

**Gritty and Growing: An Exploration of Commercial Urban Agriculture in  
Everett, MA**

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## **Abstract**

Urban agriculture (UA) is becoming a more widely used economic development tool for many communities. The city of Everett, MA has recently begun to take part in the UA movement, creating two community gardens serving over 30 families, many of whom have expressed interest in selling the produce they grow. However, there is no set of regulations or guidelines for commercial UA in Everett. The primary goal of this research is to analyze the feasibility of UA in a post-industrial urban fringe city, specifically in the areas of land use and policy using Everett as the primary case study. This thesis explores land use and policy challenges to UA via a literature review and interviews with three similar cities in MA (Holyoke, Lowell, and Somerville), and employs a content analysis of Everett policy documents and a land assessment to identify specific land use and policy challenges in Everett. The information gathered is used to offer specific recommendations to guide a process of institutionalizing UA in Everett.

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## Chapter One: Introduction

Growing local food in a sustainable and equitable manner has many social, economic, environmental and health benefits (CLF Ventures 2012). As such, it is becoming a more widely used economic development tool for many communities. While urban agriculture (growing food in cities) is not a new phenomenon, urban farming has recently received a lot of attention in Massachusetts and around the country. Many local food proponents have come to realize that urban farms can be financially viable entities while fulfilling other community needs. Urban farms can provide jobs, job training, and health education (Flournoy et al 2012). They can contribute to better nutrition and health for the community by providing locally grown, fresh produce and other products (Bellows et al. 2003). In addition, urban farms can also contribute to the revitalization of abandoned or underutilized urban land, providing social and economic benefits to urban communities, and other beneficial impacts on the urban landscape (Bailkey et al. 2011).

The Conservation Law Foundation's Growing Green Report (2012), which examined the economic development potential for urban agriculture in Greater Boston, paired with an assessment of environmental and health co-benefits, states,

*Sustainable urban agriculture is a key component in creating more livable, carbon resilient, healthier, economically vibrant, and environmentally sustainable cities, and it holds great promise for the Greater Boston region....sustainable agriculture is the foundation for a strong food system that provides a healthy food supply and economic benefit and promotes environmental protection and stewardship (p. 32)*

The city of Everett, MA has recently begun to take part in the urban agricultural movement, creating two community gardens serving over 30 families (one with

13 plots and one with 20 plots). Many residents want more community gardens around the city, and many have expressed interest in selling the produce they grow in the community gardens. However, there is no set of regulations or guidelines for commercial urban agriculture, or urban farming, in Everett.

I describe Everett as “gritty and growing” in this thesis because it is a post-industrial urban fringe city that has gone through major demographic shifts in the last 20 years, and is beginning to see another major shift as private developers move in with large-scale projects such as a resort casino, hotels and luxury apartments. Everett’s complex past, evolving present and undefined future makes it a unique case for studying the feasibility of commercial urban agriculture as a vehicle for equitable community economic development.

In 1870, the year of its incorporation, Everett’s 3.4 square miles were agricultural, filled with tree-lined streets and bounded by tidal rivers. From that time until today, Everett served as the site of an industrial expansion in Greater Boston that knew few pollution controls. Over 20 years ago Everett was predominantly Irish and Italian, fiercely proud of its cultural roots, but like many other American cities, was unprepared for the large migration of resourceful, resilient immigrants from Central America, Brazil, Haiti, Morocco and many other countries, brought together by political and economic forces beyond their control.

