the public through farmers markets, food coops, CSA programs, and other direct marketing channels.

Although farmers' markets are designed to market products directly from producer to consumer there are a range of market types, depending on the regulations of each city or market. Some require that vendors produce all items they sell, and some

permit vendors to act as middlemen, purchasing from producers and reselling. Although farmers' markets sell all or most organic food, organic production methods are not guaranteed. Information and signage at farmers markets range from highly informational to nonexistent. Therefore, farmers' markets range greatly, and consumers cannot rely on locally-grown, producer to consumer products at all markets.

One food system indicator that is available is for number and location of U.S. farmers' markets, which is compiled by the USDA. Table 5 illustrates the number of farmers' markets in the 16 cities with possible metrics (number of people per farmers' market; number of square miles per farmers' market) that could be used to measure access to markets.

Table 5

*U.S. Farmers' Markets with Metrics*

No.	City	Sq Miles	Population	#FMs	#People per FM	#Sq Miles per FM
1	Portland	134	603,106	22	27,414	6
2	San Francisco	47	825,863	28	29,495	2
3	Seattle	84	634,535	19	33,397	4
4	Chicago	227	2,714,856	81	33,517	3
5	Boston	48	636,479	11	57,862	4
6	New York	303	8,336,697	67	124,428	5
7	Denver	153	634,265	14	45,305	11
8	Philadelphia	135	1,547,607	45	34,391	3
9	Minneapolis	55	392,880	29	13,548	2
10	Wash, DC	61	632,323	32	19,760	2
11	Austin	252	842,592	13	64,815	19
12	Albuquerque	181	555,417	9	61,713	20
13	Oakland	56	400,740	14	28,624	4
14	Los Angeles	469	3,857,799	32	120,556	15
15	Baltimore	81	621,342	21	29,588	4
16	San Diego	324	1,338,348	23	58,189	14

Sq mi: 2000 census; Pop. Estimate: 2012 Census; #FMs: 2013 USDA

**Community Supported Agriculture (CSA).** Community Supported Agriculture (CSA), like farmers' markets, vary in their organization and goals. Local Harvest lists over 4,000 CSAs in its database, but state that there are likely many more in the U.S. The USDA does not track the number of CSAs as it does farmers' markets.

CSA began as a way for consumers to invest early with farms, giving farmers the capital and a sense of their market at the beginning of each season. Consumers buy shares of produce, paying upfront, and in return receive a box, bag, or basket of produce, usually weekly, throughout the production season. Local Harvest lists the benefits for farmers as being able to do their marketing work before their growing season begins, help with cash flow, and familiarity with their customers. Consumers benefit with receiving very fresh food, exposure to new types of produce and recipes, familiarity with farms and building relationships with farmers, and introducing children to farming and new types of food. In a traditional CSA, consumers share the risk of farming—in good years their weekly shares are bountiful; but in years with less than optimal farming conditions their shares can be slim. This results in a “we’re in this together” relationship.

There are now many types of CSAs, including those where consumers pay weekly, and CSAs with a variety of products from a variety of producers (e.g., produce, baked goods, eggs, flowers, etc. from different vendors, but delivered in one package).

**Co-ops.** The number of food buying clubs or co-ops in the cities varies greatly. Data was not readily available, but a scan of cities websites found seven in Portland, two in San Francisco, and seven in Seattle. Minneapolis lists five natural food grocery co-ops, and Albuquerque lists one. The interview phase of this research resulted in information

that some cities are removing the barriers to organizing and accessing buying clubs in residential areas.

**Local Food.** Increasing the amount of local food is a strongly stated goal of cities' food and sustainability programming; however little data on the amount of local food is available. Cities with stated goals to increase local food also state the need to track indicators and metrics in order to evaluate progress in food system work.

**Community Kitchens & Food Business Incubators.** Little information was found on community kitchens and food business incubators on city websites. A general website search found mention of eight in Portland, three in San Francisco, and one in Seattle.

There is mention by the University of Minnesota about the importance of food production facilities to preserve and convert food into "value added" products, both for food security (preservation) and for economic purposes (converting food into value added products). The Los Angeles Senior Advisor on food policy stated that community kitchens may be a goal of a community food hub.

Minneapolis is the only city that exhibited both policy and programming for community kitchens. They list 46 community kitchens, most in recreation centers, and most are free for government or non-governmental organizations, and \$35 per hour for personal use.

### **Reporting Findings: Semi-structured Interviews**

Following are the findings from the semi-structured and unstructured interviews with food system professionals in Portland, San Francisco, and Seattle. The findings were

supported through ongoing review of the primary and secondary source documents. The Appendices X: Coding Legend and Descriptors, X: Interview Coding Matrix, and X: Findings/Analysis/Conclusions table (adapted from Bloomberg & Volpe, 2012) provide the structure used to organize, categorize, and report the data.

The section begins with an overview of the research findings, followed by details including interview quotes supporting the findings. They are listed by informant position, then city: 1) Food System Director/Advisor (Portland, San Francisco, Seattle); 2) City Planner (Portland, San Francisco, Seattle); and 3) Farmers' Market contact (Portland, San Francisco, Seattle). The last name of each informant is in parentheses at the end of each quote. All informants are listed in Appendix B: Interview Informants.

Reporting the findings is not merely reporting what individuals said, but with what frequency. The findings are listed generally from most-mentioned to least-mentioned. Although this is not a quantitative research study, in some cases the number of times each category was mentioned is listed to support some factor of the finding. In this case, the frequencies were used to indicate overall prominence of each category, but percentages were not used. Prominence is loosely related to frequency, and of how strongly the responses answer the research questions, or how strongly they suggest further research.

The findings are reported in response to the research questions. The research questions addressed in the interviews were:

Research Question 2: Who are the stakeholders and what are the approaches used by three of the most sustainable U.S. cities?

Research Question 3: What policy, planning, and community resources are three of the most sustainable U.S. cities using to increase the quality and effectiveness of their food systems?

Research Question 4: How do policy, planning, and community resources affect food system resiliency?

### **Overview of Key Findings**

**Approaches Used by Stakeholders.** The approaches being used to build and improve urban food systems are generally consistent between cities. Respondents mentioned urban agriculture which is the general term for market gardens, community gardens, home gardens, institutional gardens (school and hospital), and innovative urban food production like roof gardens, vertical gardens, and urban hydroponics. Urban agriculture also includes raising small animals for food. Other approaches that were mentioned include food hubs, community food systems, and co-ops. The codes for Approaches to Production, or Scale of Production were combined, and captured a wide range of how food is grown, produced, and processed. Rural and peri-urban agriculture as well as various methods used with cities were captured within these categories. Urban agriculture policy updates by city planning departments were described as extremely important to each city's food system development, as each city recently passed very progressive urban agriculture zoning policies.

**Community, City, and Federal Resources.** New, significant food system work is being done within municipal governments and their communities, with the aid of federal resources. Although the structures, goals, programing, and policies vary between



cities, food system planning and policy is high on cities' agendas. The findings are listed here by the frequency they were mentioned, and discussed in detail later in this chapter.

There is a lack of data on indicators and metrics to measure progress, but this is not stopping the work; in some cases food systems professionals say they intuitively know what needs to be done and are moving forward with goals without stated policies. City, county, regional, and state programming is pushing food system work forward, and food systems directors/advisors are located in various departments in city organizations, and where they sit influences the work being done. Funding from various sources is essential to food system research and programming. City and regional research reports, plans, recommendations, and policies create frameworks and guidance for city food system work.

Education and Events, while mostly functions of private or non-profit groups, are cited as essential for advancing food system work, and for helping to increase food security for vulnerable populations. Food system work is an interdisciplinary endeavor, with city, county, and non-profit organizations working together, and multiple city departments contribute to the work. Federal funding for SNAP is central to providing food for vulnerable populations and at the city and state level programming to increase SNAP usage includes matching funds programs. Grant support from the federal Farmers' Market Promotion Program (FMPP) funds are also used by some cities.

Mayor and executive support is critical in putting and keeping food system work on cities' agendas. Food policy councils are an important tool to set food system planning agendas, and while relatively new, at least one has already run its course and disbanded.

**Resiliency.** When informants were asked what steps cities are taking to increase resiliency in food systems, they stated that resiliency is important, and is emerging as a concept to understand better and work toward, but not yet in a comprehensive way.

Resiliency was characterized as a buzzword, and a catchphrase, and mentioned as a new way of looking at sustainability. Resiliency was mentioned as a key concept in disaster planning and climate change work, but that they are starting to see resiliency as something bigger than just disaster recovery.

A concept related to food system resiliency is around economic resiliency for those at different levels: system, community, and individual. Central are the production side like farmers and food system businesses (e.g., restaurants, food distributors, food trucks, and food manufacturers) and for individual food self-sufficiency.

**Urban Poverty and Food Insecurity.** During the coding process, the concept of food insecurity was coded in five categories: Resiliency-Vulnerability-Food; Vulnerable Populations; Food Security; Food Access; and Urban Poverty. Combined, these concepts were coded 57 times, tying them with the other most-coded concept of City Resources-Planning Indicators and Metrics. Comments from all food systems professionals indicated that urban poverty is biggest challenge in food system work—the inability for vulnerable populations to access enough food.

### **Details of Key Findings**

The following section includes a discussion of the findings with details that support and explain each finding.

**Approaches Used by Stakeholders.** In this section the key findings that were listed in Overview of Key Findings: Approaches Used by Stakeholders are discussed. Quotations from informant interviews provide rich descriptions to support the findings.

*Urban Agriculture.* The importance of urban agriculture cannot be overstated. There was one comment that urban agriculture cannot supply the city, but is important for community resiliency:

...we can't produce enough here obviously. I think that urban agriculture is a really great activity, and there is definitely a lot of movement around that, and it's great for a lot of reasons. I don't think the supply is ever going to be a lot, I mean it is for the people involved, but for the City is not an answer for production or for supply, but it is important for resiliency of communities" (Jones).

Overall, urban agriculture was stated as a very important contribution to cities' food supplies, which has been codified recently by all three cities (Portland 2012, San Francisco 2011, and Seattle 2010). These recent updates to urban agriculture zoning policies now allow urban agriculture in all zoning areas, and gardeners and farmers are allowed to sell their produce with few restrictions. All three cities allow market gardens and sale of produce, community gardens, and food membership distribution sites in all zones. They also allow sales of manufactured foods in all zones with varying health department requirements. Animal husbandry for personal use is also allowed in residential zones with some restrictions on size, numbers, lot sizes, and animal structure setbacks.

I feel like, what the city can do in this case is getting out the way. So for instance, we had some pretty significant barriers to being able to have a market garden where you sell your produce on a vacant lot in a residential zone. You couldn't do it. You weren't supposed to do it (Gisler).

Portland is seeing increased interest by city planners to include urban agriculture in current planning projects. Portland's Food System Planning and Policy Director commented about the increase in planners' interest in urban agriculture:

"This week on three different occasions I was brought proposals by other planners and the great thing is that they're all really thinking about this kind of work. And that's this week. I mean I can point to at least a half a dozen other instances of things that planners are working on that they thought, "Wow, there would be a really interesting food component here," or, "How do we get that involved?" (Cohen).

In 2013 San Francisco created an Urban Agriculture Program under the Recreation and Park Department. Also in 2013, the state of California passed the Urban Agriculture Incentive Zones Act that encourages urban agriculture by reducing taxes on privately-owned land to that of irrigated cropland.

When you talked to Paula, did you talk about the new urban ag policies, around tax codes? San Francisco just passed, supervisor Phil Ting, endorsed and just spoke at the supervisors meeting, that allows property owners, to have... it is the city version of the Williamson act, which is the federal act, if you have property that is fallow, and goes into food production, your tax liability on that property

decreased. It's an incentive for landowners who in the past have been hesitant to allow community gardening on the property... (Farren).

In a shift from historical prohibitions on selling food manufactured in non-commercial kitchens, California implanted the California Homemade Food Act, or the Cottage Food Act in 2012. The bill allows the manufacture and sale of food produced in private homes. Registration with local county health departments is required, and San Francisco is implementing the program:

And of course, California also has the Cottage Food Act, and San Francisco does have implementing legislation... It allows people to prepare food in their homes for sale, food that doesn't require refrigeration, that kind of thing (Sokolove).

Seattle has had a thriving urban agriculture program for 40 years. The city-run P-Patch program includes policies and procedures to encourage gardeners to create or join community gardens on city-owned or private property.

There was very little mention of school gardens during the interviews, although city websites mention school gardens and farm to school programs. While discussing their new urban agriculture zoning policies, the Portland planner said that school gardens are part the success of urban agriculture on larger, institutional properties:

We found that where we really had the best market gardens and community gardens were our larger institutional properties, like the churches and the hospitals, the schools. So we really focused our code language to really get out of the way, remove the barriers for any kind of limits on that... Especially in east Portland where there's less development, there'd be a lot of churches and

religious facilities that were on really big sites. That's just such a perfect place for them to – they would have urban farmers who were trying to get in to see what it was like to try to make money from the farms.

So they would just give land and then they would have farmers markets that would be right there at church time, so there'd be a ready group of people that came. A lot of times, they had parking so you didn't have to worry about parking. Anyway, that was the one thing I just thought we did that really worked well in terms of just getting out of the way on that institutional land (Gisler).

***Farmers' Markets.*** Farmers' markets were mentioned as a popular approach to CFS, and the concept of farmers' markets as an approach to solve urban poverty and food insecurity was mixed. According to the Portland food system director, farmers' markets sell food at the true cost (as opposed to low-priced subsidized, conventional food). SNAP matching funds incentive programs were mentioned, which will be discussed with Federal Resources:

And I think the food system is totally entwined with that (*poverty*). And yes, can we do things to ameliorate the situation and whether it's SNAP benefits and farmer's markets... Farmer's markets to me are not necessarily the best place to approach that. And I have a little bit of a different viewpoint from anybody else on that because farmer's markets are generally where you find farmers who are selling food at what the true cost of food is (Cohen).

Conversely, the executive director of the proposed James Beard Public Market in Portland stated that a major goal of the Market is to provide food for vulnerable

populations. He stated that recruiting immigrant and ethnic food businesses, increasing that customer base, and using SNAP incentives are part of the strategy:

Well it will, and it's really very high on our mission list of things that we want the market to accomplish. We don't want it to default to a yuppie food hall. ...is to be able to work with a variety of both immigrant and ethnic food businesses in recruiting them to be a part of the market but also helping them incubate and grow their business skills, because the volume of activity at a public market is so much greater than a neighborhood tienda or a farmer's market booth. And so we really want to focus on how do we bring in those merchants that give us a better chance of recruiting shoppers from their communities. And then on the actual how-do-we-make-it-more-accessible front, we're working with a variety of healthcare agencies to start with for ways of implementing a SNAP-Plus program that would allow for seamless bonuses or discounts, a bonus in the value or discounts in the price, for shoppers who are buying raw ingredients (Paul).

The informant for Seattle directs the Washington State Farmers' Market Association, so that information was not just for the city of Seattle. However, she did state that they are using federal funding to improve food access through a multi-agency partnership:

The one (*grant*) we have right now is around building capacity at farmers' markets around food access issues. So we re-formalized the farmers markets access partnership that's composed of state agencies, local agencies, nonprofits, and farmers markets that all come together around helping to increase

opportunities for low-income people to shop at farmers' markets. So the idea was that everybody wants to be supporting farmers' markets and increasing SNAP access and everything else. But all other agencies have farmers' markets as just this small part of their priority and so we created this space to focus on farmers' markets. Because my organization is focused on farmers' markets we've convened this and facilitate it and keep the network going (Kinney).

Questions about farmers market organization/management/ownership was not explored during this study, but information about that was gleaned from the San Francisco and Portland interviews. The executive director of the proposed James Beard Public Market in Portland said that the Market is entering into a development agreement with a local building developer, and will have a "condominium arrangement where the market portion of the property would be owned by the market." He described the model for ownership as:

And then we are pursuing a number of novel strategies for fundraising, which include a community ownership model. If you think of sort of a cross – I don't know if you've ever heard of the Green Bay Packers and how they're organized, but they're a community-owned football team... And it's sort of a mock ownership model because owning it is bragging rights, not voting rights, but the response was so overwhelming that now people in all 50 states own shares of the Green Bay Packers. And again, you know it doesn't give them much more than a sheepskin on the wall that says you're an owner of the Green Bay Packers. And so unlike fundraising models for museums, universities, or hospitals, the public



market is really in a unique position to create an ownership model that now you could equate somewhere between the kick starter process that's getting going and REI, a co-op model, where you have dividends that you can use if you shop at the market (Paul).

The development director of the San Francisco Ferry Plaza Farmers Market and the non-profit educational entity, CUESA, explained the rules for farmers in California farmers' markets:

Unlike other places in the U.S., like Greenmarket in NY, where farmers' markets can pull products from surrounding states, California direct marketing laws stipulate that all farmers in California farmers' markets sell only produce grown in California. A handful of farms in our market that have leased additional property in Mexico to increase growing regions. But in a California farmers' market, only produce grown in California can be sold in farmers' markets. So it is not a limiting factor for us, but it's an important distinction. Within the Ferry Plaza Farmers' Market the average distance from farm to market is 106 miles. And if you take out those really strong outliers like Thermal and Siskiyou County (*in the south and north*) it's closer to mid 90s in mileage. When you look at a map it's really from the Bay Area out (Farren).

**Food Hubs.** Food hub, food aggregation center, food innovation district, and food business commissary ("food hubs") were mentioned in various contexts. Although not new in the historical context of municipally owned and managed food markets and distribution centers, food hubs are emerging as an economic development strategy for

cities. As stated previously in this study, municipalities commonly owned and managed food wholesale and farmers' markets until early in the 20<sup>th</sup> century, and only recently has the private sector been responsible for food planning and provisioning. The fact that cities are once again incorporating food systems in their planning and policy suggests a shift from private to public food-based economic activity.

San Francisco is working to cluster food infrastructure on the site of the City-owned wholesale produce market. This is an interdisciplinary project aimed at increasing food resiliency as part of disaster planning, and as an economic development strategy:

Some of my friends in planning who care about food met some of these people...

We are redoing our wholesale produce market in San Francisco, which is on City property, and it's going to be expanded, and as that is expanded, how can we think about clustering other food needs, and food businesses, and food infrastructure? That is a project that is being funded right now... It is basic infrastructure we have in the city, we are very lucky to have a wholesale produce market, and the manager has been talking about, that we need to do a food enterprise zone, or how do we cluster infrastructure for food so that there's synergy... it's really more like food entrepreneurs, the places where the jobs are coming out of the food sector, the service sector, but really more the local food businesses, food manufacturing... For the street food carts we don't have a commissary, so is that a good investment for the City to have a commissary for the food trucks? So the food trucks have to have some place where they store their

food at night, clean their places, and they all have to go to a different county to do that now (Jones).

Seattle is using a food aggregation center to provide fresh, locally-grown food to city-funded child and senior programs. The programs order produce at wholesale prices through an on-line system, and the produce is received and repacked and delivered to the programs:

And the goal was to connect senior meal and childcare programs with local farms to increase their access to and the affordability of local produce. And one of the things that came out of that original grant is an online store where sites can go in... community organizations can go in and order produce from multiple farms, delivered by the individual farmers to an aggregation hub where it's then repacked and then distributed to the purchaser – or the buyer in one delivery with one invoice.

So that was one of the barriers identified during the project. One of the big ones was all the deliveries and trying to be able to order what you needed from one farm. And the paperwork coming in; particularly the nonprofit meal program providers don't have a lot of staff capacity for billing and support so we had to go through the ones that are doing all this (Langlais).

In Portland, a 14-year effort to build the James Beard Public Market is gaining funding and progressing with plans to build a public market with strong education and outreach program goals. The Market's executive director discussed incorporating aspects of a food hub, facilitating connections between mid-size distributors with local growers

as part of the Market plan. This model provides benefits and savings compared with a freestanding food hub:

...they're small and midsized distributors of produce and fresh food who are operating at under-capacity. And to really hook those distributors up with the increased number of local growers can make more sense than funding a nonprofit to do the same thing, which research shows requires subsidies for an ongoing basis. And so I think it's a question that each community will need to wrestle with if they move in the direction of food hubs. I mean why reinvest in warehouse aggregation space, a fleet of vehicles if you have a lot of other warehouse space and fleets of vehicles operating below capacity.

All of us, like the public market, Ecotrust, and others, are very willing to be active partners but not to create this as a high priority which would distract us from the existing programs and fundraising efforts that we're all involved in (Paul).

There was very little mention of school gardens during the interviews, although city websites mention school gardens and farm to school programs. While discussing their new urban agriculture zoning policies, the Portland planner said that school gardens are part the success of urban agriculture on larger, institutional properties:

We found that where we really had the best market gardens and community gardens were our larger institutional properties, like the churches and the hospitals, the schools. So we really focused our code language to really get out of the way, remove the barriers for any kind of limits on that... Especially in east

Portland where there's less development, there'd be a lot of churches and religious facilities that were on really big sites. That's just such a perfect place for them to – they would have urban farmers who were trying to get in to see what it was like to try to make money from the farms.

So they would just give land and then they would have farmers markets that would be right there at church time, so there'd be a ready group of people that came. A lot of times, they had parking so you didn't have to worry about parking. Anyway, that was the one thing I just thought we did that really worked well in terms of just getting out of the way on that institutional land (Gisler).

***Community Food Systems and Scale of Production.*** Urban community food systems are the overall concept explored in this study, and urban agriculture and farmers' markets are the main approaches that informants mentioned. The Scale of Production code was created for the remaining approaches, plus additional approaches or scales of production that were generated. This category received more mention than urban agriculture and farmers' markets combined. The categories include food localness, rural and peri-urban farming, urban food sheds, agricultural land, organic methods, produce wholesale markets, CSAs, co-ops, food buying clubs, roof-top gardening, urban farm stands, community kitchens, food business incubation projects, and culinary and nutritional literacy.

An entirely, or even mostly, local food system is not the goal of any of the cities. As discussed previously in this study, the notion that local is good and non-local is bad is contested as a “local–global binary that merits closer scrutiny” (Hinrichs, 2003, p. 33)

and current food system professionals do not propose it for their cities. However, local food production is promoted as vital to a healthy community food system and a healthy local food economy. The Portland Food System Director summed this up:

For us that is no longer a goal. I was not sure if we were going to get into this but that is something that when I started doing this professionally 10 years ago, we had elected officials and for them the word local, and doing the locavore thing and all that kind of stuff, that was the key indicator of sustainability to the exclusion of everything else. What we have learned, or I have learned at least, is that we still want to support that local economy, and that's important, but in terms of our overall objectives it doesn't have the preeminence, and we don't even use the term, because people think all I have to do is eat locally and we have the problem solved, and that's not the case.

Two things that I think are a problem with that (*localism*), one is funders, because funders are still there, and two, I get contacted by the U.S. Conference of Mayors, the National League of Cities, or UN groups, because of the work we do. I get these calls and they realize and understand that there is this huge movement around food, and they get really excited about it, and they are still taking in that popular perception that you just mentioned, or they go back to some of the things that happened in the earlier part of the movement and that's what they relate to...

They've kind of heard of the many interventions that we have talked about over the years, and they think, this is what we really need to be doing, without

looking any deeper in terms of what the local landscape looks like and is it something that is going to be efficacious for us. It's pretty funny, even though it is a new movement, but over the last ten years, there are a lot of things that people think are givens (Cohen).

The Portland urban planner described their peri-urban and rural farmland as essential to producing food for the city. She made a strong case for Portland's Urban Growth Boundary as a positive factor in urban food resilience:

The major thing that we do to preserve food as far as resiliency would be the fact that we have prime agriculture land and we're not letting development move out there. Now the flip side of that is, inside the urban growth boundary, we have to have room for development. We have to have room for housing and to support our population growth. That was something that some folks said, we need market gardens everywhere and we need to reserve land for market gardens. We just basically couldn't do that.

There are a lot of really good policies for affordable food, but when it came down to, do we want to house people so we don't expand the urban growth boundary or do we want a market garden, we would always land on the market garden as a temporary use, but if there is a time when we need that land for urban growth, then that would trump. We can do that in Portland because we've kept the urban growth boundary, so we have a readily available food source right in our valley.

One of the most fascinating things I did was took a tour of the agriculture in Willamette Valley, which is say 30 miles south of here... from an economic standpoint you need a certain amount of land to actually make it work. A lot of these new farmers... there's such a big market for organic produce that they're really – there's some farms that have completely (*gone organic*) – of course, it takes a couple years to actually get all the pesticides out of the ground and all.

But there are a lot of people doing that. I think the key thing that I learned was that it takes a certain amount of land to make it pencil out. So in Portland where we hardly have any vacant land, it was kind of a pipe dream to think that we would have (*agricultural*) land that we would be able to have such a big scale that we'd be able to make it pencil out (Gisler).

The process of bringing rural and peri-urban farmers' products to market can pose a challenge to those farmers, and agricultural land and farmers and producers are essential to a healthy local food economy. The Director of the Portland James Beard Public Market project explains and proposes the Market as a solution:

So we're excited about appealing to a group that the USDA just identified in a report that the number of farms continues to decline by about 4.3 percent nationally. The most endangered species among regional agriculture throughout the country is the midsized farmer, what we call "ag-in-the-middle," and they're pinched because they're not necessarily diversified in their production. So either they are looking at corn, cotton, and soybeans and the agribusiness commodities, or they're trying to struggle with a differentiated production model and trying to



sell to the farmer's markets, the small grocery chains that feature local products. And so they're pinched, and the public market is very much designed to provide a better pipeline for those midsized producers, and not only in terms of fruits and vegetables and greens, but for meat, cheese, fish where you have co-ops of fishermen on the coast, for instance, who would like to be able to sell their salmon at a higher price than just to the canneries and the rapacious brokers who add their margins to – especially the brokers who add margins that are healthy. And seafood becomes quite expensive, but it's also because those fishermen don't have any alternative in terms of getting their fresh fish to market.

And so multiply that times other meats, cheeses and we're creating an opportunity for more direct sales. And for those who are operating at that "ag-in-the-middle" category, it doesn't mean that 100 percent of what they would produce on a 200-, 300- acre family owned farm would end up in the public market. But we want to create an opportunity for as much of that as possible to have a more direct retail exposure than it would if it's sent either to the canning houses or to a Kroger's or even Whole Foods. So that's what our goal is. And it preserves the economic underpinnings of the urban growth. It allows for just healthier margins for the most challenged of ag sectors right now (Paul).

On the urban scale, in all residential areas in all three cities, residents can perform urban agriculture, and with some restrictions can perform animal husbandry, and sell both produce or manufactured foods. These shifts in city policies represent a major shift from even ten years ago, where most of these activities were either prohibited or very limited.

The following conversation about San Francisco's new zoning policies related to agriculture and food illustrates this change:

*CT:* ...so we're talking about prepared food? So like canned and prepared and...

*DS:* Yes.

*CT:* That's interesting.

*DS:* Yes, just any nonperishable food.

*CT:* In San Francisco, can people sell their farm produce?

*DS:* Yes.

*CT:* Are there any permits or inspections required or anything required for that or...

*DS:* You just have to have the urban ag zoning on your property, so you have to just get a change of use permit.

*CT:* Okay. And you can put out a little farm stand?

*DS:* Yes (Sololove).

Although community kitchens were included in the original list of approaches, references to community kitchens were generally not about the specific kitchens, but about the concept and goal of community kitchens in building culinary and nutritional literacy, and as a shared resource for community members.

The Portland planner mentioned the high level of resource use for home food storage and preparation, and suggested the benefit as well as a challenge of establishing community kitchens:

Well, actually, transportation came down pretty low. The actual processing, then there's the whole retail side of things, the advertising, all that stuff. But one of the highest ones, if not the highest ones, was actually the individual cooking, having to refrigerate your foods, the way we cook individually. All of that really pointed to really supporting – I mean if you're into reducing, certainly, the impact on the environment, that supporting community kitchens would be a really good way to do it.

But again, it goes back to, we're Americans. We all need our own kitchen. We all need our own refrigerator. You're really taking on a lot. That's a behavioral thing. I'm a big, big fan of community kitchens. I just think they are so important (Gisler).

Gisler confirmed prior research into community kitchens in this study:

I don't think that we're on the cutting edge for anything with community kitchens, but I think that there are some. If you Google community kitchens in Portland, I think there are some non-profits that are trying to get churches to set –again, institutions have those facilities already and they might not be using them or they might just use them on the weekends where you could, during the week, have space set up to do entrepreneurial (Gisler).

The concept of kitchens came up frequently when discussing community education including culinary and nutritional literacy, which are covered in the findings of Community Resources—Education and Events in this study.

**Summary.** This section described findings from the semi-structured and unstructured interviews related to food system approaches used by cities. The findings are consistent with the original research design that included a nearly identical list of approaches to investigate.

The concepts of stakeholders and approaches have been central to this research, but the roles of stakeholders are not being separated out from the approaches they are using. This may be a delimitation of the study but given the informants' rich descriptions it may be unnecessary to list out the titles and roles of people doing the work.

**Community, City, and Federal Resources.** In this section the key findings that were listed in Overview of Key Findings: Community, City, and Federal Resources are discussed. Quotations from informant interviews provide rich descriptions to support the findings.

**Indicators and Metrics.** This study included a search for indicators and metrics that cities use to establish baselines and evaluate progress toward stated food system goals. Primary and secondary documents were reviewed, and informal interviews and emails to USDA subject experts were used to find data on amount of urban agriculture, percent of local food consumed, number of farmers' markets and CSAs, and other food system indicators. Most interviews asked informants if their city was tracking these data. Responses were unanimous—cities are tracking some data, but there is little consistency between cities. Some data, like total amount of urban agriculture or percent of local food

do not exist. A 2012 Mayors Innovation Project report<sup>7</sup> assessing Portland’s food system sustainability and resilience stated:

Certain cities and organizations have proposed numerous indicators that could be used to assess the sustainability and/or resilience of a food system, but there is currently no commonly-accepted set of metrics that can be used to determine whether a municipality generally or a certain program in particular is achieving its food system goals. These proposed metrics tend to fall into two categories – those that are imperfect in some way but for which data is available, and those that are more ideal, but for which data is not currently available (Mayors Innovation Project Report, 2012, P. 1).

Once a policymaker has decided whether the food system’s goal is sustainability, resilience, or some combination of the two, it is then possible to consider what indicators would demonstrate whether those goals are being met. The important point is that it is difficult to have a sense of what the right indicators are without first having a sense of one’s goals (Mayors Innovation Project Report, 2012, P. 4).

It is important to note the comment above, “it is difficult to have a sense of what the right indicators are without first having a sense of one’s goals.” Extensive document review has revealed many plans and recommendations including food system goals, and/or a goal of tracking indicators and metrics. This is an issue that will be explored in

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<sup>7</sup> The 2012 Mayors Innovation Project report for Portland was received from Steven Cohen, February 2014.

depth in this study's analysis and conclusions. Interview comments about tracking indicators and metrics include the following:

Depends on how you want to define it. It doesn't exist. What the problem is unless you are looking at community gardens, which are usually planned by, ours is managed by the parks department and I can tell you how many acres and garden plots there are... That you can do, but beyond that, all of the individual gardening that people do in their backyards, or selling it under the radar, but now of course that is legal, we haven't, it's impossible, I think it's impossible to do, and we've talked about using GIS...

If someone tells you they have those numbers (*for total land in urban agriculture*) they are lying. Another thing you see is when people talk about the percentage of local food that people eat, and generally, I'm sorry, but those are usually made up numbers as well. Most of the time, the only data that is out there is at the county level. And part of it, as you allude to, it's sort of a nascent movement, and people haven't done a lot of that work, but the data that exists is from USDA level, or most of it is broken down to county level, but at a city level you don't see it. The mayor would say, "I now how many miles of streets we have. I know how much water we use." You know, what's the thing for food? And it was really, really difficult to give (*food-related data*) to anybody because you're talking about a very diverse system with many moving parts to say, "Here's the one number that says we've got a resilient system. We've got a system that works" (Cohen).

Yeah, it's a big issue. So within Seattle when it's programmatic, like the P-Patch Program, you can get measurements about how many gardeners we have, how much food is produced, how much food is given to food banks, poundage, that kind of stuff, so how many more community gardens we've added, how many more people have had – you know some degree of demographics about who's in the gardens. So when it's programmatic or with human services you might find there's a program with preschool kids and they'll be able to – you know they have metrics about who's being served, what they're being served, the change of what's being served and stuff like that. So when it's programmatic it's easier to get those metrics. When it's broad, cities are very challenged to do that work. They're challenged in a lot of different ways. Part of it is that the ideal would be in the census, if there were some things like do you garden?

So it's very difficult to do the metrics and to measure success and impacts, because cities don't tend to be repositories of data collection. So we actually funded some work to be done to give us some recommendations as to how we might be able to do a better job at least of getting more of that data into the system so we can understand the impacts or understand what's working well and what's not working well. Because I say to people all the time here, “How we going to know when we have a strong regional food system?” They have all these goals and these underlying stuff and there's ton going on, so are we there? Aren't we there? When do we know when we're close? When do we know what's still

needed? But I do think it's a need immediately actually. People are having to figure it out for grants so how do they say what the outcomes were? So yes you've hit on what is key. Around the country people talk about it with each other as we go to conferences and forums and roundtables and people are experimenting with that (Shulman).

Well, I don't think – I definitely know that the planning department does not track that information (*amount of urban agriculture*) and my guess is you could find some rough numbers about the urban ag questions through our new urban agriculture program office. We just hired a woman to be a one-stop shop for urban ag in San Francisco, and she may have access to rough numbers like that. Not necessarily local food eaten by San Francisco residents; I mean, that's definitely not tracked. But the acreage and production in San Francisco and the number of community gardens, she certainly would have that information. ...it would be just increasing access to local food. I mean, that would take a lot to try to track, especially for a big city like San Francisco. I don't even – I couldn't even imagine how – I mean, I probably could think about how to go about that, but I think it would be... (Sokolove).

Some informants expressed that at this stage of food system planning, tracking indicators and metrics require resources that cities don't have, and that there are so many obvious needs, they are forging ahead and doing the work on the projects that they know need to be done:



You know there are just so many different factors. So it is, I think it's hard. I think part kind of what's helping is that we know that the world of food is a mess. I mean I think that what really underlies this, is that people have analyzed enough to know that the system, the kind of large-scale industrial food system is unsustainable (Shulman).

...but my contention during all that was that even if I knew (*food-related data*) we know what the problems are. And even if I knew some of these numbers that are associated with some of these problems, it really wouldn't change my work strategically or we wouldn't be focusing on other things. Even if we knew what those numbers were, and those numbers to a great extent were either difficult to get or again were just proxies. So in some ways I totally get that and there was this need for wanting to have those... you know politicians love it too. I know what gets measured gets managed and all of that. But at the same time I'm not sure that they're all that useful. I mean look at all the reports that you've seen from municipalities or regional or state on food systems and my contention is we could take Seattle's and I could put Portland's name in there and while the numbers may be a little bit different than the communities and the number of neighborhood organizations may be a little bit different, it's still the same results. They're all promoting the same types of conventions and approaches – strategic approaches to the problems (Cohen).

Yeah, yeah, and here it's hard to get to the question of, should we have a goal if you can't track it or not? I mean, it seems like there are some really laudable goals out there that may not be very easily tracked, but it doesn't mean that they shouldn't be part of the program (Sokolove).

Metrics that are being tracked are associated with health and food security:

I definitely think that we have a long way to go with access and food security. I think that metrics we are already tracking, how many meals are being served and how many food pantries there are, and who is on food stamps, and that kind of thing. I think those are probably the most important metrics to keep track of. In addition to that, I would love to see metrics around distances to stores that serve healthy and affordable and culturally appropriate food (Sokolove).

I think that even if it's not in the comprehensive plan, there are a lot of studies.

You could still do matrixes about how much land and matrixes about who's eating what. There's still room to do that, but I think that that's probably going to be done more in the health side of things than it would be in the planning side of things (Gisler).

We have very specific information about the EBT (*SNAP Electronic Benefit Transfer System*) that was used at all the farmers markets in Seattle for 2013 and I think we've got it pretty accurate for 2012 and that's for a number of years because for two reasons, one, through our annual farmers market membership

application we ask that question. So yeah we also coordinated the (*SNAP*) Fresh Bucks Program for the City of Seattle. So we collect all the SNAP data. ...I think Washington is different from most states because as the State Farmers Market Association we collect sales data, so all the market managers report vendor's sales for the year and there are a few markets that don't collect it quite as vigorously and it's all self-reporting anyway, so there's an error element in there too. Most states don't know vendor sales (Kinney).

***City Resources and Organizational Structure.*** Cities begin food systems programming in varying ways and they sit in differing areas of city organizations. San Francisco's program began in 2002:

The Director of Environmental Health for the City had been hearing from so many community members around issues of food... and he looked at environmental health so broadly, the built environment is part of environment... So that was, sort of before his time in that way of thinking, for public health, and he came to my department at the old non-profit and wanted to work on food, so that's how I developed a connection with public health, and at that point really realized I wanted to work on systems, and I wanted to work on structure, and not just neighborhood-level projects because I was going to burn out way too quickly on that level of work. So I just pitched him, "why aren't we doing food policy council, why aren't we doing farm to school, why aren't we doing this?" He said, "let's do it." That was when I started my own nonprofit, got funding from the City

as well as state, federal, and private, and had an office here, or a cube at first, and then it built into an office (Jones).

After the San Francisco Food System initiative was established the director worked with Planning Department staff, and that department gradually created a food systems initiative:

So we issued this directive, we had a Food Policy Advisory Council, and through that planning my colleague in Planning, Diana Sokolove really wanted to work on food. She was able to start working more on this, and then she was able to get her feet wet in her job, working a little bit more on food... she was trained as a planner and she was reviewing our bond reconstruction water projects. She was doing environmental review, but really wanted to work on food. I got to know her in 2008, something like that. I saw opportunities and there was a big opportunity that came a couple of years ago when I got the call from the Mayor's office and they said we want to do this grant, vertical farming and jobs, and I said, "why don't we make it broader, and look at food systems and economic development?" So I called Diana said "let's write this grant" and when the opportunity came and we did get it.

So, Planning got it, and now when you go to the Planning website you're going to see the project that came out of that, which is a like a food sifter innovation scan of food innovations... looking at what is good for the City to invest in. So that was done and Diana's been the lead on that and been able to really expand her role in food, and now, they've got the second grant... she called

me again and said “we want to do something around food access; there is an opportunity for the grant” (Jones).

Portland’s food systems programming began in 2005, it moved from

Sustainability to Planning and Sustainability:

So a couple of years back... it must have been like 2010, there was a woman at the county who was my counterpart who was working on teaching in the Sustainability Office. I've worked with people in the Health Department and also in the Sustainability Department. And again when thinking about Portland, one of the things that you'll probably end up considering is that we're different from other communities in that there's a bifurcation between what I would do in the city side and what the county does, which is actually the provider of social services. In fact my position was even more of an anomaly – I mean it was the first one really in a way. It was the first food policy position that was established in an organization that was not a social service provider. And it wasn't even our planning department. It was in the Sustainability Department. I didn't realize how much of this work in municipalities would come under a planning function.

Indeed, when I started it was in the Office of Sustainable Development and in January 2009 the Mayor who came in at that time merged the Bureaus of Planning and Sustainability into the Bureau of Planning and Sustainability. Even though there had been rumblings a couple years before when the APA began to look at it (*urban planning for food*) at the first conference they did in San Antonio and there was a food track and there was an APA white paper, I think it was 2006,

and they began looking at these issues, so I knew that but I had never worked in a planning department until 2009, so then I began to realize more about the connections between the work that they do and food systems work, and now I am integrated within that department and I get it so I've come from both places (Cohen).

Although food system work has been done in Seattle for some years, a Food System Advisor was hired in 2012. Note that this interview was with the Senior Legislative Advisor to Councilmember Conlin, a strong advocate for promoting food system work because the Food Policy Advisor, Sharon Lerman was on leave at the time of the interview:

It would be nice if it was a department, but it's not. So the context is in the Local Food Action Initiative. So the initiative itself was developed as a over-arching framework resolution to guide city policy and programs and direction and to be able to also help us evaluate existing regulations and existing work and future work to see if it's in alignment with these goals and directions or whether we're saying we want one thing and then we actually are being contrary to that...

...soon after it passed, like minutes, our office was flooded with interests, possible programs that people wanted to see happen. We created an interdepartmental team in the city of multiple departments that work together and ultimately developed an action plan, looking at their coordinated work. We always had at the base of our work the question of how do we institutionalize and create the transformation and culture so that it doesn't become somebody's

agenda or depend on political leadership, but that it becomes just part of the day-to-day work of the city and that we would begin to really see food, food policy, and food programs, and all the different things that go with that our role in creating sustainable food system that is just part of what we see as the function of government.

So we decided after a few years to create that position and to house that in our office of Sustainability and Environment. I had talked to people who those kind of positions in some other cities saying that the lessons learned for them is that it was better not to house it in the Mayor's office, which was more common place in which these these positions are housed. They were finding that it was actually better if they were housed in Sustainability Office, because a number of cities by then were creating sustainability offices or something similar. We created the position in that Office of Sustainability and partially that's because that is the office that does more interdepartmental work (Shulman).

The Portland Food System Director has had success in forming a task force for a limited duration, for a specific project. After the disbandment of the Multnomah County Food Policy Council, a task force was convened to advise on the Urban Agriculture Zoning Policy Update:

...what we've learned certainly as a bureau is that advisory groups that are convened for a limited duration with a specific deliverable are ones that are the most effective for us. And the best example of that is the Technical Advisory Committee that was put together for the Food Zoning Code work. And that's

because to do that work, it was incumbent upon us to make sure that we had representation from the farming community people who are running CSAs, people who are running buying clubs as well, that there were very specific areas of expertise that had to be represented. So as the conversation became more sophisticated and we needed areas where in terms of expertise, then we will call together some of these committees and say, "Hey, can you go to five meetings over the next five months and at the end there will be this report (Cohen).

***Research, Plans, Recommendations, and Policies.*** City and regional research reports, plans, recommendations, and policies create frameworks and guidance for city food system work. This study found numerous food system documents. However, the plans and recommendations do not always become policy. In the absence of food system policy, reports and recommendations may still provide frameworks from which cities create policy and programming. Comprehensive and Sustainability plans, Climate Change plans, and initiatives and proclamations with strong executive backing are some of the methods driving food system work:

...when I came over here I was really, really excited about this idea that this work was going to be codified and it was going to be institutionalized. And I think that the document that you're referring to is the existing condition report for the Portland Plan. Now the Portland Plan of course was a document that was supposed to set the agenda for that comprehensive plan. There is a page and there are recommendations regarding health and specifically there is some food stuff in



there as they are still writing sort of the comprehensive plan. And that work is still going on.

I think it was sort of hard to take that language and sort of put that in the general planning or a comp plan document that traditionally – you know in the old days things were never – you never even considered food, so just the fact that it was considered is certainly movement. And when people come to these public meetings that talk about the comp plan, there are certainly a lot of people who are motivated because they're really interested in a lot of the food aspects of it, but how does that transfer to the eventual planning document? What are the things that we want to see? And in some ways I think it does speak to the fact about some of the issues that are paramount in food system planning and then how do you – what do those look like when they get on paper? How do you codify that kind of stuff?

And the other place that we're doing that and that I have more direct contact with is our climate action plan. And that's something we did in 2009, I think, and updated in 2012 and now we're doing this other update. That's one that I've worked on directly where we were the first city to have a climate plan.

So certainly in 2009 and especially when you think about the impact that food production and food consumption has on climate, it's astounding that no one ever really considered this. So it's in there, it's a very – and it has its own little section and we continue to work on that. So I guess my thing is more... what I use

is more of a climate plan because coming from the sustainability office, all the work that we did I think you could put under this big umbrella of climate.

I mean look at all the reports that you've seen from municipalities or regional or state that have been on food systems and my contention is we could take Seattle's and I could put Portland's name in there and while the numbers may be a little bit different than the communities and the number of neighborhood organizations may be a little bit different, there are still the same results (Cohen).

In response to the observation that food is not included in the Portland

Comprehensive plan:

I think it was sort of hard to take that language and put that in the general planning or a comp plan document that traditionally – you know in the old days things were never – you never even considered food, so just the fact that it was considered is certainly movement. But I agree with you and this woman who I said now is in another department said, "Where are those kind of things going to reside? Where are they going to be?" And they're still working on the comp plan. So a lot of times our climate report was getting compared to comprehensive reports, you know in terms of how it was graded and things like that (Cohen).

So if you look at – I'm not sure what chapter it is, but it's our urban development chapter and it talks about food source. It kind of does a little more than land use transportation. It talks about grocery stores, so there's the whole side of the access

of food and especially affordable food. So that's really more what the comp plan gets to (Gisler).

For San Francisco, Mayor Newsom's 2009 Proclamation—The Healthy and Sustainable Food Directive created a framework for food system work:

So I said we are going to do way more than procurement policy, we are going to do a system policy, and that's when the Mayor (*Newsom*) issued the Executive Directive on Healthy and Sustainable Food... and the directive really set a framework for food policy in the city, and it asked every city department to appoint one person who was going to be their liaison, reporting back to me about what their department could to advance this framework, these concepts, and particular departments were asked... I modeled it after the climate change work that had been done, like every department had to have a climate change contact, so I looked a lot of directives, and I liked that... engage every city department, and then particular departments were tasked with particular things by a particular point in time (Jones).

Probably one of the most important programs that we have, or policies or tools, is our Healthy and Sustainable Food Executive Directive. It was developed by Mayor Gavin Newsom. He was mayor at the time, and so that was really something that sparked a lot of further policy development in San Francisco around local food and access to local food, and so that is probably the most instrumental tool that we have right now. And out of that came the Food Security

Task Force, of which Paula is the chair and the staff for, and that is also definitely one of the most important vehicles for local food and access to local food in San Francisco. And then we were one of the first cities to implement ag zoning and to develop a land use category that's called urban agriculture, so I think it's definitely been instrumental in the city for spurring urban ag and legitimizing the land use as a category (Sololove).