Today Everett strives to address environmental health issues through the clean up and development of contaminated sites that were abandoned by companies like Monsanto and General Electric. At the same time, the city is

addressing growing rates of chronic disease among a diverse and underserved population. Everett is home to approximately 43,000 residents and is now the sixth most densely populated city in the state. The entire city is an area of environmental injustice as defined by the MA Executive Office of Energy and Environmental Affairs; 2010 census data reveals that the entire city is defined as either high minority, non-English speaking, low-income, or more than one/all of these attributes. 55% (2013 ACS 5-year estimate) of Everett residents speak a language other than or in addition to English, a much higher proportion than MA overall (79% higher). The top 4 languages other than English spoken in Everett are Spanish (20.6%), Portuguese (15.1%), French Creole (7.9%), and Italian (3.1%). The proportion of Everett public school students whose first language is not English has increased steadily from 26% in 2000 to 50% in 2013 and is now substantially higher than the MA average.

Mapping data reveals that the city is dominated by convenience food (fast food, carryout restaurants, and convenience markets) (Nink, 2014), which community food security researchers refer to as a "food swamp." The city has very limited access points for fresh, healthy, affordable, and culturally appropriate food, while unhealthy food is accessible, affordable, and prevalent.

Food access surveys conducted by the Everett Community Health Partnership (ECHP) in 2011 indicated that healthy food is both insufficient in availability and affordability in the City of Everett. There is only one full-service supermarket in Everett (on the very edge of the city) and two others just beyond



Everett's borders; all three are very difficult to access by use of the regional public transportation service (MBTA), or without a vehicle.

The average unemployment rate in Everett was 10% in 2014, and it has exceeded the state average every year during the period 2006-2014. Median household income in 2014 was \$51,056 compared to \$67,846 at the state-level, approximately 13% of families live in poverty, and nearly 18% of children under 18 live in poverty. Nearly 62% of residents are renters, with 30% paying between 30-49% of their monthly household income on rent, and 26.7% paying 50% or more of their household income on rent.<sup>1</sup>

The impetus for this particular project stems from community members' desire to access more land for personal and community food growing, land and supportive policies for commercial food growing and selling, and more land for community building and economic development around food. It also stems from the local, regional and national movements for more sustainable food production in and around cities, with the potential to not only create better access to healthy local food, but also as a vehicle for equitable community economic development.

### **Thesis Goals and Research Questions**

The primary goal of this research is to analyze the feasibility of developing commercial urban agriculture, or urban farming, in a post-industrial urban fringe city, specifically in the areas of land use and policy. I will explore Everett, MA as a case study to highlight these issues.

In this project I use the term "urban farming" to describe a type of urban agricultural activity that implies growing food in cities for commercial purposes.

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<sup>1</sup> All data in this paragraph from ACS 2014 (5-Year Estimates)

Urban agriculture includes other food-growing activities such as community and backyard gardens, both of which largely serve the purposes of growing food for personal consumption. While this research focuses on analyzing the feasibility of urban farming specifically, recommendations will also support the expansion and encouragement of these other types of activities via land use planning and policy mechanisms.

To better characterize and understand the potential for urban farming in post-industrial urban fringe cities like Everett, I explore the following research questions.

- RQ1: What are the challenges around land use and policy for urban farming in post-industrial urban fringe cities?
  - RQ1a: What does the academic literature say about land use and policy challenges for UA in general, and UF specifically?
  - RQ1b: What can be learned from the efforts of others?  
Specifically, what kind of urban farming models exist in selected post-industrial urban fringe cities, and how have these enterprises begun and sustained themselves?
- RQ2: How do these land use and policy challenges to urban farming apply to Everett?
  - RQ2a: What policies exist to either prohibit or encourage UF in Everett?
  - RQ2b: What is the land capacity for UA in Everett?

- RQ2c: What can planners, policymakers and urban farming proponents do to expand urban agriculture in Everett to include urban farming?

To answer these questions I will engage in the following activities: 1) Through a literature review I will synthesize information on a) the benefits and challenges of urban agriculture (UA) broadly, and urban farming (UF) specifically, and b) popular policy and planning tools for UA; 2) The literature review will be further informed by studying the land use and policy successes and challenges of three urban farming ventures in post-industrial urban fringe cities in MA (Holyoke, Lowell, and Somerville), via content analysis and interviews; 3) I will then take what I have learned from this research and apply it to Everett as a case, conducting content review of policy documents and conducting a land inventory and assessment to identify the specific land use and policy challenges there. The information gathered will be used to offer specific recommendations, via land use planning and policy mechanisms, for planners, policymakers and urban agriculture proponents to guide them in the process of institutionalizing urban farming in Everett MA.