Seattle's food system work framework is driven by a food system initiative: So I would say that was the framework (*the Local Food Action Initiative*). I'd say the initiative created a framework for policy making. I mean in a sense the framework was the policy, but it basically established a set of... in a sense the orientation was to create a healthy local and regional food system. So in a sense by creating that framework then people could kind see themselves in that, because they realized, "Yes, that's what I'm trying to do. I want a healthy regional food system and I agree with those kinds of values and so I want my work aligned with that." So that only aligned city work, but I aligned the community around a framework of pulling together and working more kind of in alignment with each other (Shulman).

**Funding.** This study included a question about federal funding for SNAP and FMPP grants. Throughout the interviews, there were many mentions of funding for various initiatives. This study did not uncover many specifics, but this category deserves further research. Some abbreviated quotations mentioning specific funding sources and/or initiatives included:

...we got this little grant to do that (*The report: "City Food Policy and Programs: Lessons Harvested from an Emerging Field"*) for USDN... The reason we went for that grant is that I still get calls from all these people who want to initiate either a council, or they want to create a municipal program, so this is a basic thing for people to think about.

And there was a group out of University of Wisconsin called COWS. Joel Rogers, a really progressive guy, and they had the contract with this Mayor's Innovation Project team. And we got a small grant because we were being asked questions by the administration that we sort of defined as resiliency, and really wanted to have an outside person help us and we were looking at metrics at the time which are difficult (*to find*) in the food system.

...she's worked on a number of CDC grants and has worked on a number of things that we've done for healthy communities and working with multi-family housing... (Cohen)

That's when we did this one project; it was an urban rural round table, we had the outside group, Roots of Change, facilitating that. They really started as a collaborative of funders.

The Mayor's office called me and said we want to apply for this grant with Vancouver for the Urban Sustainability Directors Network, and we want to do something around jobs and vertical farming (Jones).

Now the Office of Emergency Management... we decided to fund a significant effort to over the next two years to develop a recovery plan for the City of Seattle. There are not many cities doing this yet. There are a few and they're still kind of realizing that it does take funding and a significant effort, especially a city of any size.

They are also looking at seeing if they can get one of the Rockefeller grants for 100 resilient cities around the world and they've applied... If they get that money part of what they get is to hire a resilience officer...

So last year... we changed all these land use codes, what was the impact of that and how can we get at that more? So we actually funded some work to be done to give us some recommendations as to how we might be able to do a better job at least of getting more of that data into the system so we can understand the impacts or understand what's working well and what's not working well.

But with the Regional Food Policy Council there's a grant application out to actually look at the impact of what the Regional Food Policy Council has done over the last three years and find ways in which you do – it's the ripple-effect mapping is the methodology they want to use for that (Shulman).

...this is the Urban Food Zoning Code where we looked at market gardens, community gardens, food buying clubs and farmer's markets. So we also were funded – we had a health grant and we were funded. So we had a staff from public health's perspective too.

In terms of the nuts and bolts kind of community work that we talked about... the education, that's going to be done in more of the health side of things. It's going to be done if there's funding for it too, like anything. Right now, especially with all that stimulus money that we had and the health, there were a lot of health grants going around. I don't know if that's kind of – I think that might have dried up a little bit, so I'm not sure.

Anyway, we had a lot of capacity-building grants where we were just kind of, planner, meet the health people. They're doing stuff that dovetails on what you want to be doing with the health or with the food. So that was really helpful. So we do have those connections now (Gisler).

So we do have some legislation funding a program to do some corner store conversion, so that's another policy-driven program. And that's to help local corner stores that primarily sell tobacco and liquor to help them figure out how to sell healthy and fresh produce (Sokolove)

...one of the projects that I've been involved with is Farm to Table, which is connecting senior meal and childcare programs. So they're city-funded programs with local farms so they can purchase produce at a lower cost, easier to access. It (*The Farm to Table Program*) started under Communities Putting Prevention to Work, a CDC grant, in 2010. The website actually came from a different grant. But it was one of – there's just been a lot of leveraging – different activities have

been able to build off each other. (*Now*) there is a private grant. It's through the Northwest Agriculture Business Center... And that was one of the things that we were able to do with the Farm to Table money from CDC was to do some training. And then we have some additional money through the Community Transformation Grant to continue that. So that's one of the policy changes that came about as a result of the Farm to Table. We did some pilots with, one, connecting people to fresh local produce and, two, and giving people skills training in terms of how to use it and incorporate it into their meals (Langlais).

It (*the James Beard Public Market*) was in part catalyzed by a quarter-million-dollar grant from the state of Oregon for planning and the architectural work, the economic development analysis that we need to do. And so we were able to engage architects, consultants, and economists to start digging much deeper into the design...

...and now we'll begin working with our office of government relations within the city and our lobbyists in D.C. to put together the funding options that will bear fruit now, and this is a year's-long process.

I've approached the subject with the mayor's office of a restaurant tax. As you know Portland and Oregon doesn't have the sales tax, but a restaurant tax that one city in Oregon has, Ashland, where the Shakespeare festival is, and the restaurant tax proceeds would go toward underwriting that differential (Paul).



Along that spectrum we try to highlight what about those farms is a positive aspect and then also encourage them to further their sustainability. We have scholarship funds to attend seminars and classes, and we support them going through the certification process financially, so if it's a goal we want to be there to support them.

We conduct 6-7 farm tours annually... The bus picks you up at the Ferry Building, we prepare a vegetarian lunch from what is produced by the farms we are visiting, we visit two farms, the bus returns you. It's something that we get corporate sponsorship.

Another program is high school-focused, and is called School Yard to Market. We partner with three San Francisco public high schools, and we fund their school garden and their school garden coordinators, and it's part food literacy and part job development.

So the question is what city-wide initiatives there are around healthy eating? I think it's more of a state initiative. Google "My Kitchen, My Rules" for a state-funded campaign for healthy eating (Farren).

The one (*grant*) we have right now is around building capacity at farmers markets around food access issues. We re-formalized the farmers markets access partnership that's composed of state agencies, local agencies, nonprofits, and farmers markets that all come together around helping to increase opportunities

for low-income people to shop at farmers markets. It's a continuation of a Community Putting Prevention to Work grant. That was funded through the CDC.

Our organization has a Specialty Crop Block Grant also from the State Department of Agriculture. That one is focused more on working with specialty crops farmers and it helps to support our annual conference that we do and our farmer workshop tract and outreach and leverages funds so that we can actually go out and do some fund raising for scholarships (Kinney).

***Community Education and Events.*** Education and events were referred to in different contexts. Education was mentioned as important for making healthy food choices; connecting with farms and learning to cook with fresh produce; teaching institutional cooks to cook from scratch; retail farmers' market educational materials for customers; and educating farmers in marketing their products. Specific educational programming was described:

Food Wise Kids is a program with field trips and a cooking class, for free, for San Francisco Public Elementary students. They arrive at the market, are greeted by our market chef, there is a small lesson on sustainability, and about farms and seasonality and Farmers' Markets, they break into teams, are given market coins to go shopping, and have to make decisions as a group what to buy. They get money and have to spend that, make decisions together, and interact with the farmers while purchasing. They come back, chop and prepare, we have cutting boards and knives set up. We have been doing it for two years. It is only available

to public schools but we are looking at expanding it. It's wonderful; it's a fabulous program.

So they have their cooking class, and enjoy their meal together. And there are materials for their instructor both before and after to support their lessons. There are so many more resources now for teachers trying to incorporate seasonal, and fresh and healthy heating into their curriculum. That's an example of education where the market is the nexus for that education, but the lessons they are learning are much deeper and more transferable to where every they are going to be shopping and buying their food.

Another is high school-focused, and is called School Yard to Market. We partner with three San Francisco public high schools, and we fund their school garden and their school garden coordinators, and it's part food literacy and part job development. They are growing produce at their school, learning about biology and food systems and healthy eating and plant science, and then in turn selling it at the Farmers' Market, and they have to apply to sell here, and it is paid so when they show up on a Saturday morning for many it's their first paid job. They are learning communications, customer service, marketing skills... how to sell to the public. There is one booth, the School Yard to Market booth, and it rotates there is one school in that booth. Even marketing, how to make a visual display; and someone comes for tomatoes and you are out of tomatoes so how do you sell them something else? These are all skills you can use your entire life.

We have hands on cooking classes, they are monthly as opposed to weekly, and a lot are focused on kitchen skills building. Putting up, tomatoes, conserving, making stocks, you'd be amazed at how many people are intimidated by making their own chicken stock—it's the easiest thing in the world yet they've never done it before. There is another organization in San Francisco called 18 Reasons, and they offer quite a bit of classes, there are lots of resources once you are plugged in... There are more organizations that do that, partnering with target populations... (Farren).

Well that's a huge part of our agenda, and so it's also a significant part of our capital investment in building a commercial kitchen that will be able to host a variety of education activities. We're convinced, I'm convinced, with no statistical data to back me up that involving parents in teaching their children about their traditional and culturally-appropriate food ways would be moving backwards because most of them have been so assimilated into contemporary North American food culture, e.g., McDonald's one night, Burger King, Chipotle the next. But the grandparents are the last strand that exists to help children understand their cultural food traditions. And so the goal is for our teaching kitchen to have a close relationship with the various refugees and ethnic communities in the area and to be able to host those grandparents and grandchildren in shopping in the market for the kinds of ingredients that help

define their food culture and then to transform those in an educational setting using the market's kitchen (Paul).

Washington State University has a SNAP Ed contract with the State. They operate a Food Sense Program, which is a whole like nutrition, cooking, sort of lifestyle around food on limited incomes, education program. It's a series of courses. It's been extremely well received in different communities. They operate much more outside of the big cities. We've got two major SNAP Ed contracts in the state.

The State Department of Health has the other one (Kinney).

There were also descriptions of events that support the markets, with educational goals:

We'll also have you know celebrity chefs coming because of the Beard name.

We'll also have ongoing culinary training for chefs and other professionals but you know utilizing the same facility.

We're continuing with smaller events hosted by local restaurants where we have more targeted invitation lists. You know they're designed for fundraising of course but just for spreading the word and getting people more excited, more knowledgeable about the project. And so that includes recruiting a cadre of people who will host house parties sort of in the traditional political realm where I can do a presentation about the market just sitting down over wine and less formal (Paul).

CUESA has events, on Saturdays, chef driven, seasonal celebrations, stone fruit, eggs, interactive, educational things. Seasonal celebrations are once a month. Then a lot of paid events, that's what my job is, cocktail nights, our Gala Dinner, walk around tastings, and always imbuing those events with education, so it's not just walking around, tasting, restaurants that are up and coming, something about the farm where it came from, or an interactive game, both entertaining and informative, taking recipes home... and that is how CUESA events differ from other events. Every day that we are operating the market, and we rent it out on non-market days to groups that are doing culinary and cooking challenges. Instead of doing a ropes course, you do a cooking class (Farren).

***Interdisciplinarity.*** Food system work is an interdisciplinary endeavor, with city, county, and non-profit organizations working together, and multiple city departments contribute to the work. Although this study seeks to find planning resources for food systems, the study shows that planning takes place in a variety of municipal departments, and that cities and counties often work together to plan food systems.

I'm not a planner. I work in a planning department, but I also work with tons of other people, those of us who worked in the sustainability department, too, work in solid waste and recycling and energy and solar and in green building, and they don't have planning backgrounds either. And in fact, I think it's really been a great thing, for me at least, I mean now I'm sort of integrated in those planning processes, GIS work, and there is a great complementary work that is going on especially now as planning departments begin to see the connections with the

work they do to public health. I've worked with people in the Health Department and worked with people also in the Sustainability Department (Cohen).

That (*the San Francisco wholesale produce market*) is a project that is being funded right now and I'm on the steering committee for it, but the people who are really working on it is our planning department, Office of Economic and Workforce Development, and SPUR San Francisco Planning and Urban Research...

So, we initially have always just talked to different department heads and program managers, and how do you connect with food. It was all about trying to build the capacity of many groups, to work on food systems issues. So that was always the theory of change (Jones).

We created an interdepartmental team in the city of multiple departments that work on stuff together and ultimately developed an action plan, looking at their coordinated work. It started as a self-organizing group of people in a number of departments and including some county folks to talk about kind of food work collectively.

So we knew that the ideal would be to create positions over time that would focus that work, because it is interdepartmental, it's not like you can have – it requires work across the different procedure departments. We created the position (*of Food System Advisor*) in that Office of Sustainability and partially

that's because that the office that kind of does more interdepartmental work (Shulman).

And that's (*Seattle's Interdepartmental Team*) composed of representatives from different departments who touch food in some way; everything from recycling or compost, waste... gardening, to the Human Services emergency food and senior meal programs. And that's the IDT is an area where people can come together and share information, network and then develop— part of that was developing a food action plan (Langlais).

***Federal Resources.*** This study asked how federal funding for SNAP fits into city food systems, and it showed that in addition to the SNAP funding, cities are using the program to leverage additional food buying-power with matching funds programs. There were also several mentions of education and access initiatives that target SNAP users.

And then have you heard about the Fresh Bucks Program? That's the incentive, the SNAP incentive program. It's double your dollars at farmer's markets for SNAP buyers. Up to a limit of \$10.00 per day. There is no seasonal limit, it's just a daily per market visit (Langlais).

And then on the actual how-do-we-make-it-more-accessible front, we're working with a variety of healthcare agencies to start with for ways of implementing a SNAP-Plus program that would allow for seamless bonuses or discounts, bonus in



the value or discounts in the price, for shoppers who are buying raw ingredients (Paul).

The study also looked at the federal Farmers' Market Promotion Program (FMPP) which funds projects to support farmers' markets. Appendix J: FMPP Grants lists the grants received by Portland, San Francisco, and Seattle since the program's inception in 2006. The findings showed that one city uses the grants and leverages those funds, and another expressed ambivalence about the program. Further research might find more details on how all cities use the program to their advantage.

FMPP is not a big program. It's not even on my radar, it's so small. Personally, I wouldn't look at that (*grants toward education, FM SNAP, etc.*) as an indicator. Farmers' Markets are pretty easy to get started. FMPP is not on radar, grants too small, maybe savvy groups could get grants (Jones).

Yeah, we're in our third year. We're the second year of our second grant, FMPP grant for our organization. The one we have right now is around building capacity at farmers markets around food access issues. So we re-formalized the farmers markets access partnership that's composed of state agencies, local agencies, nonprofits, and farmers markets that all come together around helping to increase opportunities for low-income people to shop at farmers markets. It's a continuation of a grant. I had a Community Putting Prevention to Work grant.

So there are three counties in Washington where a market manager is getting a stipend through the FMPP grant to build these similar collaborative

relationships at their local regional level with their regional farmers markets, their local health departments, their SNAP agencies, their WIC clinics, food banks, all around farmers markets. So the idea was that everybody wants to be supporting farmers markets and increasing SNAP access and everything else.

I just get so enthusiastic about this, because it's actually working. We have some really cool things that are going on in these different counties in Washington State as a result of this project. I'm looking at year two to start building in this ongoing – you know some sort of a stipend for these market managers that are leaders in their community.

We've got one of the tribes out here that is very involved in working with a farmers market that is on their property that they've never worked with before and they're going to fund and incentive program, a SNAP incentive program now and as a result of these meetings and these people working together that haven't worked together before (Kinney).

***Mayor and Executive Leadership.*** Mayor and executive leadership support is critical in putting and keeping food system work on cities' agendas. In some cases food systems professionals educated leadership about the importance of food system work.

So we have – we have counselors and we have commissioners and we have heads of bureaus who get this stuff so it's not like we have to prove to them what – why this is important (Cohen).

So that was very, sort of before his (*the Director of Environmental Health*) time in that way of thinking, for public health, and he came to my department in my old non-profit and wanted to work on food... So that is how I ended up in public health, because the people thinking about at that point were funding me, and supporting the work was the Director of Environmental Health.

We were very fortunate to have Mayor Newsom, our previous mayor, who was really into, and he understood food really well, from both an environmental side as well as the human needs, public health side, and he wanted to do some stuff around food and I was in a position to help direct and shape what that was going to be, and that was more system engagement again with food.

Roots of Change had wanted to work with mayors to do urban rural roundtables to try to see if we could do some kind of planning, but to take into account rural areas as well as... so it was actually something that Mayor Newsom... went to every meeting, as well as the Secretary of Agriculture for California and then through that process Mayor Newsom really wanted... he'd been promised a food policy.

I said, we are going to do way more than procurement policy, we are going to do a system policy, and that's when the Mayor issued the Executive Directive on Healthy and Sustainable Food. The directive really set a framework for food policy in the city, and it asked every city department to appoint one person who was going to be their liaison to... reporting back to me what their department could to advance this framework, these concepts, and particular

departments... so I looked a lot of directives... engaged every city department, and then particular departments were tasked with particular things by a particular point in time (Jones).

We were able to kind of build the rationale for it because we had had a few years under our belt of bringing the political leadership in voting and policy direction, and then over time educating them about all the possibilities of what's going on, as well as creating programs and implementing different actions.

*Answering the question of who was championing the creation of a food systems initiative and hiring an advisor to that department:* Well really Richard (Conlin, former city council member) was – I mean from the elected official end in the city it was Richard. Then were other council members who were very supportive of that, but they weren't particularly taking a lot of the initiative. I mean they would respond positively, but I wouldn't say they were champions per se. The mayor, the last mayor, so we just got a new mayor a month ago and the previous mayor was interested in elements of it and I would say that he became an advocate in some ways and was very supportive, but didn't have huge initiatives or anything (Shulman).

Probably one of the most important programs that we have, or policies or tools, is our Healthy and Sustainable Food Executive Directive. It was developed by Mayor Gavin Newsom... mayor at the time, and so that was really something that

sparked a lot of further policy development in San Francisco around local food and access to local food, and so that is probably the most instrumental tool that we have right now (Sokolove).

I mean we've had Richard Conlin... on the Council for 16 years. And he was one of the leaders in this area. ...and just food systems' work, I mean, everything, all aspects of it really. And that's why I thought Phyllis (*Shulman, Conlin's Legislative Aide*), his staffer, would be a very good person to talk to because they were both instrumental in moving Seattle forward and in getting the position allocated for Sharon's work, the advisor role (Langlais).

San Francisco just passed, supervisor Phil Ting, endorsed, and just spoke at the supervisors meeting, that allows property owners, to have... it is the city version of the Williamson act, which is the federal act, if you have property that is fallow, and goes into food production, you can, your tax liability on that property decreased (Farren).

We've been working with King County and Seattle because it's so easy, you know having the mayor, the county executive, the city council, the county council declaring Farmers Market Week and we did have video last year of a well-known chef who designed a recipe (Kinney).

There are varying levels of leadership support for food system work, perhaps because of the current political climate or changes in overall leadership.

There was political opposition to it and I said I couldn't understand why because Mayor Nichols was the mayor at the time and so much of what the potential FPC was espousing was sort of climate work which he was a very strong champion for. So I was really surprised but there was a lot of political reluctance there and resistance to – and some of it had to do with jurisdictional boundaries in King County and the city and they have an interesting story up there as well.

You know you're going to hear something different but it (*the Food Policy Council*) was because there was a change in leadership in that department and the leadership felt that the work that was being done really wasn't a part – it was central to their mission and didn't have the staff... they wanted to focus on other things (Cohen).

***Food Policy Councils.*** Food policy councils are an important tool to set food system planning agendas, and while relatively new, at least one has already run its course and disbanded.

I hearken back to the Food Policy Council. That's a nice segue for the great work that they did in 2002 to 2003 to come up with an overarching mission and governing principles for the work that we do. So the Food Policy Council is a different story for us... I mean you know it no longer exists and much more than that, the Food Policy Council was created as a working group of the Sustainable Development Commission. And which has on two different occasions ceased

functioning as well. And that is because what we've learned certainly as a bureau is that advisory groups that are convened for a limited duration with a specific deliverable are ones that are the most effective for us.

We're trying to give them their props for the incredible work that they did in 2002, in 2003 and 2004 where they set the overarching agenda. And at that time they were the only organization of that type that existed. Since that time there's been this proliferation. You know this is a plethora of groups that are working on niche issues in food and a lot of times you've got the folks who are doing it are executive directors working 60, 70, 80 hours a week keeping their organizations together and don't have time a lot to go to a monthly meeting for something else which isn't necessarily affecting what they do... In other words, I've always appreciated that the Food Policy Council can kind of help set that agenda (Cohen).

Interviews and background literature on FPCs show that they are new, and their organizations differ between cities.

...if you look at some of the work that Oakland did, the Food First Group did, they published a report on Food Policy Councils, 85 percent of Food Policy Councils that exist on a municipal level do not have a formal tie to the government. I mean things had changed over the years in terms of what a group like that might want to do. And all of those things would best be done in a group that would probably be outside the purview of the city. I mean and I often told them (*The Portland/Multnomah FPC*) they could be watchdogs... in some ways I think Food

Policy Councils never realize that they had power. I mean they could do whatever they wanted to do based on the fact that they were appointed by the Mayor and the commissioner. I think that there was never in some ways a realization that they got their power based on the fact that they were appointed by the mayor (Cohen).

**Resiliency.** When informants were asked what steps cities are taking to increase resiliency in food systems, they stated that resiliency is important, and is emerging as a concept to understand better and work toward, but not yet in a comprehensive way.

The Bayview/Hunters Point area is a fairly depressed area in San Francisco and really highlights the income disparity that we have in the city, especially as it's so pronounced right now. (*The program director*) is helping to make it so it can be a model for other neighborhoods in the city and other neighborhoods across the country. And so he is looking at resiliency from a lot of different perspectives, and I represent the food system on his advisory committee, and so we are just starting to meet and talk about what resiliency really looks like in that neighborhood and what that's going to look like for food, and we haven't necessarily come up with any strategies at the moment—we're just starting to talk about it—but it definitely does come up, and as I mentioned, it's a whole advisory panel in the city made up to talk about that specifically (Sokolove).

**Resiliency and Sustainability.** Resiliency was characterized as a buzzword, and a catchphrase, and mentioned as a new way of looking at sustainability.



You know I think resiliency, about two years ago or something, became sort of this buzzword. And when we were asked by the administration at that time to look at some of those areas that you and I discussed... we kind of considered resiliency. And we got a small grant because we were being asked by the administration to look at questions that we sort of defined as resiliency, and really wanted to have an outside person help us and we were looking at metrics at the time which are difficult (*to find*) in the food system (Cohen).

I would say the city as a whole... I would not say has been considering resiliency much. I'd say that the City of Seattle is much more driven by sustainability and what goes into that and how that's been defined and not resiliency. But the story of how we even came to the local food action initiative actually comes out of a resilience frame. So actually from our office work over the years as we were focused so much on – because Council member Conlin is very focused on sustainability and how to do you apply that to all the different policy making that we were going to be doing?

So I started to really do some research around resilience and at that point, which isn't all that long ago really, very difficult to find a lot of research other than some books that were kind of more international in nature, it wasn't so common. In the last five years or so it's really changed. So in that I realized that we needed to get beyond kind of just talking about sustainability and as long-term goals... are we going to have healthy communities and healthy earth and healthy

people and everything that goes with that and really start thinking about resilience (Shulman).

So I mean resiliency is just this huge catchall phrase now, kind of like sustainability in some ways (Gisler).

I definitely think that comes up quite a bit. I mean, I think the word resiliency is sort of the new sustainability. It's more of a buzzword now than it's ever been in my career. So people are talking about resiliency... (Sokolove).

***Disaster Planning and Climate Change.*** Resiliency was mentioned as a key concept in disaster planning and climate change and adaptation work, but that resiliency is seen as something more than just disaster recovery.

When we did this mayor's innovation project and they were looking at resiliency, the sense that we had from the government in charge, our leaders at the time in the city, was that resilience meant can you within a city produce all your own food? It was this local thing again. And we would talk about that and say, "Well, that doesn't really make sense. What happens when the earthquake comes here and then we totally lose our food source?" (Cohen).

It is starting to come up more—resiliency. It is starting to come up more in the context of, you know, people's planning for disaster... it was coming up in conversations yesterday, there is work on neighborhood-level resiliency. So I

haven't wrapped my head around what that means yet, it would have to be... there is individual level resiliency, and then there is system level, and some of my colleagues are looking at community –level resiliency, and climate adaption and climate change, or a heat event, or flood event, or cold spell event—any of these kinds of things. I'm thinking about it more in terms of a disaster event and food.

In a disaster event we all know that the first 72 hours are probably going to be really different ways of feeding people, there is not a lot of supply in the city, there are disaster responders who come in with whatever is there, so I am thinking about resiliency when some of our providers for the most vulnerable, they have to have their storage across the bridge in Oakland or someplace cheaper, so that's a problem. I am sure if someone thought about it there is cold storage or dry storage in the city that people could use.

In emergency preparedness in general, food is one of those topics, but it tends to be more on responses. I mean it's a growing area that they're looking at. It's a growing area from the other perspective in terms of just regional work on food. We're connecting and more emergency preparedness, I mean it works both ways, right? Food security definition is starting to broaden to include emergency preparedness and not just kind of food access and who gets to eat... (Jones).

Now the Office of Emergency Management... we've been working with them on a variety of things, but one of the things that comes up is we decided to fund a significant effort to over the next two years to develop a recovery plan for the

City of Seattle. There are not many cities doing this yet. There are a few and they're still kind of realizing and it does take funding and a significant effort, especially a city that's of any size.

As we were looking at scoping that recovery planning effort and what the engagement is we recognized that there's a piece around resiliency. I mean so recovery planning also has things like infrastructure and there are a lot of different things that are about how do you recover?

But we recognized that really resiliency is a critical component of all that and in fact it's a bigger frame than just the recovery piece. So how do we take our recovery work and also do some work out in the community around resilience? So part of the funding for this two-year effort is to figure out how best to do that, and they haven't really decided that yet, but that resilience piece is part of that effort. They are also looking at getting one of the Rockefeller grants for a 100 Resilient Cities Around the World and they've applied and they make the first cut, but there are a couple more rounds. If they get that money, part of what they get is to hire a resilience officer.

Yeah, this big grant that is going around to cities. So from that shop, they very much see resilience and ultimately the emergency preparedness world, which is focused more on response and hazard analysis and into other realms around sustainability and community development and all the different things that can go with that.

But I wouldn't say that it's in that world right now. I mean it's still pretty much in their shop (*Office of Emergency Management*) and I wouldn't say that it is spread amongst other departments or it isn't a citywide orientation (Shulman).

One of the things that we're doing with resiliency is talking about emergency planning. That seems to be the buzzword right now, lots of emergency planning. We just had a snowstorm a couple of weeks ago and we didn't have any gas because the trucks couldn't come in.

So one of the things I was thinking when you were saying well what – we're lucky we have the food that's grown fairly close, but the other huge thing for resiliency and emergency planning would be railroads and freight systems and the ability to get food and supplies into places. And they closed the city. I actually had never seen them do that. They closed the city on Friday, so it's interesting (Gisler).

There is a program, I think it's in Vancouver, where they have neighborhood food purveyors, nonprofits that have volunteered – they get some funding associated with it, but nonprofits strategically placed in all the neighborhoods throughout Vancouver, and they're sort of designated as the food distribution centers in case of an emergency, and I think that's a pretty interesting concept, too, to just have these centers pre-designated so that people know where to go if there's a real problem (Sokolove).

I'd say for over the last few years there's been an increasing awareness of the need of that (*resiliency*) and especially with the Emergency Food System... (Langlais).

***Economic Resiliency.*** Work being done to increase economic resiliency was mentioned frequently and at different levels: system, community, and individual. Central are the production side like farmers and food system businesses (e.g., restaurants, food distributors, food trucks, and food manufacturers) and for individual food self-sufficiency.

And after this whole initiative... we really said phase two was going to be food and economic development, and food access. We need to work more on that. Well, when I got the call from the Mayor's office and they said we want to do this grant, vertical farming and jobs, and I said, "why don't we make it broader, and look at food systems and economic development."

It (*report: North American Food Sector, Parts One and Two: Program Scan & Literature Review and A Roadmap For City Food Sector Innovation & Investment*) was really looking at food sector innovations and then a way to have the City try to estimate what is the best use for their own funds for infrastructure and innovations, and return in terms of jobs and good jobs.

The wholesale produce market in Bayview-Hunters Point, is basic infrastructure we have in the city, we are very lucky to have a wholesale produce market. The manager has been talking about a food enterprise zone, or how do we

cluster infrastructure for food so that there's synergy for food entrepreneurs, the places where the jobs are coming out of the food sector, the service sector, but really more the local food businesses, food manufacturing... For the street food carts we don't have a commissary, so is that a good investment for the City to have a commissary for the food trucks? Anyway, that is the project that is going on right now, the Food Cluster Analysis... (Jones).

And created a strategic framework around resilience and the different elements of that and then thought about well where can we really – where's the need to really do some deeper work and food was the first thing that was on the list in terms of – I mean we were all ready doing a variety of things, but it's like how do we get even deeper? Where are the things that really unify? A lot of things, whether it's health and environmental protection and economic development and vulnerabilities, all the different things, so food really stood out as a core element. So we really started to think about, what does that look like and what is needed that can have an impact on a city and created the Local Food Action Initiative from that place (Shulman).

Then one of the most fascinating things I did was took a tour of the agriculture in Willamette Valley, which is say 30 miles south of here. And just really went out to the farms and talked to the farmers and talked about that whole level of – from

an economic standpoint. You need a certain amount of land to actually make it work.

So we just got rid of all the regulation on that (*food buying clubs*). So here's my thing about resiliency and it has to do with the whole way that people feed themselves, because it's a behavioral thing, as a planner, we don't tend to say, "Okay. We're going to teach cooking classes." Sustainability did teach cooking classes, but a planner, we're not really into the behavior of – I mean we are, but not in that kind of a personal way. So one of the things that we did is we – for me as a planner, that was where I took it as far as I could go with the code and stuff, but then on a personal level, I started doing some work with the food bank and doing some of the cooking. Which, I feel is really super important in terms of resiliency (Gisler).

So I guess the other thing that we're starting to track, and something that's a focus of mine, is looking at food businesses in San Francisco – food manufacturing, processing, distribution businesses, and to me, that is a lot about resiliency, and are we supporting local food manufacturers here in the city, and so that's another metric that we do track, and that's definitely starting to get a lot more attention now.

It's going really well. It's not necessarily about food hubs, but it's about really helping our local manufacturers, processors, and distributors stay in San Francisco and grow here and not have to move out of the city once they get past a



certain square footage... how many employees they hire, what their wages are, and so we're holding a business forum next week, where around 50 businesses around San Francisco are going to come around the table and just try to strategize how the city can help them stay here and grow here. It's definitely something that I think will help indirectly with so many different issues. If we do it right, the more food businesses that are here, hopefully, the more we can support our local farms and our local wholesale produce market, and also, a lot of these jobs are pretty high-paying jobs, and it's a low barrier to entry, and if we can create those jobs for people, we can really start employing people, and frankly, the key to solving hunger is getting people jobs and getting people the resources that they need, so hopefully, it'll have, in the end, multiple benefits (Sokolove).

We estimate that (*the James Beard Public Market*) we'll increase the volume of food sales of primarily local foods by over 20 million dollars a year within the Portland area. And that leads to not only job creation within the market of about 250 new jobs from locally-owned businesses, but our preliminary economic analysis shows that it would increase rural Oregon and southwest Washington employment by over 100 jobs. And so it's not only the amount of food that we can anticipate, a much broader pipeline than farmer's markets currently provide or CSA's provide, but that you have the sort of spinoff jobs of transportation, distribution, sorting, and that type of thing that really goes along with it. And we're underestimating right now the tourist impact on the market, but we know

from Portland's farmer's markets and others that tourists can purchase up to 20 percent of total sales within a market.

And so that's where the market is part of a broader agenda. We're also a partner in working with the city to retool its economic development program to include food and food-related business support. And so that's again something that obviously the market's agenda is to be able to secure more city funding directly for the market but to do it within the context of a larger group that's looking to help the city create a much more progressive food as economic development strategy.

And that position will just be critical to our outreach for producers not only in the Portland metro area, I mean we can talk about urban resiliency in that context, but also how Portland can just be a huge benefit to rural Oregon in terms of job creation and creates access for producers in farther-away reaches to have stronger retail markets in Portland (Paul).

**Urban Poverty and Food Insecurity.** The concept of food insecurity was expressed with five codes, which were combined for this section: resiliency and food vulnerability, vulnerable populations, food security, food access, and urban poverty.

These concepts were addressed with the following quotations.

...for so many people that was really important whether you're a half a mile from a grocery store. And I think what we learned over the years is that we can live next to the grocery store but if you can't afford it, it doesn't mean anything.

They've (*Seattle*) done some great stuff which says that six out of seven, seven out of eight grocery purchases are made on price, not on proximity. I mean so there are always these other issues.

And even when people do live – they haven't been able to see that there has been an uptake in fruits and vegetables when people live closer to a grocery store. So some of these things that we want to put out there as emblematic of the work that we do or this is the criteria that will make things better, a lot of times the issues are so much more multi-layered that we're really not getting to it.

*(In response to use of the term "Food Desert")* We've gotten away from that shorthand and I will never use that word. Just because of, it's sort of the equity connotations from the whole Redmond approach, which I totally understand. No, we don't. We really don't. We have some areas that are a little bit more, I would say, underserved than others but that totally makes sense because of the income and education level of those areas and the density. So we did those maps ourselves and we looked at, "Okay, how are going to be able to entice grocery stores to site in those neighborhoods," and you quickly realize that you're asking a business to site in an area that's totally antithetical to their business model. So while we do have some problems in some neighborhoods that are less populated and there aren't grocery stores that are right there. The real problem has to do with bus routes and sidewalks and mobility for people who can't get around.

...it all has to do with living wage jobs, working wage jobs, that so many of these questions that we wrestle with in regard to access and hunger, and this

fact that we're going to solve hunger is a little bit crazy to me. But the end result, or the basic strategy is how do we provide working wage jobs – living wage –you know to folks because we wouldn't have these questions in regard to access if everyone had an equal job. So really a lot of it comes down to that. It comes down to poverty. I really does.

How do we work with corporations that have very strong ledger sheets and are providing their sources of income for a few to make sure that we have minimum wage laws in this country that enable people to make a living wage and participate in everything this country has to offer.

And eating terrible diets. If you don't pay for it on the front end, you pay for it on the back end, I mean whether it's \$150 billion or \$300 billion I think when you take in cardiovascular and you take in all the other diseases that are food attributable (Cohen).

I've been thinking about it a lot, because, who is the most vulnerable among us, and I don't think we have great disaster planning for those who are, say, for our elderly, disabled, living on high levels of buildings, that may be isolated, and who actually serves them? For me it's come up in the context of thinking about the food needs of really the most vulnerable among us.

So when I think about that it takes on a different meaning, it's really resiliency of... as we have this vast network and we just did a hearing on food security about two weeks ago, with the food security task force, and the thing that

is not really well understood is how many people are vulnerable. In these cities, I don't think that SF is probably that unique. We may be more welcoming of vulnerable people, so we may have a constant influx of people in need, they are not the most stable numbers, and who is here, there is a flow. It came as a shock that 25% of our population is living below 200% of poverty. In a place like this, 200% of poverty is around \$22,000 a year or a little bit less. How do you live on that? A one-bedroom in the Castro is now renting for \$2,500 or \$3,000, right? That came as a shock to people.

So when I think about resiliency for that, it's about resiliency of the organizations that are serving them (*vulnerable populations*), it's resiliency of the funding streams that serve them... I think about it in that way because many of these organizations that are serving these populations are really just struggling to keep up and that is why we brought it to the light through a hearing and there was going to be a subsequent hearing in March... it's like resiliency of the system, supply of food, we are lucky we are in a year round growing season, and we have farms close, and we have a really successful food bank, (laughs) which I don't know if you can say "successful" and "food bank" in the same sentence...

Noe Valley is in Dist. 8, and this is not neighborhood level information, but it's supervisory level information. When you look at District 8, the person you talked to may not know 17% of the residents are living below 200% of poverty, and 50% of seniors live alone. This is a report we just did, *The*

*Assessment of Food Security in San Francisco*, so we broke down by supervisorial districts. We just presented it two weeks ago.

This could be a grocery store, great, but if you've got poor people that can't buy the apple, you don't have food access for them. They are not food secure no matter if Whole Foods is across the street from them or not, right? (Jones).

We do have some legislation funding a program to do some corner store conversion, so that's another policy-driven program. And that's to help local corner stores that primarily sell tobacco and liquor to help them figure out how to sell healthy and fresh produce.

*(Response to use of the term "food deserts")* I mean, we definitely use that term here as well. Yeah, we definitely do. I mean, it's commonly understood and accepted (Sokolove).

One of those is Portland Area Food Forum, which is trying to put together a network of food projects and professionals who want to look at expanding access to local food for those who cannot typically afford it. And so that's where the market is part of a broader agenda (Paul).

Let's see the one we have right now is around building capacity at farmers markets around food access issues. So we re-formalized the farmers markets

access partnership that's composed of state agencies, local agencies, nonprofits, and farmers markets that all come together around helping to increase opportunities for low-income people to shop at farmers markets (Kinney).

**Panarchy.** Cities are changing their food systems in the model of community food systems. This section of findings includes quotations about the overall state of the food system, the practical and ideological intentions of food systems professionals to move toward a community food system model.

And my sense is one, that we have a global food system and we have to learn to embrace that in the most ethical equitable and sustainable way that's possible. And we have an ongoing disaster and catastrophe which is our existing food system, that on a daily basis you know is catastrophic because of the priorities that we have, the way we eat, the way food is distributed. And as you know it's not a distribution – it's not a production problem (Cohen).

There are just so many different factors. So it is, I think it's hard. I think part kind of what's helping is that we know that the world of food is a mess. *[Laughs]* I mean I think that what really underlies this, is that people have analyzed enough to know that the system, the kind of large-scale industrial food system is unsustainable (Shulman).

If we could, as a community, start eating less processed food and more whole grains and bulk things that take less energy to produce and then, so you're not as

tied to all the heavy processed food. But because we're scared of cooking that way and plus, we just can go out and we can get all this food, I find that a real challenge. And for resiliency too because, if you're stuck with a victory garden, if you're stuck now with – our food sources really dry up, then you need to be able to learn how to feed yourself on less, I guess (Gisler).

But I would say if anything, it would be great if we had a food security plan. I mean, that, I would feel really comfortable saying we should have in the city, and I think Paula is working in that direction. She just recently published a paper that sort of accounts for how many people are hungry in the city, how many meals are served, where are the food pantries, how many people do they serve, their location, that kind of thing, so it's sort of a state of the union for food security, and the picture's bleak. It's not a very nice picture, and so there's definitely a lot of hunger in the city and a lack of a lot of access.

In addition to that, I would love to see metrics around distances to stores that serve healthy and affordable and culturally appropriate food... but I think that would be interesting to me to just see, how long does it take people to get to, and are there public transportation routes to get to those stores if they're not walking distance already. To me, that would be really interesting, an interesting metric, because that tells me as a planner are we creating walkable sustainable communities? (Sokolove).



**Chapter Summary.** This chapter presented the findings from the study, which were organized according to the research questions. Extensive quotes from the semi-structured interviews were included to accurately represent the reality of the persons and situations studied (Bloomberg & Volpe, 2012).

Because of the very broad goals of the study, and the nascent nature of urban food system work, the study resulted in numerous key findings. Chapter 5: Analysis, Interpretation, and Synthesis analyzes the prominent findings. Chapter 6: Conclusions and Recommendations includes a number of recommendations for further research based on these findings.

## CHAPTER 5

### ANALYSIS, INTERPRETATION, AND SYNTHESIS

#### Overview

The purpose of this embedded, multiple-case study was to understand planning approaches that strengthen food systems, and ultimately, urban resiliency. It proposes that by understanding food system planning in this context, new planning approaches can be developed to strengthen urban food systems.

This research comes from an urban planning perspective and is prompted in part by the relatively recent emergence of scholarly literature stating the importance of including food system planning in urban planning agendas. Study of food and food systems is inherently complex, and although everyone has a close relationship with food, we know very little about where food comes from (Carolan, 2012, p. 2). Since the mid-20<sup>th</sup> century, provisioning cities with food has been the role of the private sector with little public, or municipal input (Mayo, 1991; Pothukuchi & Kaufman, 1999). However, as this research progressed it was apparent that food system planning is taking place within a variety of municipal departments and initiatives, and by a variety of food system professionals and citizens.

This research was conducted in two phases: a multiple-city case study of 16 cities' primary and secondary documents to gain understanding of the landscape of food systems work in U.S. cities; and an embedded, multiple-case study of the food systems of three U.S. cities—Portland (OR), San Francisco, and Seattle. This chapter includes an analysis of the findings gained from semi-structured and unstructured interviews with

food system professionals in those three cities, which were supported by ongoing review of food system-related documents.

Chapter 4: Presentation of Findings presented the relevant findings, organized by the research questions and conceptual framework, and supported by extensive quotations. This chapter, Analysis, Interpretation, and Synthesis focuses on the most prominent findings. The process of presenting the findings involved separating out the data and telling the story of the research; analysis and synthesis “reconstructs a holistic understanding of the study” and shows how the research questions were answered by the findings. This chapter, therefore, interprets the findings that emanate from the data collection methods, relates the findings to the literature, and shows how the findings relate to the researcher’s assumptions about the study (Bloomberg & Volpe, 2012, p. 179).

This chapter begins with a brief description of the three cities in the embedded, multiple case study, addresses the relevance to the conceptual framework and literature review, and discusses the findings related to the researcher’s assumptions. It presents an analysis of the research findings in three analytical categories: Planning for a Resilient Community Food System Framework, Creating a Resilient Community Food System Framework, Indicators and Metrics—the Research Gap, Food System Resiliency, and Urban Poverty and Food Security.

### **Context of Three Cities**

The three cities chosen for this study are Portland, Oregon; San Francisco; and Seattle. The method for choosing these cities was described in Chapter 3: Methodology.

The cities exhibit high levels of sustainability practices and they have strong food production and farming histories. All three cities can be described as having vibrant and diverse food cultures. The cities are relatively similar in population: Portland, 603,000; San Francisco, 826,000; and Seattle, 635,000 (2012 Census estimate). They vary in size by square miles of land mass (not including water) (sq. mi) but are on the smaller range of major U.S. cities that are as large as 469 sq. mi.: Portland, 133 sq. mi.; San Francisco, 47 sq. mi.; and Seattle, 84 sq. mi. They do vary greatly in their population per square mile, with San Francisco having the greatest density of 17,179 per square mile, compared to Portland, 4,375 and Seattle 7,251. San Francisco was also founded much earlier, in 1776, compared to both Portland and Seattle in 1851.

The 2007 *SustainLane US City Rankings: How Green is Your City?* (Karlentzig, 2007) sustainability rankings rated Portland, San Francisco, and Seattle at #1, #2, and #3, respectively. It described Portland as having a lot of natural areas and parks; walkable neighborhoods with stores and services; excellent public transit, air, and water quality; and a model for downtown, mixed-use development.

Table 6

*Three-City Statistics*

	Portland	San Francisco	Seattle
2012 Population	603,000	826,000	635,000
Square Miles	133	47	84
Pop. Per Square Mile	4,375	17,179	7,251
Year Founded	1851	1776	1851
SustainLane Rating	#1	#2	#3

San Francisco was described as being long admired for its sustainability efforts, with success in solar energy, recycling, and large-scale composting; bike transportation;

green building; and local food systems. It ranks highly in clean air and water and amount of parkland. However, San Francisco has a low ranking in housing affordability and is one of the most expensive cities for housing in the U.S.

Seattle was praised for its natural beauty, landscape, and climate, with high rankings in good air and water quality and high use of public transportation. Although the city does not have a subway system it has plans to increase bus service and bike lanes, and “to change zoning to support more pedestrian-friendly communities as part of the multifaceted plan to address global warming locally” (Karlenzig, 2007)

All three cities show strong, progressive mayoral leadership. Portland was the first U.S. city to attempt to reduce greenhouse gas emissions in 1993 and is considered progressive in its commitment to create a healthy, sustainable city. San Francisco’s Mayor Newsom was one of the first in the country to acknowledge the value of local food and other sustainability elements, and to connect the dots to economic development strategy with his *Healthy and Sustainable Food for San Francisco* proclamation in 2009. Seattle leads the country in climate change protection as having the first mayor to sign the U.S. Mayors Climate Protection Agreement in 2005, advancing Kyoto Protocol goals (Karlenzig, 2007).

During the course of this research the food system-related documents and statements made during the interviews confirmed that these three cities are committed to increasing the sustainability of their cities. The research showed that they are at the forefront of food system work and innovation. However, it was also clear that the cities

continue to face challenges that are not yet solved to ensure that their citizens have access and can afford healthy, nutritious, and culturally appropriate food at all times.

### **Relevance to Conceptual Framework**

The research questions were created based on the conceptual framework that was introduced in Chapter 1: Introduction. It consists of new community food systems, created by stakeholders and approaches; urban planning for food, supported by federal, city, and community resources; and urban resiliency, including urban food security. At the core is the theory of Panarchy as a model for urban planning and creation of new community food systems, resulting in urban resiliency and food security. This framework, which was introduced in the introductory chapter, is illustrated below.

As patterns emerged from the findings, analysis confirmed some of the original theories and literature, contrasted with others, although every case was not so clear-cut, as discussed in this analysis. By building on existing scholarly work and planning practice, this study builds a strong case for its findings and conclusions in support of future food system planning.