## **Chapter Two: Literature Review**

To answer my first research question “What does the academic literature say about land use and policy challenges for urban agriculture (UA) in general, and UF specifically?” I wanted to get a broad overview of various aspects of UA before narrowing in on specific challenges around policy and land. Therefore, I reviewed academic literature around two topics: the benefits and challenges of UA, and commonly used UA policy and planning tools. This background information guides the rest of my research by giving me a firm platform and knowledge base on which to build my data collection, analysis and future actions and recommendations.

### **Benefits and Challenges of Urban Agriculture**

There are many direct and indirect benefits of urban agriculture to a community. Urban agriculture can increase community health not only by providing space for residents to grow (and therefore consume) fresh nutritious food (Bellows et al. 2003), but it also fosters broader community health by bringing people together, instilling a sense of community and civic engagement in residents, and even by providing an economic boost to the community. In a literature review of the social impacts of various urban agriculture projects around the U.S., Golden (2013, p. 9) found,

The most observed impact of urban agriculture was its effect on communities and the lives of residents and participants. Throughout the literature, it was clear that urban agriculture goes beyond the scope of growing food and has valuable community development potential, serving as an “agent of change” (Holland, 2004) for communities. This was particularly true for community gardens, which were important spaces for gathering and socializing (Patel, 1991; Saldivar-Tanaka & Krasny, 2004; Teig et al., 2009.)

However, there are also many challenges to urban agriculture, especially in communities where proactive and supportive policies have not been put in place. Some of these benefits and challenges are discussed in the following pages.

### ***Benefits***

#### Diet and Nutrition

Studies show that residents with greater access to fresh produce, whether via community gardens, grocery stores or other retail outlets, consume healthier diets and have lower rates of diet-related diseases than their counterparts in neighborhoods lacking food access (Flournoy et al., 2012). Golden (2013) found evidence that urban agriculture increases fruit and vegetable consumption among participants, and that people who participate or have family members that participate in community gardens were 3.5 times more likely to consume fruits and vegetables than people without a gardening household member (Alaimo, Packnett, Miles, & Kruger, 2008, as cited in Golden, 2013). Bellows, et al. (2002) state, “Gardeners generally believe that what they grow is good for them, and so they tend to eat it” (p. 35).

Much of the literature cited statistics of urban garden and farm plots yielding surprising amounts of produce (Bellows et al, 2002; Flournoy et al, 2012; Golden, 2013). According to Bellows, et al (2002) “In a 130-day temperate growing season, a 10x10 meter plot can provide most of a household’s total yearly vegetable needs, including much of the household’s nutritional requirements for vitamins A, C, B complex and iron” (p. 2). Flournoy et al

(2012) state that families who participate in community gardening are able to offset typically 30 to 40 percent of their produce needs by eating food grown in their own gardens. Urban agriculture projects evaluated by the Community Food Security Coalition produced 18.7 million pounds of food with over 726,000 pounds donated for community food consumption (Kobayashi et al., 2010, as cited in Golden, 2013, p. 12).

Many farming projects often support healthier ethnic diets and help people grow culturally appropriate foods for their families and communities, all while connecting multiple generations through farming (Flournoy, 2012). There are also health benefits associated with eating locally grown food, as Bellows et al. (2002) cited that 5-10 day transportation and storage lags between production and consumption leads to losses of 30-50% in some nutritional constituents.