### **Assumptions**

This study began with a set of assumptions which were included in the overall research questions, reflected in the conceptual framework, covered in the literature review, and which guided the development of the interview questions. Those assumptions were that the current global, industrial food system is unsustainable, unjust, and unhealthy (Clapp, 2012; Carolan, 2012). Initial research showed that urban planners and planning scholars are addressing planning for food, which is an activity that had been

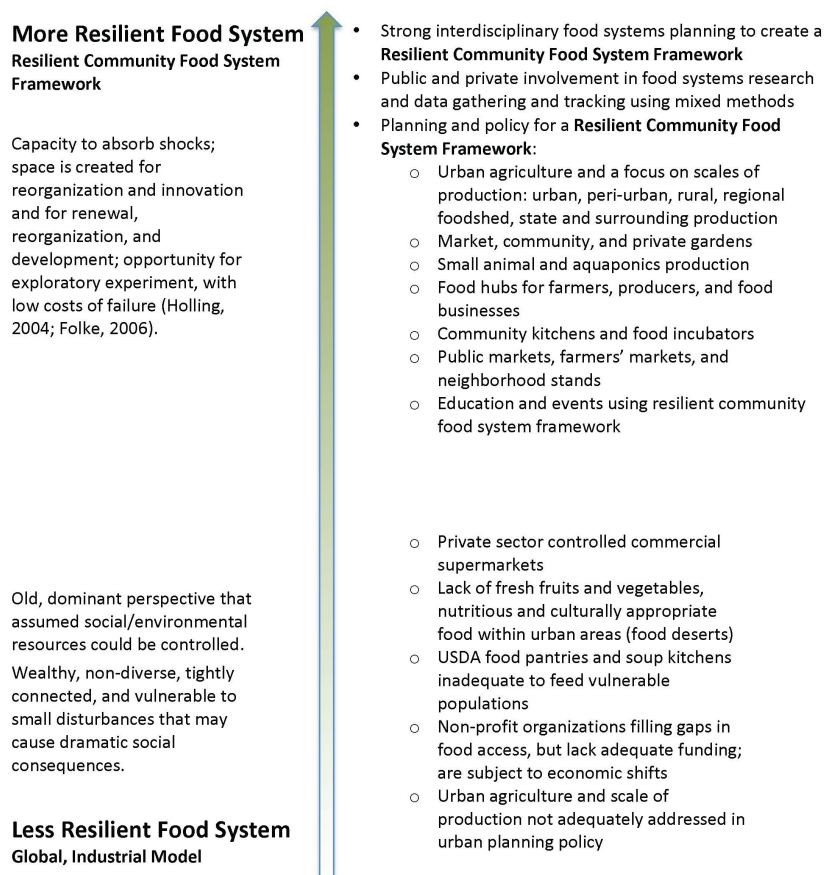
largely ignored since the mid-20<sup>th</sup> century (Pothukuchi & Kaufman, 1999; Tangiers, 2003, Mayo, 1991). It was assumed that urban agriculture activities were happening in U.S. cities, and that planning departments were creating and updating urban agriculture zoning policies to reflect what was actually happening on the ground as far as agriculture and animal husbandry, as well as new, innovative projects like roof gardens, vertical gardening, and aquaponics. It was also assumed that data including food system indicators and metrics were being compiled and used to track progress, and that policies guiding food system work were being implemented and codified to guide food system professionals. The concept of resiliency was at the center of this research, but few assumptions were made about its inclusion in current food systems planning.

What emerged were more nuanced findings: Planning for food systems is happening throughout municipal organizations, including city, county, and regional organizations, but planning departments are not necessarily leading these efforts; details of the three cities' planning efforts to update urban agriculture zoning policies are progressive, not only allowing but encouraging urban agriculture; interview informants confirmed initial document review that found food systems indicators and metrics are not being researched and compiled in a comprehensive way, and opinions about the necessity of data tracking varies among the interview informants; and the concept of resiliency in food systems resilience emerged with mixed results. These and other prominent concepts are discussed in detail in this chapter.

## **Relevance to Panarchy Theory**

This study has presented Panarchy is a model for transforming food systems, and Figure 9 illustrates a Panarchy model from a food systems perspective. Innovation and development is happening in cities, exhibited by work to improve food access and affordability, health and nutrition, and increased community education and involvement. Based on this study's understanding of what constitutes a community food system, the food system professionals who were interviewed are creating what can be considered a resilient community food system framework. Further progress can be made with a clear understanding of how food system planning is taking place in U.S. cities and by learning from successes and challenges of cities engaging in food system work.





*Figure 9.* Less to more resilient urban food systems: Panarchy from a food systems perspective

### **Planning for a Resilient Community Food System Framework**

**Food System Organization, Interdisciplinarity, and Executive Leadership.** In less than 20 years after planners and planning scholars stated the need for food system planning, urban planning for food has become a strong focus for cities. Since the mid-20<sup>th</sup> century urban food provisioning was considered a private sector issue, managed effectively with supermarkets and corner markets providing affordable food to the majority of urban dwellers. In many cases urban food production was outlawed with

zoning prohibiting agriculture, animal husbandry, home food production for sale, and food sales within residential neighborhoods. USDA food programs and city- and state-funded programs have provided food assistance, and the non-profit sector has struggled to fill in the gaps to feed vulnerable populations. There is now a strong push from many municipal departments, both city and county, to improve food provisioning in cities. It became clear early in the research that food system planning is a city-wide initiative, and that planners play a role along with many other food system professionals.

***Organization.*** In addition to urban planning departments, food system leadership comes from a range of departments within cities' organizational structures. A report on U.S. city food policy and programs illustrated this point, showing food programming being led by different departments, with none housed exclusively in urban planning departments. Portland and Baltimore are housed in planning and sustainability; Louisville is in planning, sustainability, and economic development. The remaining 10 cities in the 13-city study into cities' food system organization are in some combination of sustainability, economic development, social development, the Mayor's Office, and health (Hatfield, 2012). This suggests that urban planners may need to look at food systems planning from the orientation of other departments. Hatfield asserts that where food programming sits within a bureaucracy "can influence food policy priorities" and can either allow for innovation or limitations (2012, p. 17). Paula Jones directs San Francisco's Food Systems Program in the Program on Health, Equity, and Sustainability within the Department of Public Health. She described winning a grant that looks at food

systems and economic development, but that the grant was better suited for Planning than Health:

So I called Diana said “let’s write this grant” and when the opportunity came and we did get it. So, Planning got it, and now when you go to the Planning website you’re going to see the project that came out of that, which is like a food sifter innovation scan of food innovations... looking at what is good for the City to invest in (Jones).

Steve Cohen, Director of Food Systems Planning and Policy in Portland’s Bureau of Planning and Sustainability spoke about the integration of planning and sustainability, and in working with health. As the director of food programming, he does not have a background in planning, but finds advantages to working with planners:

I’ve worked with people in the Health Department and worked with people and also in the Sustainability Department... there’s a bifurcation between what I would do in the city side and what the county does, which is actually the provider of social services. In fact my position... was the first food policy position that was established in an organization that was not a social service provider. And it wasn’t even our planning department. It was in the Sustainability Department. I didn’t realize how much of this work in municipalities would come under a planning function.

Indeed, when I started it was in the Office of Sustainable Development and in January 2009 the Mayor who came in at that time merged the Bureaus of Planning and Sustainability into the Bureau of Planning and Sustainability. Even

though there had been rumblings a couple years before that when the APA began to look at it (*urban planning for food*) at the first conference they did in San Antonio and there was a food track and there was an APA white paper, I think it was 2006, and they began looking at these issues, so I knew that but I had never worked in a planning department until 2009, so then I began to realize more about the connections between the work that they do and food systems work, and now I am integrated within that department and I get it so I've come from both places (Cohen).

In 2012 Seattle hired its first advisor to implement the Local Food Action Initiative in the Office of Sustainability and Environment. Phyllis Shulman was the Senior Legislative Aide to former City Councilmember Richard Conlin who championed Seattle's food action initiative. Shulman did much of the work in creating the department and was instrumental in hiring the first Food Policy Advisor, Sharon Lerman (who was unavailable to be interviewed for this research). Shulman describes the decision on where to house the food programming:

So we decided after a few years to create that position and to house that in our Office of Sustainability and Environment. I had talked to people... in some other cities saying that the lessons learned for them is that it was better not to house it in the Mayor's office, which was more common place in which these positions are housed. They were finding that it was actually better if they were housed in the Sustainability Office, because a number of cities by then were creating sustainability offices or something similar. We created the position in that Office

of Sustainability and partially that's because that the office that does more interdepartmental work (Shulman).

Urban planners who are already doing food system work can look carefully at where food programming is housed, understand the orientation and motivation of that department, and at the problems being addressed and the methodologies used to address those problems. This can help them to better understand how the planning department can work with the lead department to accomplish food system priorities.

Planners who are interested in moving into food system work can look to the lead department to better understand the programs and priorities, and incorporate them into their own projects. In San Francisco, the Planning Department's Food System Policy Program was recently created when a partnership between an urban planner and the food systems director developed:

...my colleague in Planning who really wanted to work on food... and then she was able to get her feet wet in her job, working a little bit more on food... she was trained as a planner and she was reviewing our bond reconstruction water projects. I got to know her probably in 2008, something like that. I saw opportunities and there was a big opportunity that came a couple of years ago... Well, when I got the call from the Mayor's office and they said we want to do this grant, vertical farming and jobs, and I said, "why don't we make it broader, and look at food systems and economic development." So I called my friend in Planning, Diana said "let's write this grant" and when the opportunity came and we did get it (Jones).

For cities without a food system program, planners could be instrumental in designing a new program, and deciding where it should sit based on the city's unique food systems issues and challenges, and the existing organizations and abilities to address those challenges.

***Interdisciplinarity.*** The prior discussion and comments suggest that urban planners probably need to work on food systems planning and policy that is lead by other departments. Food system work is an interdisciplinary endeavor, with partnerships between city, county, regional, and state organizations, and within myriad departments and offices within those organizations. This is illustrated the research findings. Discussion about food systems work within cities includes programming and policy at the city, county, regional, and state level. It also found that in the cities researched, interdisciplinarity between city and county departments are the norm. Hatfield stated that food policy programs should be situated in a way that “promotes frequent cross-agency collaboration” (2012, p. 17).

The following comments stress the importance of interdisciplinary food system coordination. Steve Cohen spoke about the advantages of working with other departments, and specifically by working with urban planners:

I'm not a planner. I work in a planning department, but I also work with tons of other people, those of us who worked in the sustainability department, too, work in solid waste and recycling and energy and solar and in green building, and they don't have planning backgrounds either. And in fact, I think it's really been a

great thing, for me at least, I mean now I'm sort of integrated in those planning processes, GIS work, and there is a great complementary work that is going on especially now as planning departments begin to see the connections with the work they do to public health. I've worked with people in the Health Department and worked with people also in the Sustainability Department (Cohen).

In San Francisco the Mayor's *Executive Directive on Healthy and Sustainable Food* set the agenda for involvement by every department that touches food:

The directive really set a framework for food policy in the city, and it asked every city department to appoint one person who was going to be their liaison to... reporting back to me what their department could to advance this framework, these concepts, and particular departments... so I looked a lot of directives... engaged every city department, and then particular departments were tasked with particular things by a particular point in time (Jones).

In Seattle the Food Interdepartmental Team is self-organized and committed to working on food systems projects:

We created an interdepartmental team in the city of multiple departments that work on stuff together and ultimately developed an action plan, looking at their coordinated work. It started as a self-organizing group of people in a number of departments and including some county folks to talk about kind of food work collectively (Shulman).

And that's (*Seattle's Interdepartmental Team*) composed of representatives from different departments who touch food in some way; everything from recycling or compost, waste... gardening, to the Human Services emergency food and senior meal programs. And that's the IDT is an area where people can come together and share information, network and then develop— part of that was developing a food action plan (Langlais).

**Leadership.** Leadership sets the tone and supports food system planning, keeping it on urban planning and other departments' agendas. Change in leadership was mentioned briefly, but it seems unlikely that new leadership would derail successful and popular food system work. Portland's city government is organized around a bureau and commissioner model, and food systems work has become part of the culture:

So we have – we have counselors and we have commissioners and we have heads of bureaus who get this stuff so it's not like we have to prove to them what – why this stuff is important (Cohen).

Paula Jones expressed how fortunate San Francisco was to have Mayor Gavin Newsom on board as food systems planning efforts initially got off the ground. She stated that Newsom took a leadership role, and supported her work as the food systems director:

...understood food really well, from both an environmental side as well as the human needs, public health side, and he wanted to do some stuff around food and I was in a position to help basically direct and shape what that was going to be...



In some cases the champion can come from another leadership role. In Seattle's case long-time City councilmember Richard Conlin led the charge, and although the mayors in office during his tenure, while supportive, were not leaders in pushing for creating a food system initiative.

***Summary.*** At the onset of this research it was assumed that urban planning departments were largely responsible for food systems planning, and that it was a new part of cities' agendas. This research confirmed that food system planning is a nascent endeavor, which is shown by the recent development of food system departments and the wide variation of where food system work is housed in cities' internal organizations. Planning is happening throughout municipal organizations, including city, county, and regional organizations, and planning departments are not necessarily leading these efforts—in fact, food system work is not led exclusively by planning departments. This section illustrates how important it is to understand where food systems departments are located, and that every department that touches food in some way should be involved in food systems work. Food system planning is an interdisciplinary subject—one that cannot be tackled with the tools available from only one discipline or department. For this reason, sustainability departments are considered a good choice to house food systems because of their inherently interdisciplinary nature.

**Planning and Policies.** This research began with the assumption that policies guiding food system work were being implemented and codified to guide food system work. Hatfield (2012) makes an important distinction between policy and project work, “Policy work identifies and engages with those areas in which local government touches

or shapes the city food system. Project work, on the other hand, involves the development and implementation of specific initiatives. For example, revising city zoning codes to remove barriers to community gardens is policy work, while actually setting up and maintaining these community gardens falls under the ‘project’ heading” (p. 19).

This research found that a wide range of plans, recommendations, initiatives, and proclamations guide policy, or create a framework for food system work. An interview question for urban planners asked which documents had been developed or were under development; how they are being used to pursue food system policy; if there were barriers to moving from plans, reports, and recommendations to policy; and what their recommendations were for creating strong policy that can move food system programming forward. It specifically asked about comprehensive and sustainability plans and community food assessments in driving food system policy.

The responses did have a pattern—that there is no clear process linking food system research, plans, and recommendations to food system policy. Food system work is being done using an inconsistent system of plans and policy which create a framework for food system work, but the programming and initiatives are nevertheless moving forward.

Policies and plans that are guiding food system work take a variety of forms: comprehensive plans, sustainability plans, city food system plans, Mayoral proclamations, and inclusion in climate change adaption policy.

The American Planning Association developed a report, *Planning for Food Access and the Community-Based Food System* (Hodgson, 2012) that asserts that among

the many local and regional food-related plans “are important policy documents, the comprehensive plan is a leading policy tool with legal significance and the sustainability plan is an emerging and innovative policy tool with promising influence on local government sustainability actions” (p. 6-7). Because the comprehensive plan is a long-range policy document, it shapes planning and decision-making over the long term.

While lacking the legal standing of comprehensive plans, “the sustainability plan is being used to expand the transportation, resource conservation, climate protection, air and water quality, open space, economic development, health, and education components of the comprehensive plan and to address new and emerging issues, such as the health and sustainability of the local and regional food system” (p. 7). Hodgson stated that food should be addressed holistically, and that while these local level plans have the potential to guide food policy, there are many other factors including using other food-related plans and recommendations that drive food system policy.

When this question was asked of Portland’s food systems director, he stated that the Portland Plan (2012) was developed in part to guide the Comprehensive Plan update, but that the 2012 update of the city’s climate plan takes food into account due to food’s impact on climate, and climate’s impact on food:

Now the Portland plan of course was a document that was supposed to set the agenda for that comprehensive plan. There are – there is a page and there are recommendations regarding health and specifically there is some food stuff in there as they are now writing – still writing sort of the comprehensive plan. And that work is still going on. And the other place that we're doing that (*including*

*food*) and that I have more direct contact with is our climate action plan. And that's something I think we did in 2009, updated in 2012 and now we're doing this other update right now. That's one that I've worked on directly where we were the first city to have a climate plan (Cohen).

When asked why there is no mention of food in the city's Comprehensive Plan: I think it was sort of hard to take that language and sort of put that in the general planning or a comp plan document that traditionally – you know in the old days things were never – you never even considered food, so just the fact that it was considered is certainly movement. But I agree with you and (*a planner working on the Comprehensive Plan update*) said, "Where are they going to reside? Where are they going to be?" And they're still working on the comp plan. So a lot of times our climate report was getting compared to comprehensive reports... (Cohen).

In the case of San Francisco, the Mayor Newsom took a strong leadership role by issuing the mayor's proclamation that guides much of the food system policy:

Probably one of the most important programs that we have, or policies or tools, is our Healthy and Sustainable Food Executive Directive. It was developed by Mayor Gavin Newsom... and so that was really something that sparked a lot of further policy development in San Francisco around local food and access to local food, and so that is probably the most instrumental tool that we have right now (Sokolove).

Seattle's Local Food Action Initiative was described as the framework for policy making:

I'd say the initiative (*the Local Food Action Initiative*) created a framework for policy making. I mean in a sense the framework was the policy, but it basically established a set of... in a sense the orientation was to create a healthy local and regional food system. So in a sense by creating that framework then people could kind see themselves in that, because they realized, "Yes, that's what I'm trying to do. I want a healthy regional food system and I agree with those kinds of values and so I want my work aligned with that." So that only aligned city work, but I aligned the community around a framework of pulling together and working more kind of in alignment with each other (Shulman).

This section shows how a range of plans can set food system policy, yet there is not a holistic, consistent framework approach shared by cities. Cities food system policies are guided by a wide range of plans and this research began compiling many food-related documents that cities use including food system plans, healthy city plans, urban agriculture zoning plans, climate action plans, comprehensive and sustainability plans.

**Food Policy Councils.** Food Policy Councils and other networks of stakeholders are being used in many cities to guide and implement food system work. FPCs are relatively new in the U.S. and most have been established since the early 2000s.

The location of a FPC or other stakeholder group within a city's organizational structure impacts the program's priorities and effectiveness (Hatfield, 2012, p. 2). The FPCs for Portland and Seattle are countywide and San Francisco has established a city

FPC. Portland's sits in planning and sustainability, San Francisco's in health, and Seattle's in sustainability. San Francisco recently published a comprehensive report on food access for the most vulnerable of the city's citizens, probably stemming from the food department's location in health.

The Portland-Multnomah FPC was disbanded in late 2012, and research is ongoing to understand how their work will be carried forward, whether a new group will be created, or if other types or working groups can take their place:

The Food Policy Council was created as a working group of the Sustainable Development Commission. And which has on two different occasions ceased functioning as well. And that is because what we've learned certainly as a bureau is that advisory groups that are convened for a limited duration with a specific deliverable are ones that are the most effective for us. I mean we're trying to give them their props for the incredible work that they did in 2002, in 2003 and 2004 where they set the overarching agenda. And at that time they were the only organization of that type that existed. I think that there was never in some ways a realization that they got their power based on the fact that they were appointed by the mayor (Cohen).

The Portland Food System Director has had success in forming a task force for a limited duration, for a specific project. After the disbandment of the Multnomah County Food Policy Council, a task force was convened to advise on the Urban Agriculture Zoning Policy Update:

...what we've learned certainly as a bureau is that advisory groups that are convened for a limited duration with a specific deliverable are ones that are the most effective for us. And the best example of that is the Technical Advisory Committee that was put together for the Food Zoning Code work. And that's because to do that work, it was incumbent upon us to make sure that we had representation from the farming community people who are running CSAs, people who are running buying clubs as well, that there was very specific areas of expertise that had to be represented. So as the conversation became more sophisticated and we needed areas where in terms of expertise, then we're going to call together some of these committees and say, "Hey, can you go to five meetings over the next five months and at the end there will be this report and you're going to do that" (Cohen).

Portland's experience with convening task forces for specific project, for a specified time period, could be an effective method for cities to consider. By convening food system professionals and citizen subject matter experts for limited duration projects, it may be possible to recruit task force members who otherwise would not commit to longer-duration councils or committees.

### **Creating a Resilient Community Food System Framework**

This research began with the assumption that the global, industrial food system, within which cities food systems still operate, is an unsustainable system. It chose the model of community food systems to describe the ways that cities are improving their food systems. Approaches to creating and improving urban community food systems are

consistent within the cities studied, and this analysis suggests that cities are trying to create resilient food systems within the context of urban resiliency. Attitudes toward urban agriculture, food hubs, and education and events are positive, although the perceived value of these activities toward overall food security or resiliency varies. Overall, food system professionals see these approaches as necessary to food system work, community cohesiveness, and food system resiliency.

**Urban Agriculture.** Cities are using urban agriculture, which is the general term for market gardens, community gardens, home gardens, institutional gardens (school and hospital), and innovative urban food production like roof gardens, vertical gardens, and urban hydroponics. Urban agriculture also includes raising small animals for food.

Seattle celebrated the 40-year anniversary of their P-Patch Gardening Program that is managed by the city and its partner, the P-Patch Trust. There are over 80 P-Patch community gardens, and the city sees the goal of creating not just gardens, but “places to share love of gardening, cultivate friendships, strengthen neighborhoods, increase self-reliance, wildlife habitat, foster environmental awareness, relieve hunger, improve nutrition, and enjoy recreational and therapeutic opportunities” (Seattle.gov). The city recently received a FEMA Community Resilience Innovation Challenge grant to establish Community Emergency Hubs in selected P-Patch gardens. The hubs are being established to increase emergency preparedness with training, information, and shared resources among community members in case of an emergency.

San Francisco established an urban agriculture program under the Recreation and Park Department in 2013, which encourages urban agriculture on public and private land



throughout the city. The program is funded with over 3 million dollars for 2014, with private funders providing matching grants. Programs such as these encourage urban agriculture and assist citizens by removing barriers. In Portland, this was characterized as “to really get out of the way” of urban agriculture activities:

We found that where we really had the best market gardens and community gardens were our larger institutional properties, like the churches and the hospitals, the schools. So we really focused our code language to really get out of the way, remove the barriers for any kind of limits on that... (Gisler)

State laws can influence city zoning ordinances and encourage urban agriculture. The state of California has enacted legislation that allows for tax incentives for food production on fallow land, and San Francisco has adopted similar legislation:

San Francisco just passed, supervisor Phil Ting, endorsed and just spoke at the supervisors meeting, that allows property owners, to have... it is the city version of the Williamson act, which is the federal act, if you have property that is fallow, and goes into food production, your tax liability on that property decreased. It’s an incentive for landowners who in the past have been hesitant to allow community gardening on the property... (Farren).

Cities are making progress in not only allowing, but encouraging urban agriculture and sales of agricultural products. Updates to urban agriculture zoning policy allow urban agriculture and the sale of products throughout the three cities studied. The food system professionals interviewed saw many benefits to these policies and indicated that staff from many departments are embracing increased urban agriculture:

...we can't produce enough here obviously. I think that urban agriculture is a really great activity, and there is definitely a lot of movement around that, and it's great for a lot of reasons. I don't think the supply is ever going to be a lot, I mean it is for the people involved, but for the City is not an answer for production or for supply, but it is important for resiliency of communities" (Jones).

"This week on three different occasions I was brought proposals by other planners and the great thing is that they're all really thinking about this kind of work. And that's this week. I mean I can point to at least a half a dozen other instances of things that planners are working on that they thought, "Wow, there would be a really interesting food component here," or, "How do we get that involved?" (Cohen).

Although urban agriculture is not considered as a goal for supplying all food, it is seen as a key component in supplying food and building community. In addition to supplying food and offering economic development opportunities, community members' engagement in urban agriculture activities is seen as "important for resiliency of communities" (Jones).

**Scale of Production.** Scale of production illustrates the variety of activities, and the geographical scales of land used for production that contribute to resilient urban food systems. Although local food production is a goal, it is important to look at food production and distribution at a number of scales. It is not practical to produce enough food to feed a city within its boundaries. In Portland the urban growth boundary limits

space for urban gardening, but in doing so it protects peri-urban and rural agricultural areas that surround the city where much of the city's farming and food production takes place:

The major thing that we do to preserve food as far as resiliency would be the fact that we have prime agriculture land and we're not letting development move out there. We can do that in Portland because we've kept the urban growth boundary, so we have a readily available food source right in our valley (Gisler).

The state of California limits farmers' market sales to produce grown in California, and in San Francisco the food shed includes regional as well as state-wide grown produce:

But in a California farmers' market, only produce grown in California can be sold in farmers' markets. So it is not a limiting factor for us, but it's an important distinction. Within the Ferry Plaza Farmers' Market the average distance from farm to market is 106 miles. And if you take out those really strong outliers like Thermal and Siskiyou County (*in the south and north*) it's closer to mid 90s in mileage. When you look at a map it's really from the Bay Area out (Farren).

These research findings showed that a range of urban agriculture within and surrounding cities is important to feed the city; that expansion of food hubs to facilitate trade and economic development is a current food-system strategy; and that expanding the food system infrastructure with community and teaching kitchens and food and nutrition education and events is crucial for increasing food access.

Although this study did not specifically track SNAP usage, SNAP was mentioned many times in relation to extending benefits to recipients with matching SNAP dollars programs. They also mentioned programming in conjunction with other health and county programs to offer nutritional and culinary education to those enrolled in SNAP.

### **Indicators and Metrics—the Research Gap**

This study began with the assumption that data sets for food system indicators and metrics were available. This study’s review of cities’ food system documents and informant interviews confirmed that this is not the case. Initial research into 16 cities food systems resulted in numerous documents with research, plans, recommendations, and policies for creating and improving community food systems. However, cities are advancing with goals and recommendations and food-related initiatives without comprehensive baseline data, and stated goals include future tracking of data. Food system professionals interviewed for this study are consistent in saying they are continuing with projects and initiatives without quantitative data—they feel that they know what needs to be done in the short term.

Hatfield (2012), states that some metrics are not feasible for an average food policy program to track, due to expense or complication, and that causality may be difficult to establish, so research into program progress may pursue qualitative over quantitative performance metrics. Cities are using qualities that are not measurable quantitatively, using press releases, feedback, and relationship-building to build a comprehensive picture of progress. She states, “Even though development of these narrative-driven approaches is still in its infancy, it is easy to see how qualitative—yet

rigorous—methods might someday be used to complement and flesh out more conventional data to better measure progress. By exploring this option, food policy programs can advance program measurement and, ideally, reach a point where successes are more thoroughly noticed, publicized, and replicated” (p. 21).

In a 2012 report for the Portland, the Mayors Innovation Project stated that cities are working to develop food system-related policies, “...but there is currently no commonly-accepted set of metrics that can be used to determine whether a municipality generally or a certain program in particular is achieving its food system goals. These proposed metrics tend to fall into two categories – those that are imperfect in some way but for which data is available, and those that are more ideal, but for which data is not currently available" (Mayors Innovation Project Report, 2012, p. 1).

Vancouver, B.C. is in the forefront of food planning, yet they, too struggle with the lack of qualitative data with which to set goals and create tools to measure success. Vancouver ‘s goals are to increase local food assets by 50 per cent over 2010 levels by the year 2020, including number of food hubs; number of community kitchens; number of farmers markets; number of community produce stands; food composting facilities and community composting programs; number of community garden plots/orchards; and number of urban farms. Yet, Vancouver does not have reliable data with which to gauge success. Their 2013 food strategy document states, “In addition to measuring existing food assets, additional data gaps still exist in the food system. These data gaps will contribute to making realistic, pragmatic and meaningful decisions towards Vancouver’s Food Strategy goals. Information to support this element of monitoring and evaluation

will be developed as actions are implemented” (Vancouver-What Feeds Us, 2013, p. 129-130).

This research found many food-related documents with commendable goals to increase urban agriculture, or to increase the percentage of local food consumed, but with inconsistent data to measure success in those areas. The informants in this study confirmed this dilemma—responses were unanimous—cities are tracking some data, but there is little consistency between cities:

Depends on how you want to define it. It doesn't exist. ...all of the individual gardening that people do in their backyards, or selling it under the radar... we haven't, it's impossible, I think it's impossible to do, and we've talked about using GIS... If someone tells you they have those numbers (*for total land in urban agriculture*) they are lying. Another thing you see too, is when people talk about the percentage of local food that people eat, and generally, I'm sorry, but those are usually made up numbers as well. Most of the time, the only data that is out there is at the county level. And part of it, as you allude to, it's sort of a nascent movement, and people haven't done a lot of that work, but the data that exists is from USDA level, or most of it is broken down to county level, but at a city level you don't see it (Cohen).

Where there are specific programs, food-related statistics tend to be tracked: So when it's programmatic it's easier to get those metrics. When it's broad, cities are very challenged to do that work. They're challenged in a lot of different ways. Part of it is that the ideal would be in the census, if there were some things like do

you garden? So it's very difficult to do the metrics and to measure success and impacts, because cities don't tend to be repositories of data collection.

Because I say to people all the time here, "How we going to know when we have a strong regional food system?" They have all these goals and these underlying stuff and there's ton going on, so are we there? Aren't we there? When do we know when we're close? When do we know what's still needed?

I've talked to numerous sustainability directors who are having the same issue around sustainability, you know in terms of their indicators for being more sustainable and you know a lot of cities developed indicators. But it's hard to get the resources needed to actually do that measure and that work and it's a problem (Shulman).

I definitely know that the planning department does not track that information (*amount of urban agriculture*) and my guess is you could find some rough numbers about the urban ag questions through our new urban agriculture program office... and she may have access to rough numbers like that. Not necessarily local food eaten by San Francisco residents; I mean, that's definitely not tracked. But the acreage and production in San Francisco and the number of community gardens, she certainly would have that information. ...it would be just increasing access to local food. I mean, that would take a lot to try to track, especially for a big city like San Francisco (Sokolove).

Because there is a lack of quantitative data like percent of land under cultivation, or percent of local food consumed, the informants in this study also rely on qualitative data, and on their experience and knowledge working in the food system. This is an area that cities may be able to use to create goals and track success. Cities are all grappling with the same food-related issues, and are moving forward with programming:

...but my contention during all that was that even if I knew (*food-related data*) we know what the problems are. And even if I knew some of these numbers that are associated with some of these problems, it really wouldn't change my work strategically or we wouldn't be focusing on other things. Even if we knew what those numbers were and those numbers to a great extent were either difficult to get or again were just proxies. So in some ways I totally get that and there was this need for wanting to have those... you know politicians love it too. I know what gets measured gets managed and all that. But at the same time I'm not sure that they're all that useful. I mean look at all the reports that you've seen from municipalities or regional or state on food systems and my contention is we could take Seattle's and I could put Portland's name in there and while the numbers may be a little bit different than the communities and the number of neighborhood organizations may be a little bit different, it's still the same results (Cohen).

That's why we really try to break down a framework for food security that included much more complex understanding of the needs of the vulnerable population. We have colleagues that also work on, from a public health point of



view, what are indicators for planning, around health, and when it comes to the food indicators it's just not as easy, because it's very programmatic, and it's not like built environment or structure... you know, you can't plan for everything (Jones).

You know there's more qualitative judgment going on based on real experience. It's not invalid, but to be able to measure that and to be able to do it in any – it's very difficult.

Ripple-effect mapping is the methodology they want to use for that, which might be a good way to go for this kind of measurement in terms of really understanding more. Because there are so many different ways in which it depends on what are you looking at? Are you looking at how our community garden programs have developed more social cohesion? Are you looking at how many more people got exercise? There are just so many things.

Well I think part of it is to figure out what is the right methodology for the metric? So for example, there is some really amazing work going on in tribes right now in the Northwest to reclaim kind of their indigenous food systems and to really look at – so it's about culture and reclaiming culture along with relearning their indigenous foods, along with improving their health outcomes, which is part of what's driving it.

What they're talking about is kind of the standard. Like one of the people really driving this is from one of the tribes and is now a Ph.D. student at

University of Washington and she was saying they typical kind of metrics you would use for this just don't work for them. It's based on stories and it's based on just really different ways of interacting. I guess and I'm not an academic and so I can't even figure out what then do you do instead? She was talking about how even the kind of standard ways you might consider using measurement and evaluation don't work within their cultural context. So how do you do it differently? There are other cultural contexts. I mean that's the challenge for people who are like yourself more academically oriented to try to figure that out. But I do think it's a need immediately actually. People are having to figure out for grants even how do they say what the outcomes were? (Shulman).

So the way that we will be measuring success (*of the Fresh Bucks program*) at the regional level will be looking at the variety of organizations that have come together, the types of activities that they're doing, and then the increase in low-income shoppers at the farmers markets and the dollars spent (Kinney).

**Funding.** Grants and other funding applications require some level of data, and data is useful for evaluating the success of funded projects. As indicated in the previous section on indicators and metrics, it is necessary to supply data to funders, and to contribute to reports and policy that drive food system work forward. There was also mention of specific grant opportunities that were pursued, showing that the types of grants being offered can determine the types of projects that cities engage in.

During the interview coding and analysis, the concept of funding came up frequently. There was not time in this study to investigate exactly what type of funding is being used, but this is an area that warrants further research to inform future funding efforts. It was also indicated that funding for successful projects is used to leverage ongoing funding from other sources.

Interview questions about federal funding for the Farmers' Market Promotion Program (FMPP) showed mixed results, but this may be better understood by further research. The San Francisco food system director stated that the grants were too small and not a focus for funding; while the director of the Washington State Farmers' Market Association has been using two, two-year grants to promote the state's markets, and to promote and expand the benefits to SNAP beneficiaries. FMPP funded projects are being leveraged to gain additional funds from other organizations to further the Associations' programming.

This section looked at the research gap where measurements for food-related indicators and metrics are not being adequately tracked. The findings did show that food system professionals are moving forward with programs and policy in spite of this gap. When cities have developed programs like city-managed community garden programs there tend to be more data tracked. Health initiatives also seem to have more robust data research and management. The section included a short description of the findings related to grants and other funding for food system work. This is an area that could benefit by more research into exactly what funding is being used in order to increase funding possibilities.

If important food-related data are not being tracked, methods for evaluating progress over time towards goals should be developed. Informants indicated that informal research is being done and individuals are making conclusions based on that research. This seems to be an area that can benefit from more robust qualitative research methods and techniques. Further research into the methods being used are warranted—for example, what research methods are being explored to work with the Native American tribes mentioned in the Seattle research?

Asset-Based Community Development (ABCD), or the strength-based approach that was developed in 1993 by Kretzmann & McKnight could be useful in evaluating cities' food system assets and needs. In contrast with focusing on a communities' needs, deficiencies, and problems, research into city food system capacities and assets could be a way to determine information on existing levels of urban agriculture and local food that are not available as quantitative data. Ennis and West (2010) build upon Kretzmann and McKnight's research by suggesting the use of social network theory and analysis to overcome the "lack of evidence base, lack of theoretical depth, and lack of consideration for the macro level causes of disempowerment" in asset based community development. They propose integrating social network theory an analysis into ABCD.

Another way of approaching city food systems information is by mapping assets, which Aberley describes as a "visual language as a tool to give a voice to regional planning (1993). Aberley suggests that bioregional mapping is the most familiar way of looking at our environment. Because of the emphasis on a regional rather than local scale for food production, research and gathering food-related data from a regional scale makes

more sense than only looking inside city boundaries for food assets. Map-based research has been done with indigenous people to better understand, promote, and protect assets (Aberley, 1993).

New and ongoing qualitative research is being conducted around issues of food and food security from a health background, and may provide models for research design (Power, 2008; Pridgeon & Whitehead, 2013; Schindler, Kiszko, Abrams, Islam & Ebel, 2012). It also may be helpful to engage in qualitative research and making the findings accessible to non-academics or practitioners (Sallee & Flood, 2012). These studies may offer methods that are compatible with city food system research.

### **Food System Resiliency**

The purpose of this research was to determine planning approaches that strengthen food systems, and ultimately, urban resiliency. It proposed that by understanding food system planning in this context, new planning approaches could be developed to strengthen urban food systems.

The study showed that resiliency, or the ability to bounce back after disturbance, is not a central, stated goal of food systems professionals but that resiliency and sustainability are used almost interchangeably at times. Sustainability remains a goal of cities and food systems professionals, and the difference between the two should be explored, and food systems assessed in relation to specific goals.

An illustration of how the concept of resiliency is used with little depth is contained in the Delaware Valley Regional Planning Commission 2013 Annual Report. The cover is titled “Resilience” and the introduction states, “However you define

‘resiliency,’ the bottom line is the same.” Besides one other mention of building resiliency, the report does not state how the region is building resiliency or what factors contribute to resiliency.

The Mayors Innovation Project report for Portland stated that sustainability has been the aim for planners and policy makers for decades, and that resiliency has only recently been cited as a goal for cities. They state that the two concepts differ, and that a sustainable food system has a different aim than a resilient food system. Sustainability focuses on meeting current needs without jeopardizing the resources that make up a food system. A resilient food system can respond to shocks without crossing a threshold while a system that lacks resilience “will more easily top over a threshold,” and that resilience shifts attention from purely growth and efficiency to needed recovery and flexibility.” (2013, p. 3). The report further states that the shift to resiliency in city goals is reflected in the understanding that trends such as climate change and resource scarcity are likely to result in sudden shocks. These shocks have the potential to “radically alter how humans are able to grow, distribute, and consume food” (2012, p. 3). In order to increase food system resiliency cities must understand how their goals are set to sustainability, resiliency, or another measure.

In this study, possibly because of lack of clarity about the concept of resilience and how cities are creating greater resiliency, it was characterized as a buzzword, and a catchphrase, and mentioned as a new way of looking at sustainability. In response to the question of how their cities were looking at resiliency the responses were similar—resiliency is a concept that is not being clearly addressed in the cities:

You know I think resiliency, about two years ago or something, became sort of this buzzword. And when we were asked by the administration at that time to look at some of those areas that you and I discussed... we kind of considered resiliency (Cohen).

I would say the city as a whole... I would not say has been considering resiliency much. I'd say that the City of Seattle is much more driven by sustainability and what goes into that and how that's been defined and not resiliency. But the story of how we even came to the local food action initiative actually comes out of a resilience frame.

So I started to really do some research around resilience and at that point, which isn't all that long ago really, very difficult to find a lot of research other than some books that were kind of more international in nature, it wasn't so common. In the last five years or so it's really changed. So in that I realized that we needed to get beyond kind of just talking about sustainability and as long-term goals... are we going to have healthy communities and healthy earth and healthy people and everything that goes with that and really start thinking about resilience (Shulman).

So I mean resiliency is just this huge catchall phrase now, kind of like sustainability in some ways (Gisler).

I definitely think that comes up quite a bit. I mean, I think the word resiliency is sort of the new sustainability. It's more of a buzzword now than it's ever been in my career. So people are talking about resiliency... (Sokolove)

Resilience is a concept that is being used to describe cities' goals of being able to withstand disturbance, but mostly in relation to disaster planning and in response to current and future expected challenges due to climate change events. In this context, overall resiliency of the food system, not just providing food after a disaster, is starting to emerge:

It is starting to come up more—resiliency. It is starting to come up more in the context of, you know, people's planning for disaster... it was coming up in conversations yesterday, there is work on neighborhood-level resiliency. So I haven't wrapped my head around what that means yet, it would have to be... there is individual level resiliency, and then there is system level, and some of my colleagues are looking at community –level resiliency, and climate adaptation and climate change, or a heat event, or flood event, or cold spell event—any of these kinds of things. I'm thinking about it more in terms of a disaster event and food. It's a growing area from the other perspective in terms of just regional work on food. We're connecting and more emergency preparedness, I mean it works both ways, right? Food security definition is starting to broaden to include emergency preparedness and not just kind of food access and who gets to eat... (Jones).



But we recognized that really resiliency is a critical component of all that and in fact it's a bigger frame than just the recovery piece. So how do we take our recovery work and also do some work out in the community around resilience? So part of the funding for this two-year effort is to figure out how best to do that, and they haven't really decided that yet, but that resilience piece is part of that effort (Shulman).

There is a program, I think it's in Vancouver where they have neighborhood food purveyors, nonprofits that have volunteered – they get some funding associated with it, but nonprofits strategically placed in all the neighborhoods throughout Vancouver, and they're sort of designated as the food distribution center in case of an emergency, and I think that's a pretty interesting concept, too, to just have these centers predesignated so that people know where to go if there's a real problem (Sokolove).

**Economic Resiliency.** The idea that food systems work can contribute to economic resiliency was a common theme in this research. It showed that cities are looking at food systems as contributing to economic resiliency by supporting food hubs that bring together producers with local-level distributors, or convening food-related businesses as economic development strategy. Cities are encouraging individuals and neighborhoods to increase urban agriculture in community gardens, animal husbandry, and small-scale neighborhood farm stands. These are some of the comments that illustrate this point:

And after this whole initiative... we really said phase two was going to be food and economic development, and food access. We need to work more on that.

Well, when I got the call from the Mayor's office and they said we want to do this grant, vertical farming and jobs, and I said, "why don't we make it broader, and look at food systems and economic development."

The report was really looking at food sector innovations and then a way to have the city try to estimate what is the best use for their own funds for infrastructure and innovations, and return in terms of jobs and good jobs.

We call it a food enterprise zone, or how do we cluster infrastructure for food so that there's synergy for food entrepreneurs, the places where the jobs are coming out of the food sector, the service sector, but really more the local food businesses, food manufacturing... (Jones).

So I guess the other thing that we're starting to track, and something that's a focus of mine, is looking at food businesses in San Francisco – food manufacturing, processing, distribution businesses, and to me, that is a lot about resiliency, and are we supporting local food manufacturers here in the city, and so that's another metric that we do track, and that's definitely starting to get a lot more attention now.

If we do it right, the more food businesses that are here, hopefully, the more we can support our local farms and our local wholesale produce market, and also, a lot of these jobs are pretty high-paying jobs, and it's a low barrier to entry,

and if we can create those jobs for people, we can really start employing people, and frankly, the key to solving hunger is getting people jobs and getting people the resources that they need, so hopefully, it'll have, in the end, multiple benefits (Sokolove).

We estimate that (*the James Beard Public Market*) we'll increase the volume of food sales of primarily local foods by over 20 million dollars a year within the Portland area. And that leads to not only job creation within the market of about 250 new jobs from locally-owned businesses, but our preliminary economic analysis shows that it would increase rural Oregon and southwest Washington employment by over 100 jobs.

And we're underestimating right now the tourist impact on the market, but we know from Portland's farmer's markets and others that tourists can purchase up to 20 percent of total sales within a market.

And so that's again something that obviously the market's agenda is to be able to secure more city funding directly for the market but to do it within the context of a larger group that's looking to help the city create a much more progressive food as economic development strategy (Paul).

### **Urban Poverty and Food Security**

Despite the work being done to increase food access, urban poverty and food insecurity remains a major challenge to feeding citizens in U.S. cities. The term "food desert" is both used and contested. It is used in San Francisco because it is an accepted

and understandable term to describe an urban area underserved by supermarkets and fresh, healthy, and culturally appropriate food. In Portland it is contested as a simplistic way of describing the geographical reality that cannot be solved by just adding supermarkets or converting liquor stores into food markets. Each neighborhood has its unique qualities, and solving the problem of food access and affordability is different for each one.

*(In response to use of the term "Food Desert")* We've gotten away from that shorthand and I will never use that word. Just because of, it's sort of the equity connotations from the whole Redmond approach, which I totally understand. No, we don't. We really don't. We have some areas that are a little bit more, I would say underserved than others but that totally makes sense because of the income and education level of those areas and the density. So we did those maps ourselves and we looked at, "Okay, how are going to be able to entice grocery stores to site in those neighborhoods," and you quickly realize that you're asking a business to site in an area that's totally antithetical to their business model.

And even when people do live – they haven't been able to see that there has been an uptake in fruits and vegetables when people live closer to a grocery store. So some of these things that we want to put out there as emblematic of the work that we do or this is the criteria that will make things better, a lot of times the issues are so much more multi-layered that we're really not getting to it.

...for so many people that was really important whether you're a half a mile from a grocery store. And I think what we learned over the years is that we

can live next to the grocery store but if you can't afford it, it doesn't mean anything (Cohen).

This could be a grocery store, great, but if you've got poor people that can't buy the apple, you don't have food access for them. They are not food secure no matter if Whole Foods is across the street from them or not, right? (Jones).

Food security and food access has more to do with not being able to afford food than proximity:

...it all has to do with living wage jobs, working wage jobs, that so many of these questions that we wrestle with in regard to access and hunger, and this fact that we're going to solve hunger is a little bit crazy to me. But the end result, or the basic strategy is how do we provide working wage jobs – living wage –you know to folks because we wouldn't have these questions in regard to access if everyone had an equal job. So really a lot of it comes down to that. It comes down to poverty. I really does (Cohen).

It came as a shock that 25% of our population is living below 200% of poverty. In a place like this, 200% of poverty is around \$22,000 a year or a little bit less. How do you live on that? A one-bedroom in the Castro is now renting for \$2,500 or \$3,000, right? That came as a shock to people (Jones).

## **Chapter Summary**

This chapter portrayed the knowledge and experience of nine food system professionals in Portland, San Francisco, and Seattle. The responses illustrate the comprehensive way that food system work is being approached, and that the work involves multiple offices and departments in coordination with non-profit organizations and citizen groups.

As urban planning departments address issues of food planning they are doing so with many other departments and offices, plus county and state-wide organizations. It is important for all involved in food system work to take an interdisciplinary approach, because food production, distribution, consumption, and waste affects all areas of urban planning and development.

Although this research was limited in scope, interviewing three informants in each of the three cities, those informants provided consistent information about current issues in food system planning—cities are taking progressive and interdisciplinary steps to increase food security and resiliency by improving food systems for current and future populations.