### Social Impacts

There are also many positive social impacts of urban agriculture. These impacts include increasing social capital and social engagement (Bellows et al. 2002; Flournoy et al. 2012; Golden 2013), creating safer and more beautiful neighborhoods (Bellows et al. 2002; Flournoy et al. 2012; Golden 2013), and bringing people together across different age, ethnicity, race, and socioeconomic groups (Flournoy 2012). Neighborhoods with community gardens also typically report reduced rates of crime (Bellows et al. 2002; Flournoy et al. 2012; Golden 2013), trash dumping, fires, violent deaths, and increased voter registration and civic responsibility (Flournoy et al. 2012). Social engagement is also positively correlated with personal attention to health care and wellness (Bellows et al

2002).

In a literature review of the social impacts of various urban agriculture projects around the U.S., Golden (2013) found that for urban farms and businesses, self-determination, self-reliance, improved self-esteem and pride, and activism were seen as major impacts (Bonacich & Alimahomed-Wilson, 2011; Bradley & Galt, 2013; Colasanti et al., 2010; McClintock, 2013; White, 2010; as cited in Golden 2013). In both community gardens and urban farms, the advocacy and coalition building needed to overcome structural barriers of zoning, land-use conflicts, and resource shortages, can create “networked movements,” as they typically involve a wide range of cross-sectoral partners and often employ a citizen-led approach to knowledge and solutions (Wekerle 2004; Welsh and MacRae 1998, as cited in Mendes et al., 2008). This participatory planning approach has been shown to contribute to increased citizen participation and buy-in at all levels, as the policies developed meet the needs of both the municipality and its constituents, particularly marginalized groups (Mougeot 2006, as cited in Mendes 2008).

### Economic Impacts

Urban agriculture can improve economic health by creating jobs, providing job training and skills development, and incubating and attracting new businesses (Flournoy et al 2012; Golden 2013). Many urban agriculture projects serve as job training and workforce development programs for youth and provide productive and empowering transitional employment for unemployed and recently incarcerated populations (Flournoy et al 2012).

Been & Voicu (2007) found that property values abutting cultivated green spaces generally tend to be higher than those surrounding underutilized or dilapidated lots, and in some neighborhoods could raise neighborhood property values by as much as 9.4 percentage points within five years of the garden's opening (p. 30). The Conservation Law Foundation's Growing Green Report (2012), which examined the economic development potential for urban agriculture in Greater Boston, paired with an assessment of environmental and health co-benefits, found that cultivation on Greater Boston's urban soils can create between two and five direct on-farm jobs per acre.

#### Environmental Benefits

Finally, urban agriculture plays an important role as part of environmental sustainability programs. Physically, it increases green space, which reduces the urban heat island and storm water runoff, as well as improving air quality (Bailkey et al 2011; Golden 2013). Because food is produced locally, urban agriculture can also reduce energy consumption and pollution associated with large-scale industrial agricultural transportation (Brown & Carter 2003).

#### ***Challenges***

##### Access to Land

Accessing land for urban farming can be a confusing, costly, and sometimes prohibitive, process. Land values in cities with dense development are costly; therefore, the majority of urban farmers do not own the land that they use for food production, and lack long-term land access (Brown and Carter 2002). They often lease or informally use land to grow food, and do not have the option of buying



land within city limits (Brown and Carter 2002). This can lead to instability and uncertainty for farmers, as they could essentially be kicked off the land if the landowner has an opportunity to sell or develop the land at a higher price.

Identifying the limited areas of land suitable for food production is an additional challenge for urban farmers who may be skilled in food production, but lack knowledge of how to lease land with complex zoning regulations (Morales 2012).

Local government agencies can designate land or districts dedicated to urban agriculture through easements, zoning overlay districts or other land use policies (Flournoy 2012). Municipalities also have the ability to sell public land at below market value or donate land directly to urban farming enterprises (Morales 2012).