The following chapter will revisit the research questions and present the study's conclusions and recommendations.

## CHAPTER 6

### CONCLUSIONS AND RECOMMENDATIONS

#### Overview

The purpose of this embedded, multiple-case study was to understand planning approaches that strengthen food systems, and ultimately, urban resiliency. It proposed that by understanding food system planning in this context, new planning approaches can be developed to strengthen urban food systems. The first research question was answered through primary and secondary research into the food systems of 16 U.S. cities. Research questions 2-4 were answered through unstructured and semi-structured interviews. The conclusions follow the research questions and findings in four areas.

#### **Policy, Planning, and Community Resources Used to Create New Community Food Systems**

The first finding explained how food system work is being done in cities, how it is organized, and the levels of interdisciplinarity and leadership that are involved.

**Understanding Food System Organization, Interdisciplinarity, and Leadership.** Food systems work is led and housed within different departments within city and county organizations. This study found food systems departments and initiatives housed within with sustainability, health, economic development, social development, planning, and the Mayor's office. Where food systems departments or initiatives are housed depends on the orientation of individuals involved in the initial development, and what the goals are for food systems work. For example, in San Francisco the food systems department is housed in Health, which is the basis for the ongoing work of the

founding and current food systems director, and a strong, current focus is on research and improving food access for the city's vulnerable populations. Portland's food systems planning and policy director is housed in the Bureau of Planning and Sustainability, is not a planner, and comes from a sustainability background. Seattle's food system initiative, which is not yet a department, was purposefully created in Sustainability to facilitate interdisciplinary planning.

Planning for resilient food systems is not purely a function of urban planning staff and practitioners. In fact, all of the cities showed very strong interdisciplinary working relationships around food system work. In San Francisco, every department was engaged in food system research and planning, with representatives reporting to the food system director. Portland engages staff in multiple departments including health, transportation, solid waste, recycling, energy, solar and green building—all practices that affect and are affected by food systems. In Seattle the Food Interdisciplinary Team is a self-forming group that actually re-formed after being disbanded due to a procedural error, and is once again working together on an array of food-related initiatives.

This study found that Mayoral and other executive leadership is a key component of advancing food system work. Cities with strong leadership around food progress despite limited funding. In San Francisco a 2009 proclamation promoting healthy and sustainable food by then-Mayor Gavin Newsom still guides food system work and is considered a policy directive by those doing the work. Seattle's 2012 establishment of a food systems initiative was driven by former City Council Member Richard Conlin and his Senior Legislative Aide Phyllis Shulman. Shulman took the lead and worked



tirelessly to create the initiative and hire the first Food Systems Advisor. Portland has been on the forefront of progressive, sustainable planning for decades, and the perception is that government leadership as a whole believe in and back food system work.

Informants mentioned that as soon as food systems departments or initiatives were established the public showed tremendous interest and participation in food system programming. Given the popularity of food system programming, a change in leadership is not likely to diminish the progress that food system professionals are making.

**Developing Plans that Translate into Policy.** The next finding was that creating strong policies for food systems is not a straightforward process, and that cities are moving forward using an inconsistent set of documents that consist of plans, recommendations, proclamations, initiatives, and policies.

Planning and policy related to food systems work is being created within a new paradigm for planning professionals. There quite a variation of comments by informants about the process and need for strong, stated policies in documents like comprehensive plans for food system work. The current increase and strong interest in food systems work in U.S. cities is really a phenomenon. In planning it is difficult to find a comparable movement that has made so much progress in such a short amount of time. In this study, the first major city to establish a food systems department did so in 2002—just 12 years ago. The scan of 16 cities showed that all of them have established food systems planning and policy. Although there is some variation in intensity most are taking the challenge improving their food systems seriously.

One result is the wide range of plans, recommendations, research, and policies in U.S. cities, and a range of how food policy is being interpreted and implemented. One reason for this may be the lack of consistent data with which to plan goals and measure success (covered in this chapter under Indicators and Metrics). This study's findings show that food system professionals are using various documents for establishing policy. San Francisco still looks to the Mayor's 2009 Healthy and Sustainable Food Proclamation; Portland looks to their 2009 Climate Action Plan that continues to be updated, and the Portland Plan; and Seattle looks to the 2012 Food Action Initiative. This list is probably simplistic, but reflects the sentiments of the professionals interviewed. In reality, there are likely many more plans and initiatives guiding food system work, which adds to the complexity of this issue. Looking forward, as food system work becomes more established, it is likely that cities will develop more consistent frameworks within which food system work is conducted.

**Food Policy Councils.** The next finding suggests that cities that do not currently have a food policy council should try to understand what role the council should play, what power it should have, and if small working groups may better suit the needs of each unique city.

Food Policy Councils are being used by cities to guide and/or implement food system work. They can be an important tool to set food system planning agendas. At least one FPC, the Portland-Multnomah County FPC, has been disbanded. FPCs have different levels of authority depending on how they have been established and can be involved in

programming, or have the ability to guide policy. FPCs should have representation from all sectors that produce, manage, distribute, process, sell, consume, or dispose of food.

This study found that as Portland's FPC was winding down its work, a task force was established to advise on the update of the Urban Food Zoning Code Update which set the new, progressive policy for urban agriculture. Convening this group of interested and involved individuals for a specific project, and for a limited amount of time proved to be a success.

### **Indicators and Metrics**

This major finding was that cities do not have comparable sets of data to use for setting goals or evaluating progress in food system work.

As has been stated in earlier chapters, at the onset of this research it was expected that data sets for food system indicators and metrics would be available. Instead, research including document review and interviews showed that this is not the case. To quote a report for Portland by the Mayors' Innovation Project, "These proposed metrics tend to fall into two categories – those that are imperfect in some way but for which data is available, and those that are more ideal, but for which data is not currently available." Data is more readily available for programmatic activities like city-managed community gardening programs. Studies into health and food-related projects tend to have more data available, and this study identified some current research in the Analysis section that may provide qualitative or mixed methods for conducting food system-related research and collecting data. There is a "catch-22" where goals are identified in food plans and recommendations, but the goals are not backed up by quantitative data. In fact, this study

found plans with stated goals, with one goal being to gather data with which to measure success. Portland partnered with the Mayors Innovation Project in 2012 to identify goals that are being tracked, and goals that were deemed important for further research.

#### Appendix K: Portland Food Systems Goals.

Informants stated that tracking data on indicators such as amount of land in urban agriculture is just not possible with current resources. Food system professionals are going forward with similar initiatives in U.S. cities, and it was stated that they “just know” what next steps need to be taken.

**Funding Supports Food System Work.** This finding was that a wide range of funding is making many food system projects possible. The study did not end with a comprehensive understanding of what those funding sources were.

This research found many mentions of local, county, state, and federal funding, plus funding from private and non-profit groups. Funding from various sources contributes to city-wide initiatives and research, educational programming, urban agriculture projects, research, farmers markets, and food-related community events, among other things. There was also mention of funding to expand Supplemental Nutrition Assistance Program (SNAP) benefits to recipients by increasing the value of SNAP when purchasing fresh fruits and vegetables, and other food at farmers’ markets.

Funding can be used to shape the food system; in Seattle, measures have been taken that limit the type of food that can be purchased for city-funded child and senior food programs. A program has been established that processes orders from the programs, purchases fresh fruits and vegetables from regional farmers, and when orders are

delivered to a central “food aggregator” it is sorted and delivered to the program sites. This is an example of how city policy supports farmers, and provides affordable and nutritious food to the city’s vulnerable populations.

The Farmers’ Market Promotion Program (FMPP) provides competitive grants for farmers’ market promotion, education, and implementation of SNAP electronic terminals. All of the cities in this study have received grants, and although small they have contributed to the growth of farmers’ markets, and to the availability of fresh fruits and vegetables or vulnerable populations who receive SNAP benefits.

A conclusion can be drawn that funding is important for many parts of improving cities’ food systems, but that this research study was not designed to determine the entire range of ongoing funding required.

### **Stakeholders and Approaches to Creating New Community Food Systems**

**Urban Agriculture.** This finding showed that urban agriculture and related activities are essential for improving cities’ food systems. The findings showed that in addition to increasing the supply of food, urban agricultural activities create community cohesion which contributes to increased resiliency as people work together, keep an eye out for each other, and work together to build stronger neighborhoods and communities.

The research question related to this section led to important findings about what approaches are being used, how they are used, and why they are helping to improve food systems. Although “stakeholders” was included in the question, there were no additional findings about who is doing food system work and the findings were related to food system approaches.

Updates to urban agriculture zoning policies are at the forefront of work being accomplished by urban planners and other food system professionals. Barriers are coming down that prohibited gardening and agriculture, animal husbandry, processing home-grown food for sale, and the sale of home-grown food from neighborhood farm stands. In many cities small urban agricultural plots that produce food for commercial food for sale are encouraged instead of prohibited, and cooperative food buying organizations can operate in residential areas. It should be noted that some urban agriculture zoning policies include regulations that address hours, vehicle traffic, and/or health and safety issues in order to limit negative impacts to neighborhoods. This progressiveness in city planning is becoming the new normal in U.S. cities.

**Scale of Production and Food Related Activities.** This finding showed that the concept of local food is not considered as the best or only option to provide food for cities. The term Scale of Production was used to identify concepts related to agricultural scale, and different types of food-related activities taking place or planned in cities. Cities are encouraging local production of food to increase food security and as an economic development strategy. However, cities are not proposing that local food will feed their cities. They recognize that agriculture at a range of scales and geographical locations is essential for food systems to operate effectively, including food grown and processed within urban boundaries, in the surrounding, peri-urban area, regionally, statewide, and imported from the U.S. and globally. This study found that there is a strong push to supply cities from urban, peri-urban, and the surrounding region.

Portland's growth boundary limits urban agriculture within the city because of strong competition with other types of development. However, by limiting growth within this boundary, peri-urban and rural agricultural land is preserved and food can be produced adjacent and near the city.

**Economic Development Strategy for Food System Resiliency.** This finding was that cities are using food as an economic development strategy. This is in contrast to cities hands off approach that assumed food provisioning was being taken care of by the private sector.

In addition to agriculture, food production is being promoted in cities as an economic development strategy. Cities see the value of supporting and organizing food-related businesses and are investing in their success. Informants in this study were very supportive of food-related education and events that help people of all socio-economic levels learn to prepare the fresh food that is available. Educational programming for vulnerable populations like youth, seniors, immigrants, and ethnic groups are expected to help increase access to healthy and nutritious foods for these groups.

### **Increased Food System Resiliency and Food Security**

This finding was that while cities are exploring the concept of resiliency, it has not been clearly articulated as a food systems goal. Although informants understand the definition and importance of resiliency, sustainability remains a strong goal. The concept of resiliency was most often discussed in the context of disaster preparedness and climate change.

This finding showed that the concept of resiliency is coming up more in the last few years, and that it was important to create a resiliency food system, but there was no mention of a comprehensive plan to create a resilient food system. Resiliency was termed a “buzzword,” and the study found that resiliency and sustainability are used almost interchangeably at times. In order to set goals there needs to be a clear understanding of the differences between sustainability and resiliency, although cities can include goals for them both.

**Application of Panarchy Theory.** This finding showed that there was no recognition of the term “Panarchy” but when the concept was described to informants they concurred that it was in line with their food system work. There were statements that the current state of the food system is not sustainable and that their goals are to recreate a system that is consistent with community food systems. The food systems professionals are working toward food systems for their cities that are good for the environment and the economy, are socially just, and provide healthy, nutritious, and culturally appropriate food.

**Food Insecurity is Pervasive.** This study found that the biggest challenge to food systems professionals is urban poverty and food insecurity for their cities’ vulnerable populations. They are using the resources available to them including research and planning, creating policies, working in interdisciplinary environments, and finding funding for project and initiatives. They are encouraging urban agriculture and related activities, and educational programming and events to inform and involve citizens. Overall urban poverty was cited as a challenge to food access for vulnerable populations,



and they see their work as contributing to solve this problem. This finding showed that even the most progressive cities with forward-thinking food system professionals and governments continue to grapple with this problem.

### **Recommendations for Urban Planners and other Food System Professionals**

This last section offers recommendations based on the research findings, analysis, and conclusions. The purpose of this study was to understand planning approaches that strengthen food systems, and ultimately, urban resiliency. It proposed that by understanding food system planning in this context, new planning approaches can be developed to strengthen urban food systems. These recommendations come from an urban planning standpoint, but are offered to planners and other food systems professionals who are exploring ways to either begin planning for food systems work, or to improve an existing food systems programming and policy. Overall, it is recommended that cities create a resilient food system framework that will guide planning and policy. This research covered a broad range of concepts that can be explored individually or as a set of recommendations.

#### **Cities Creating New Food System Departments:**

1. To evaluate a city's food system, a first step is to research other cities' websites and review their food system-related documents including plans, recommendations, and policies. This tells how other cities are portraying their food systems. A lot of work has already been done and can provide guidance and examples of a food system framework for other cities.

2. If a community food assessment has not been completed, or is out of date, this is a good start to assessing a city's strengths and needs. There are existing assessments and community needs assessments to use as models.
3. Look at the existing organization and determine what departments are best equipped to lead food system work. Investigate how the department uses research and metrics to evaluate goals and progress. Planners may be able to influence where food system work is housed due to the inherent disciplinary of urban planning departments. Alternately, areas with high unemployment may want to house the department in Economic Development. A city with strong mayoral support may house it in that office. Sustainability offices are chosen if a strong interdisciplinary approach is warranted.

**Strengthening Food System Planning:**

1. Evaluate all departments and programs to be sure that every department that affects food, and that is affected by the food system is included. Include county offices if applicable. Identify staff who are interested in interdisciplinary food system planning and policy making.
2. Engage Mayoral or other executive leadership; educate leaders about the need for food system work and the work that is being done throughout U.S. cities.
3. Research into other cities plans and policies provides a strong base for planning because so much work has been done. Create policies based on stated goals. Policies may be included in comprehensive plans, or as shown in

this study, a strong climate change and mitigation policy may be the best choice for cities with climate change/greenhouse gas goals.

**Food Policy Councils and Working Groups:**

1. Consider development of a food policy council, or other stakeholder group.

The group may be a working group for food initiatives and projects, or a group that recommends food system policy, or something in between.

Research into existing FPCs will provide background information.

2. As goals are set consider smaller, limited duration task forces with subject experts and engaged community members to advise on program and policy formation.

**Establishing Indicators and Goals:**

1. In order to set goals, food system indicators and metrics should be identified.

Indicators and metrics are also helpful to determine food system programming success. In the absence of indicators and metrics consider other ways of gauging food system status including qualitative and mixed methods research.

2. Collaborate with other cities and to develop a research and data gathering system that is consistent with shared goals. Recognize that this process takes resources that may or may not be available.

**Increased Funding for Food System Planning:**

1. Use available resources to research funding opportunities from every level—city, county, state, federal, private, and non-profit foundations. Calculate the human resources needed to apply for grants and funding before committing to

an application. Track funding opportunities on an ongoing basis and consider funding for projects that hadn't been considered before. Consider partnering with cities for larger projects.

2. Leverage existing program funding to gain matching funds; work with farmers' markets and invest in vulnerable populations by offering matching dollars for SNAP purchases of fresh fruits and vegetables and other healthy foods.

**Urban Agriculture:**

1. Understand existing urban agriculture zoning and policies; become familiar with steps that other progressive cities are taking to remove barriers to urban agriculture of all kinds; and update policies to promote food production, economic development, and community cohesion. Promote economic development at the individual level by allowing food production and sales.
2. Understand the geographical scales at which urban, peri-urban, and rural agriculture is taking place. While encouraging urban agriculture has many benefits, so does sourcing regional food. Protect peri-urban and regional agricultural land from development with inter-agency coordination.

**Education, Events, and Increased Healthy Food Options:**

1. Evaluate existing city funding for food-related programs and determine if restrictions can be placed that require fresh food, fruits and vegetables, instead of institutional processed food. Engage local farmers and producers to increase healthy food options for institutional food.

2. Involve all sectors of the community in educational and community events that inform and involve people in food-related activities. Use existing facilities for food education and events, considering all available public infrastructure (kitchens, community centers, schools) available for food education, production, and education.
3. Focus on youth to provide food-related educational activities. Replicate successful programs that involve the school system to teach nutritional and culinary literacy, that pair children with grandparents to pass on traditional cooking, or bring together immigrant or ethnic groups to share indigenous food knowledge.

**Increasing Urban Food and Economic Resiliency:**

1. Invest in research and support for food hubs, commissaries, aggregation centers, wholesale markets, and other opportunities to increase food-business economic development and increased food system resiliency.
2. Invest the time and resources needed to understand how sustainability and resiliency apply to food systems. Determine food system goals based on this knowledge. Consider the food system as central to disaster planning—not just how to feed people after a disaster, but how people can stay supplied with food during a disaster. This should be the standard for food system resiliency.
3. Consider Panarchy theory throughout the process, and build a resilient community food system framework.

Creating this framework and building a community-level network of resources, organizations, and approaches will serve all citizens and contribute to over-all community resiliency.

### **Contribution to Urban Food Systems and Resiliency Planning**

This study contributes to the body of knowledge of food system planning and policy in the following ways: It provides a strategy for evaluating and measuring existing urban food systems. It adds to the knowledge-base necessary to advance community food system resiliency in urban planning, including theoretical knowledge that will contribute to the practice of creating and improving community food systems within urban environments. It provides policy guidance to improve community food systems using inputs from differing scales of community resources. It will assist urban planners and policy makers to develop new and innovative food systems.

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APPENDIX A  
OVERVIEW OF INFORMATION NEEDED

Overall Research Questions: What is the relationship between CFS and urban resiliency? How can Community Food Systems be strengthened to become more resilient, thereby contributing to overall urban resiliency?			
<i>Research Questions</i>	<i>Information Needed/ What the Researcher Wants to Know</i>	<i>Specific Research Questions</i>	<i>Method</i>
1) What is the context of the current landscape of CFS within the most sustainable U.S. cities?	What does the landscape of CFS look like in U.S. cities?	What types of programming are cities doing in relationship to the identified food system approaches? (16 cities) Contextual	Primary and secondary document research
2) Who are the stakeholders and what approaches are they using to create new community food systems?	Who are the stakeholders, and what approaches are they using? How are they using FMS, CSAs, urban agriculture, local food, community kitchens, co-ops, etc. in each city?	Who are the stakeholders and what are the approaches being used to create or improve community food systems? (3 cities) Demographic, Perceptual	Primary and secondary document research, interview
3) What policy, planning, and community resources are being used to create new community food systems?	What are the resources used to support CFS?	Determine the resources used at three levels-federal, city, and community and how they contribute to CFS (3 cities) Demographic, Perceptual	Primary and secondary document research, interview
4) How are the policy, planning, and community resources contributing to food system resiliency?	How do the resources contribute to more resilient CFS?	What are cities doing to increase resiliency? How do the approaches and resources that are the focus of this research contribute to greater urban resiliency? Perceptual	Interview, synthesis & analysis

APPENDIX B

INTERVIEW INFORMANTS

PORTLAND CONTACT	POSITION	CONTACT INFO	INTERVIEW
Steve Cohen	Manager, Food Policy and Programs, Bureau of Planning & Sustainability	Steve.cohen@portlandoregon.gov; 503-823-4225	Phone semi-structured interview, audio recorded, transcribed, coded
Julia Gisler	City Planning Contact	Julia.gisler@portlandoregon.gov; 503-823-7624	Phone semi-structured interview, audio recorded, transcribed, coded
Ron Paul	Exec Director, James Beard Public Market Project	ron@rpaulconsulting.com; 503.226.7208	In person unstructured interview, notes taken; Phone semi-structured interview, audio recorded, transcribed, coded
Monica Cuneo	Past Chair, Food Policy Council, Portland Multnomah FPC	Linked In & Mkcuneo@gmail.com; 651.795.1302	Phone semi-structured interview, notes taken
Mollie Hatfield	Environmental and social sustainability consultant	molly@hatfieldsustainability.com; 503-432-0311	Phone unstructured interview, notes taken
SAN FRANCISCO CONTACT	POSITION	CONTACT INFO	INTERVIEW
Paula Jones	Sr. Planner and Dir. of Food Systems; FPC Director, Program on Health, Equity, & Sustainability within Dept. of Pub. Health	Paula.jones@sfdph.org; 415-252-3853	In-person semi-structured interview, audio recorded, transcribed, coded
Diana Sokolove	Food Systems Policy Manager, San Francisco Planning Department	Diana.sokolove@sfgov.org; 415-575-9046	Phone semi-structured interview, audio recorded, transcribed, coded
Christine Farren	Director of Development, CUESA and the Ferry Plaza Farmer's Market	Christine@cuesa.org; 415-291-3276 x101	In-person semi-structured interview, audio recorded, transcribed, coded
Jana Carp	Planning Professional	San Francisco Bay Area	In person unstructured interview, notes taken
SEATTLE CONTACT	POSITION	CONTACT INFO	INTERVIEW
Sharon Lerman	Food Policy Advisor Office of Sustainability & Environment	Sharon.lerman@seattle.gov	Did not interview; on leave. Interviewed Phyllis Shulman as proxy.
Phyllis Shulman	Senior Legislative Advisor to Seattle City Councilmember Richard Conlin	pshulman82@gmail.com ; 206-522-3529	Phone semi-structured interview, audio recorded, transcribed, coded
Maria Langlais	City Planning and Development Specialist	maria.langlais@seattle.gov; 206-615-1693	Phone semi-structured interview, audio recorded, transcribed, coded
Karen Kinney	Executive Director, Washington State Farmers' Market Association	execdirector@wafarmersmarkets.com; 206-265-3788	Phone semi-structured interview, audio recorded, transcribed, coded

APPENDIX C  
RESEARCH QUESTIONS/INTERVIEW  
AND DATA GATHERING QUESTIONS

<b>Research Questions/Interview and Data Gathering Questions</b>				
	<b>Overall Research Questions: What is the relationship between CFS and urban resiliency? How can Community Food Systems be strengthened to become more resilient, thereby contributing to overall urban resiliency?</b>			
<b>Interview / Data Gathering Questions</b>	1) What is the current landscape of CFS within the most sustainable U.S. cities?	2) Who are the stakeholders and what approaches are they using to create new community food systems?	3) What policy, planning, and community resources are being used to create new community food systems?	4) How are the policy, planning, and community resources contributing to increase food security and food system resiliency?
Q A)	Using the CFS Indicators, what is the programming in the 16 cities?	Investigate who the key stakeholders are and find out their roles in developing food system plans, programming, and policies.	What federal resources is the city using for food system work, for example SNAP, FMPP, other Federal grants)	What is being said about resiliency in your organization and your city?
Q B)	What are the policies cities are adopting around food?	What approaches are being used to improve and create new community food systems? Urban agriculture, FMs, CSAs, community kitchens, etc?	Where does food sit in the city organization? Is there a FPC, a director, funding, or nonprofit heading food programming and policy? How is the food program directly affected by its place within the organization (health, sustainability, or planning)?	Does the City's policy and programming consider resiliency as a goal and how is that demonstrated?
Q C)		What is the land use policy specific to urban agriculture and what city planning tools are being used to update urban agriculture policy?	How is food represented and what are the important plans, recommendations, and policies including food assessments, urban agriculture updates, and comprehensive or sustainability plans?	What strategies are your city using to increase food system resiliency?
Q D)			Are there barriers to moving from plans, reports, and recommendations to implementing policy? What policies are being used to move food system programming forward?	How does the creation of new community food systems affect urban resiliency?
Q E)			What are the community-level resources that support CFS? Education, events, networks, databases, etc.	