### Cost

Urban farm start up and operating costs and requirements vary depending on size, location, purpose and type of business (non-profit vs. for-profit; raised bed vs. in the ground vs. greenhouse vs. rooftop, etc.), as well as the absence or presence of supportive municipal policies and programs (Brown and Carter 2012). Farm operations often require large upfront investments before profits are made, and many new farmers may struggle to absorb and process the municipal policies and permits required to even start farming. Farmers who lack business skills and knowledge, especially lower-income farmers, may find that traditional financial assistance mechanisms (such as bank loans) are barriers to a successful startup (Morales 2012). Municipal grant programs and land lease programs can help to mitigate these costs, but unless there are supportive policies and programs in place, a startup urban farm can be an extremely costly investment.

### Access to Markets

Although there is a growing market for locally sourced produce, urban farmers who wish to pursue direct sales to institutions, grocery stores and restaurants face competition from wholesale distributors (Brown and Carter 2002). Because urban farmers are growing on less land than their conventional counterparts, they may not be able to produce high yields demanded by large-scale purchasers (Dziedzic and Zott 2012). The labor, transportation and marketing costs, as well as the time it takes for sales and distribution, require many additional resources that startup urban farmers may not have on their own. Therefore, aggregating food from multiple urban farms, such as with a food hub, is an increasingly viable solution to compete with wholesale distributors and provide shared resources between urban farming enterprises (Brown and Carter 2002). Some local governments and nonprofits have provided support for urban farmers to navigate complicated and highly competitive food markets by creating citywide “buy local” campaigns, removing financial and technical obstacles to creating and entering new retail markets (e.g. low-cost permitting for farmers’ markets and farmstands) and offering low-cost financial or technical training (Flournoy et al 2012).

### **UA Policy and Planning Tools**

Municipal policy can influence urban agricultural activities in either supportive or prohibitive ways. Policies can promote and support UA activities through such mechanisms as funding, land donations, protective zoning and user-friendly permitting (Ackerman and Wooten 2011). However, they can also (oftentimes unintentionally) present barriers, such as when restrictive zoning makes urban

agriculture difficult (Morales and Mukjerji 2010). Incorporating urban agriculture into municipal policies as a comprehensive component of the land-use and permitting processes can increase the benefits while decreasing the challenges detailed above.

Drescher (2000, p. 5), and in recent years other scholars, food planners and activists (Ackerman and Wooten 2011; Flournoy 2012; Morales and Mukerji 2010; Bailkey et al 2011), recommends that local municipalities that wish to foster urban agriculture in their communities take the following issues into consideration to ensure a successful and comprehensive policy approach:

- Set in place and institutionalize mechanisms for effective coordination of urban agriculture activities and include direct stakeholder participation in planning and implementation.
- Define a leading stakeholder for coordination of these mechanisms.
- Provide a legal framework for urban agriculture activities, and outline regulatory access to land, water, urban organic wastes, and wastewater.
- Define environmental standards, such as minimum quality standards for agricultural soils and irrigation water, and health standards tailored to the ultimate consumers of the product produced.
- Institutionalize administrative procedures for how residents and community groups can gain access to the above-mentioned resources.
- Institutionalize procedures to monitor the positive and negative effects of urban agriculture with regard to social, economic, and environmental conditions and define responsible bodies.
- Establish procedures to oversee enforcement on issues regarding UA.

The two most commonly cited land use mechanisms to provide a legal framework to promote and protect urban agriculture are comprehensive plans and zoning (Ackerman and Wooten 2011; Morales and Mukerji 2012; Bailkey et al 2011).

Comprehensive plans establish long-term guidelines for the permissible land uses in different areas within a community and guide future public and private development (Ackerman and Wooten 2011). Including language in

comprehensive plans to establish a land use policy to promote urban agriculture as an important community feature is a common and popular tool for promoting urban agriculture in cities (Ackerman and Wooten 2011).

Many officials involved in urban agriculture note that zoning will work best in the context of a package of reinforcing policy elements (Ackerman and Wooten 2011). Zoning is a regulatory mechanism by which a local government divides a community, such as a city or county, into distinct districts with different land use regulations (Morales and Mukerji 2010). It determines what can and cannot be built, and what activities can and cannot take place, on any given parcel of land (Ackerman and Wooten 2011). Zoning is still the common mechanism used for most urban planning elements; therefore, the more it is used as a policy and regulation tool for urban agriculture, the more urban agriculture will be taken seriously and have a secure future (Morales and Mukerji 2010).

To date in Massachusetts, two municipalities (Boston and Somerville) have recently passed zoning amendments to promote, protect and regulate various urban agricultural activities with specific regulations for commercial urban agriculture. Another municipality, Worcester, MA, made a public announcement in January 2014 that it will begin a process to incorporate urban agriculture into its current zoning policies (Kotsopoulos 2014). Boston and Somerville appear to have followed Ackerman and Wooten's (2011) recommendations cited above to create a package of zoning and reinforcing policy elements, as can be seen in Table 1 below, which summarizes allowances for certain types of urban agriculture activities.

**Table 1: Summary of Boston and Somerville Zoning Amendments**

	<b>Boston<sup>1</sup></b>	<b>Somerville<sup>2</sup></b>
<b>Land Use Policy</b>	Zoning amendment (Article 89)	Zoning Amendment
<b>Community Gardens</b>	Allowed in all zoning districts	Allowed in all zoning districts on municipal land
<b>Urban farms</b>	Up to 1 acre (43,560 sq. ft.) allowed in all zoning districts. Greater than 1 acre requires special permit.	Any size community farm <i>without</i> keeping of honey bees/hens allowed in all districts; <i>with</i> keeping of honey bees/hens requires special permit. Commercial farms less than 5,000 sq. ft. allowed in all districts, larger than 5,000 sq. ft. requires special permit.
<b>Farm stands</b>	Allowed on any urban farm	Subject to provisions
<b>Animals (i.e. honey bees and hens)</b>	Specific to neighborhood district regulations – can apply for permits.	Allowed in all zoning districts as accessory residential use; special permit required for all other uses
<b>Production type allowed</b>	In ground (with proof of soil testing); rooftop (up to 5,000 sq ft); aquaponics; hydroponic	In ground (with proof of soil testing); greenhouse; rooftops (on residential properties or municipal land only); aquaponics; hydroponic

<sup>1</sup>Boston Redevelopment Authority (2013)

<sup>2</sup>City of Somerville Ordinance No. 2012-06 (2012)

### **Urban Agriculture Land Inventories and Assessments**

According to Taylor and Taylor (2012), developing effective policies and programs at the city or neighborhood level demands as a first step the accurate mapping of potential urban agriculture sites. Many communities interested in expanding urban agriculture will undergo a land inventory and assessment to meet various objectives, and some suggest using the inventory process itself as a way to increase institutional awareness and political support for urban agriculture (Horst, 2011). Some aim to find suitable sites for urban agriculture, while some aim to calculate how much food can be grown to feed a specified population or meet some other community need. Urban land inventories are an effective tool to integrate urban agriculture into public policy and planning as a land management

use strategy (Horst 2011). Land inventories can identify opportunities for urban agriculture initiatives and promote better understanding and analysis of the potential for urban agriculture in a community (Mendes et al 2008). This tool can be employed in conjunction with other tools, strategies and processes, to advance cross-departmental municipal goals such as reducing carbon emissions, increasing food access and supporting workforce development (Mendes et al 2008).