APPENDIX D  
SUSTAINABLE CITIES RATINGS SPREADSHEET  
AND RATING SYSTEMS LEGEND



No.	City	BRR-RCI	MNV	PS	OG	ED	NRDC	BIM	WS	SI	SL-LFA	SL-GE	SL-KB&C SA	DB	TNGG	L	TP-G	TP-US	Total P
1	Portland		1	1	1	1	1	1	1	1	0.5	0.5	0.5	1	1	1		1	14.5
2	San Francisco		1	1	1		1	1	1	1	0.5	0.5	0.5	1	1	1	1		13.5
3	Seattle	1	1	1	1	1	1	1	1	1	0.5	0.5	0.5	1	1			1	13.5
4	Chicago		1	1			1	1	1	1	0.5	0.5	0.5	1	1	1			11.5
5	Boston	1	1	1	1		1		1	1	0.5	0.5	0.5	1	1	1			11.5
6	New York						1	1	1	1	0.5	0.5	0.5	1	1		1	1	9.5
7	Denver				1	1			1	1	0.5	0.5	0.5	1	1			1	8.5
8	Philadelphia	1			1			1	1	1	0.5	0.5			1				8
9	Minneapolis	1				1		1	1	1	0.5	0.5	0.5	1					7.5
10	Wash, DC	1							1	1	0.5	0.5		1	1			1	7
11	Austin		1	1			1	1		1	0.5				1				6.5
12	Albuquerque					1				1	0.5	0.5	0.5		1				4.5
13	Oakland		1						1	1	0.5	0.5	0.5						4.5
14	Los Angeles							1	1				0.5	1	1				4.5
15	Baltimore								1	1	0.5	0.5			1				4
16	San Diego								1			0.5	0.5		1			1	4
17	San Jose								1		0.5	0.5	0.5					1	3.5
18	Honolulu					1				1	0.5	0.5							3
19	Milwaukee								1	1	0.5	0.5							3
20	Eugene		1					1								1			3
21	Dallas						1	1				0.5	0.5						3
22	Sacramento									1	0.5	0.5	0.5						2.5
23	Cleveland								1	1									2
24	Colorado Sprs					1									1				2
25	Long Beach						1		1										2
26	Atlanta								1	1									2
27	Tucson										0.5		0.5		1				2
28	Berkeley		1																1
29	Cambridge		1																1
30	Anchorage					1													1
31	Mesa					1													1
32	Lexington					1													1
33	Ciudad Juarez						1												1
34	Columbus						1												1
35	Miami								1										1
36	Kansas City									1									1
37	Santa Barbara														1				1
38	Las Vegas														1				1
39	Gainesville														1				1
40	Lafayette														1				1
41	Casper														1				1
42	Phoenix											0.5	0.5						1
43	San Antonio										0.5								0.5
44	Charlotte												0.5						0.5
45	Louisville												0.5						0.5
46	Fresno												0.5						0.5
										20	10	10	10	10	20	5	2	2	10

<b>LEGEND</b>			
No.	Metric	Abbreviation	Sustainability Rating System
1	1	BM	Bill Moyers & Co: 12 Cities Leading in Sustainability
2	1	BRR-RCI	Building Resilient Regions-Resilience Capacity Index:Top 50 Cities/Regions
3	1	DB	Daily Beast 25 Greenest Cities (green thinking)
4	1	ED	Earthday
5	1	L	Livability.com Top Green Cities
6	1	MNN	Mother Nature Network: Top 10 Cities
7	1	NRDC	NRDC Smarter Cities
8	1	OG	Organic Gardening: Top 5 Large Cities
9	1	PS	Popular Science: Top 10 out of 15
10	1	SA	Scientific American-Top 10 Overall Green Cities
11	1	SL	SustainLane 50 Most Sustainable Cities-top 20
11a	0.5	SL-LFA	SustainLane-Top 20 for Local Food and Agriculture
11b	0.5	SL-GE	SustainLane-Top 20 for Green Economy
11c	0.5	SL-KB&C	SustainLane-Top20 for Knowledge Base & Communications
12	1	TNGG	The Next Great Generation-Best and Worst Green Cities
13	1	WS	Walk Score top 20
14	1	TP-G	Triple Pundit 10 Global Resilient Cities
15	1	TP-US	Triple Pundit 10 US Climate-Ready Cities

APPENDIX E  
INTERVIEW QUESTIONS

## **Semi-Structured Interview Questions**

### **Federal Resources: Farmers Market Managers; City Food Programming**

#### **Staff**

Some of the federal support that is considered in this project are SNAP usage, marketing, and promotion in community food programming; and federal grants for food-related projects such as the USDA Farmers Market Promotion Program (FMPP).

1. How do you work with the SNAP program and recipients?
2. Do you receive federal funds like the FMPP grants or others?

### **City resources: Food Policy Council Directors/City Planners**

#### ***Food Policy Council Directors/Food System Directors***

1. Community Food Systems, as a goal of food policy programs, strive for 3Es of sustainability, but this study is also looking at food system resiliency.
  - a. What is being said about resiliency?
  - b. Does the City's policy and programming consider resiliency as a goal and how is that demonstrated?
  - c. What strategies are your city using to increase food system resiliency?
2. Where is the CFS housed in the city's organization? Considering this, how does the CFS director work and coordinate with City Planning on food system policy, planning, and programming? How do you ensure cross-departmental collaboration?
3. Does the FPC support and intent (policy vs. programming) change as city administration changes (e.g., new mayor and administration)?

4. Who in City Planning should I interview?

***City Food System Planners***

These tools are mentioned in planning literature as important to urban food system planning and policy for many cities:

- City Food Policy Council
- Community Food Assessment
- Urban agriculture zoning and updates
- Inclusion of food policy and planning in comprehensive and/or sustainability plans

1. What are the important food system reports, plans, and recommendations that have been developed, and what are under development?
2. How are these plans, reports, and recommendations being used to pursue food system policy?
3. Are there barriers to moving from plans, reports, and recommendations to implementing policy?
4. What policies are being used to move food system programming forward?

**Community Resources: Community or Nonprofit Organizer, or Farmers'**

**Market Development/ Outreach Staff**

Below is a list of community-based events and resources that are used in cities to supplement other policy and planning for building community food systems.

- Educational (local traditional products, wild gathering, culinary, farming, seed saving, hydroponics/window gardens, animal raising)

- Community events (convivial, food/wine, seasonal festivities, local traditional festivities)
- Recreational events
- Marketing
- Networks and food resource databases
- Fund raising; building/remodeling facilities
- Child-centered or senior-centered events, education, etc.

What events and resources are used to support the community food system?

APPENDIX F

THREE CITIES INDICATORS AND METRICS

		Urban Agriculture	Community Gardens	Home/Private Gardens	School Gardens K-12	Farmers' Markets	CSAs	Co-ops	Local food	Community Kitchens & Food Business Incubators	Food Kitchens/Pantries
City	% of land	Number	Number	Number	Number	Number	Number	Number	% of Total	Number	Number
1 Portland	unk	50	unk	40	22	106	7	unk	8	67	
2 San Francisco	unk	51	unk	90	31	30	2	unk	3	60	
3 Seattle	unk	82	unk	26*	19	25	7	unk	1	17	

City	% of land	#people per garden	#people per garden	#people per garden	#people per FM	#people per CSA	#people per Co-op	% of Total	Metric?	# of people below poverty level for each pantry
1 Portland	unk	12,062	unk	15,078	27,414	5,690	86,158	unk		1,548
2 San Francisco	unk	16,193	unk	9,176	26,641	27,529	412,932	unk		2,106
3 Seattle	unk	7,738	unk	24,405*	33,397	25,381	90,648	unk		4,927

City	Walk Score	Source
Portland	63	<a href="http://www.walkscore.com">www.walkscore.com</a>
San Francisco	80	<a href="http://www.walkscore.com">www.walkscore.com</a>
Seattle	71	<a href="http://www.walkscore.com">www.walkscore.com</a>

\* See notes in 3\_cities\_data.xlsx

Farmers' Markets
#Sq Miles per FM
6
2
4



APPENDIX G  
CODING LEGEND AND DESCRIPTORS

## Coding Legend & Descriptors

Category/Code	# Mentions	Code Description
1. Category: Urban Resiliency		
a. R	15	Resiliency-Overall
b. R-Dis	14	Disaster
c. R-Com	4	Community Level
d. R-V	1	Vulnerability
e. R-VF	12	Vulnerability-Food
f. R-VI	0	Vulnerability-Individual
g. R-VS	3	Vulnerability-System Level
h. R-CC	9	Climate Change
i. R-E1	0	Environmental
j. R-E2	9	Economic
k. R-E3	0	Equity (Social)
2. Category: Urban planning and Food		
a. Res-F	26	Federal Resources
b. Res-C	36	City Res: city, regional, state
i. Res-O	21	City Organizational Structure
ii. Res-I	29	City Interdisciplinary Departments
iii. Res-FPC	19	City Food Policy Council
iv. Res-P	38	City Plans, Reports, Recommend, Policies
v. Res-IM	56	City Res-Planning Indicators and Metrics
vi. Res-S	5	City Resources at System Level
vii. MAS	20	Mayor-Administration Support
c. Res-Com	2	Community Resources
i. Res-Com-Ed	27	Education
ii. Res-Com-EV	12	Events
iii. Res-Com-MK	4	Marketing
iv. Res-Com-ND	1	Networking/Databases
v. Res-Com-F	2	Fundraising/Building Remodeling
vi. Res-Com-CS	4	Children/Senior Centered
vii. FC	4	Food Culture
d. Res-Fun	42	Resources from various funding sources
3. Category: Community food systems (CFS)		
a. A-CFS	6	Approaches-CFS
b. A-FM	13	Approaches-Farmers' Markets
c. A-MG	2	Approaches-Market Gardens
d. A-FH	7	Approaches-Food Hubs
e. A-UA	27	Approaches-Urban Agriculture
f. SP	36	Scale of Prod, Local & Region, Comm. Kit
g. A-P	3	Approaches-Production
h. A-S	2	Approaches-School agriculture
i. A-CO	4	Approaches-Co-ops
4. Category: Food security and food deserts		
a. VP	7	Vulnerable Populations
b. FS	9	Food Security
c. FA	20	Food Access

5. Category: Sustainability		
a. S	7	Sustainability-Overall
b. S-E1	0	Environmental
c. S-E2	11	Economic
d. S-E3	0	Social Equity
6. Category: Poverty		
a. UP	9	Urban Poverty
b.		
Resiliency & Sustainability		
a. (RS)	5	Resiliency & Sustainability mentioned together

APPENDIX H  
CODING LEGEND—SORTED

	Code	# Mentions	Description	Short Description	Move/combine	Description of Mentions	Answered by which Research Question? #2 CFS/#3 Resources/#4 Resiliency
34	A-MG	2	Approaches-Market Gardens	Market Gardens		Market gardens as an approach were mentioned a couple times	2
39	A-S	2	Approaches-School agriculture	School Agriculture			2
40	A-CO	4	Approaches-Co-ops	Co-ops		Co-ops as an approach were mentioned a few times	2
32	A-CFS	6	Approaches-CFS	CFS		CFS as an approach were mentioned a few times	2
35	A-FH	7	Approaches-Food Hubs	Food Hubs		Food Hubs as an approach were mentioned a few times	2
33	A-FM	13	Approaches-Farmers' Markets	Farmers' Markets		Farmers' markets as an approach was mentioned occasionally	2
36	A-UA	27	Approaches-Urban Agriculture	Urban Agriculture		urban ag was mentioned a lot--the most of any urban cfs approaches	2
37	SP	39	Scale of Prod, Local & Region, Comm Kit/Approaches-Production	Scale/Type of Food Production	was 36; added 3 from #38: Approaches-Production	Scale and type of produciton, local vs. regional, community kitchens were mentioned occasionally	2

22	Res-Com	2	Community Resources	Community Resources		Communitylevel resources (generally) were menioned a couple times	3
27	Res-Com-F	2	Fundraising/Building Remodeling	Fundraising		Fundraising as a community resource was mentioned a couple times	3
28	Res-Com-CS	4	Children/Senior Centered	Children/Seniors		Child/Senior community resources were mentioned a few times	3
25	Res-Com-MK	4	Marketing	Marketing		Marketing was mentioned a few times	3
20	Res-S	5	City Resources at System Level	System-Level City Resources		System-level city resources were mentioned a few times	3
24	Res-Com-EV	12	Events	CFS Events		Community events were mentioned occasionally	3
50	UP	16	Urban Poverty/Vulnerable Populations	Urban Poverty and Vulnerable Populations	Was 9; added 7 from #42: Vulnerable Populations	Urban poverty and vulnerable populations were mentioned occasionally	3
17	Res-FPC	19	City Food Policy Council	Food Policy Council		FPC was mentioned occasionally	3
21	MAS	20	Mayor-Administration Support	Mayor/Leadership Support		mayor/administrative support was mentioned a lot	3
15	Res-O	21	City Organizational Structure	CFS in City Org. Structure		cities' organizational structures related to food sysetm work was mentioned a lot	3
13	Res-F	26	Federal Resources	Federal Resources		federal resources were mentioned a lot	3
23	Res-Com-Ed	27	Education	CFS Education		education was mentioned a lot	3
16	Res-I	29	City Interdisciplinary Departments	Interdisciplinarity		interdisciplinarity in planning was mentioned a lot	3
14	Res-C	36	City Res-inc city, regional, state CFS concepts & planning dept. initiatives	City & State Initiatives		city, regional and state concepts and initiatives were mentioned a lot	3
18	Res-P	38	City Plans, Reports, Recom, Policies	City Plans		city plans, reports, recommendations and policies were mentioned a lot	3
30	Res-Fun	42	Resources from various funding sources	Funding		funding sources were mentioned a lot	3
19	Res-IM	56	City Res-Planning Indicators and Metrics	Indicators & Metrics		IM was mentioned the most	3

9	R-E1	0	Environmental	Environmental Resiliency			0	4
11	R-E3	0	Equity (Social)	Social Resiliency				4
6	R-VI	0	Vulnerability-Individual	Resiliency and Individual Vulnerability				0
4	R-V	1	Vulnerability	Resiliency and Vulnerability		Resilience and vulnerability was mentioned once		4
7	R-VS	3	Vulnerability-System Level	Resiliency at the System Level		System level vulnerability was mentioned a few times		4
3	R-Com	4	Community Level	Resiliency-Community Level		Community level resiliency (generally) was mentioned a few times		4
8	R-CC	9	Climate Change	Climate Change and Resiliency		Climate change was mentioned occasionally		4
10	R-E2	9	Economic	Economic Resiliency		Economic resiliency was mentioned a couple times		4
2	R-Dis	14	Disaster	Disaster Planning and Resiliency		Disaster planning for resiliency was mentioned occasionally		4
1	R	15	Resiliency-Overall	Resiliency		Overall resiliency was mentioned occasionally		4
47	S-E1	0	Environmental	Environmental Sustainability		Environmental sustainability was mentioned a few times		*
49	S-E3	0	Social Equity	Sustainability-Social Equity		Social equity in sustainability was mentioned a couple times		*
29	FC	4	Food Culture	Food Culture		Food Culture was mentioned a few times		*
51	RS	5	Resiliency & Sustainability	Resiliency & Sustainability		Resiliency and Sustainability mentioned together a few times		*
46	S	7	Sustainability-Overall	Sustainability		overall sustainability was mentioned occasionally		*
48	S-E2	11	Economic	Economic Sustainability		Economic sustainability was mentioned occasionally		*
44	FA	20	Food Access	Food Access		food access was mentioned a lot		*
43	FS	21	Food Security/Resiliency Vulnerability Food	Food Security and Vulnerability	Was 9; added 12 from #5: Vulnerability Food	Food security and vulnerability, including food deserts, was mentioned a lot		*

APPENDIX I  
IRB EXEMPT STATUS





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Office of Research Integrity and Assurance

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**To:** Emily Talen

*f* **From:** Mark Roosa, Chair *SR*  
Soc Beh IRB

**Date:** 06/16/2010

**Committee Action:** Exemption Granted

**IRB Action Date:** 06/16/2010

**IRB Protocol #:** 1006005230

**Study Title:** Local Food Systems and Public Market Design

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX J  
FMPP GRANTS

	2006	2007	2008	2009	2010	2011	2012	TOTAL	TOTAL PER CITY	PERCENT OF TOTAL GRANTS TO 16 CITIES FOR 2006-2012	POPULATION	\$ IN GRANTS PER PERSON
<b>TOTAL GRANTS AWARDED</b>	20	23	85	86	81	149						
<b>YEARLY GRANT TOTAL</b>	\$1M		\$3M	\$5M	\$5M	\$9.2M	\$ 9,010,288					
<b>City</b>										CITY / 4,193,415 = %		
Portland	\$ 10,000						\$ 83,597	\$ 93,597	\$ 93,597	2.23%	584,000	\$ 0.16
San Francisco				\$ 24,966			\$ 93,778	\$ 118,744				
San Francisco				\$ 61,380			\$ 87,209	\$ 148,589	\$ 267,333	6.38%	805,000	\$ 0.33
Seattle					\$ 87,509		\$ 71,105	\$ 158,614	\$ 158,614	3.78%	609,000	\$ 0.26
	<b>\$ 10,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 86,346</b>	<b>\$ 87,509</b>	<b>\$ -</b>	<b>\$ 335,689</b>	<b>\$ 519,544</b>	<b>\$ 519,544</b>	<b>12.39%</b>	<b>1,998,000</b>	

Sources:

FMC-2013 FMPP REPORT: [http://fmpp.farmersmarketcoalition.org/wp-content/uploads/2013/06/FMC\\_FMPP\\_SurveyReport\\_7.10.2013.pdf](http://fmpp.farmersmarketcoalition.org/wp-content/uploads/2013/06/FMC_FMPP_SurveyReport_7.10.2013.pdf)

<http://www.ams.usda.gov/AMSV1.0/fmpp>

APPENDIX K  
PORTLAND FOOD SYSTEMS GOALS

City of Portland  
Food System Goals  
May 2012

Program Areas	Indicator	2002	2007	2008	2009	2010	2011	Goal 2014
Access to an affordable supply of healthful, nutritious food	Geographic distribution of food supply locations in Portland							
	Portland households within a half-mile from full-service grocery store					34.8%		40%
	Consumption of healthful food							
	Proportion of Multnomah County adults consuming five portions of fruits and vegetables per day		29.6% <sup>1</sup>		30.0% <sup>2</sup>			+5%
	Affordability of food choices							
	Average Portland consumer expenditures on fruits and vegetables as a proportion of median household income <sup>3</sup>					1.4%		+5%
Urban food production in the City of Portland.	Community food production: Total acreage							
	Portland Parks and Rec Community Gardens			16 <sup>4</sup>			19	21
	Selected Market Gardens <sup>5</sup>						62	100
Farm and direct-market support within the three-county region.	Protect Rural Land							
	Acres of farmland (three-county region) <sup>6</sup>	380,222	339,233					340,000
	Number of direct-market farms (three-county region)		133 <sup>7</sup>					150
	Promote Urban Markets							
	Farmers Market sales (Portland)		\$11.2 million <sup>8</sup>				\$14 mil (est.)	\$15.4 million
	CSA sales to Portland residents			\$1,095,745	\$1,128,591	\$1,242,134		\$1.35 million
	Food Buying Club sales							
Activity in the non-production portion of the food system	Food Manufacturers							
	Number of Portland food manufacturers <sup>9</sup>			151		166		185
	Number of Portland food manufacturing jobs <sup>10</sup>			4,734		5,325		5,965
Hunger and food-related disease	Hunger							
	Number of Multnomah County residents receiving SNAP benefits <sup>11</sup>		91,698	96,856	122,933	143,196	156,292	140,000
	SNAP Participation rate					85%		+3%
	Percentage of students eligible for Free and Reduced Lunch <sup>12</sup> (Portland School Districts: Centennial, David Douglas, Parkrose, Portland, Riverdale)		48.2%	50.6%	62.2%	53.9%	55.5%	50%
	Food-Related Disease							
	Multnomah County obesity rate <sup>13</sup>		23.9%	24.4%	20.5%	26.3%		25%
Multnomah County diabetes rate <sup>14</sup>			6.3%	6.0%	6.7%		6.0%	
Residents' knowledge of healthy eating.	Number of residents taking food education courses							
	City of Portland + five institutions			3,700	4,000	4,700		5,000
	Portland Public Schools with garden educational programs					40 <sup>15</sup>		45

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- <sup>1</sup> Oregon Public Health Adult Behavior Risk Surveillance Survey 04-07  
[http://public.health.oregon.gov/BirthDeathCertificates/Surveys/AdultBehaviorRisk/county/0407/Documents/aamaps/Table2\\_04\\_07.pdf](http://public.health.oregon.gov/BirthDeathCertificates/Surveys/AdultBehaviorRisk/county/0407/Documents/aamaps/Table2_04_07.pdf)
- <sup>2</sup> Oregon Public Health Adult Behavior Risk Surveillance Survey 06-09  
<http://public.health.oregon.gov/DiseasesConditions/ChronicDisease/Documents/Table11.pdf>
- <sup>3</sup> ESRI Consumer Expenditure Data 2010
- <sup>4</sup> Portland Parks and Recreation
- <sup>5</sup> Bureau of Planning and Sustainability
- <sup>6</sup> USDA Agricultural Census <http://www.agcensus.usda.gov/Publications/index.php> (265,494 acres designated as Exclusive Farm Use, 2007)
- <sup>7</sup> USDA ERS: Food Environment Atlas <http://www.ers.usda.gov/FoodAtlas/>
- <sup>8</sup> *ibid*
- <sup>9</sup> Oregon Employment Department - QCEW; 2008, 2010 (Jobs and business totals reflect data collected from firms within 311 and 312 3-digit NAICS categories.)
- <sup>10</sup> *ibid*
- <sup>11</sup> USDA ERS: Food Environment Atlas <http://www.ers.usda.gov/FoodAtlas/>
- <sup>12</sup> Oregon Department of Education Statistics <http://www.ode.state.or.us/sfda/reports/r0061Select.asp>
- <sup>13</sup> CDC Selected Metropolitan/Micropolitan Area Risk Trends from the Behavioral Risk Factor Surveillance System  
<http://apps.nccd.cdc.gov/BRFSS-SMART/SelQuickViewChart.asp>
- <sup>14</sup> *ibid*
- <sup>15</sup> PPS Nutrition Services: School Gardens <http://www.pps.k12.or.us/departments/nutrition/5598.htm>