Published inventories have been performed in Portland, Vancouver, Seattle, Cleveland (Cuyahoga County), Detroit, Chicago, Toronto, New York City, Youngstown, Oakland, San Francisco (Mendes 2008) and Boston (Chin et al 2013). The types of urban agriculture included in each study are controlled environment production (i.e. hydroponics, greenhouse, rooftop, vertical), ground-based agriculture, permaculture, fruit trees, agroforestry, livestock production and beekeeping (Horst 2011). Inventories have also differed in business types being considered as urban agriculture, including nonprofit, for profit entrepreneurial businesses, or hybrids of both. Generally the assessments have adhered to the following framework, with some slight change to the order and outcomes: identifying vacant land by ownership type; creating urban agriculture suitability criteria (physical and socioeconomic); assigning ranking or scoring systems for criteria; and presenting study results as publicly-available reports (Horst 2011). The common physical attributes analyzed by the studies reviewed were size, slope and light exposure, and some integrated food equity criteria such as proximity to public transportation, poverty and income, residential density, and race and ethnicity (Walter and Dressler, 2013).

Urban agriculture land assessments have resulted in greater awareness and understanding of food system issues and their value in exploring local alternatives to current industrialized food production and distribution models (Horst 2011). They have the power to evaluate the promise of urban agriculture, but the process and resulting impacts are unique to each city (Chin et al 2013). Popular impacts have included integration of urban agriculture into planning and policymaking decisions, as well as strengthening linkages to existing environmental sustainability initiatives (Mendes 2008). Stakeholders have built upon these assessments and conducted more targeted, in depth studies that relate to issues of public health, economic development, food security, community engagement and environmental sustainability (Horst 2011).

### **Chapter Three: Methods**

In order to realize my goal of analyzing the feasibility of urban farming in post-industrial urban fringe cities, I first explore the broad question of general challenges to urban farming through a literature review (Chapter 2). I then delve deeper into this question by systematically characterizing the efforts of others actually doing the work of urban farming in post-industrial urban fringe cities in MA. Ultimately, I will apply what I learn from this research to Everett, MA. This Chapter describes how I answered the rest of my research questions, with the first section describing the methods of creating UF profiles to answer RQ1b: “What can be learned from the efforts of others? Specifically, what kinds of urban farming models exist in post-industrial urban fringe cities in MA, and how have they begun and sustained themselves?” and the second section describing how I conducted a policy analysis and land inventory and assessment to answer RQ2: “How do these land use and policy challenges to urban farming apply to Everett?” These questions and methods are briefly described in Table 2 below, and in more detail in the following pages.



**Table 2: Research Questions and Methods**

Question	Method
<p>RQ1: What are the challenges around land use and policy for urban farming in post-industrial urban fringe cities?</p>	
<ul style="list-style-type: none"> <li>RQ1a: What does the academic literature say about land use and policy challenges for urban agriculture in general, and urban farming specifically?</li> </ul>	<p>Conduct literature review to synthesize information on: a) the benefits and challenges of urban agriculture (UA) broadly, and urban farming (UF) specifically, and b) popular policy and planning tools for UA</p>
<ul style="list-style-type: none"> <li>RQ1b: What can be learned from the efforts of others? Specifically, what kinds of urban farming models exist in post-industrial urban fringe cities in MA, and how have they begun and sustained themselves?</li> </ul>	<p>Collect primary data from three UF ventures in post-industrial urban fringe cities in MA (Holyoke, Lowell, and Somerville) to create profiles documenting successes, challenges and advice for Everett:</p> <ol style="list-style-type: none"> <li>Content analysis of publically available documents (websites, annual reports, conference presentations), and</li> <li>Conduct interviews with high-level staff of three UF ventures in these communities (Nuestras Raíces, Holyoke; Mill City Grows, Lowell; Groundwork Somerville, Somerville)</li> </ol>
<p>RQ2: How do these land use and policy challenges to urban farming apply to Everett?</p>	
<ul style="list-style-type: none"> <li>RQ2a: What policies exist to either prohibit or support UF in Everett?</li> </ul>	<p>Conduct content review of policy documents (specifically City Ordinances and Zoning Ordinance) to identify prohibitive and supportive UA policies</p>
<ul style="list-style-type: none"> <li>RQ2b: What is the land capacity for UF in Everett?</li> </ul>	<p>Conduct a land inventory and assessment using GIS and on the ground analysis to identify potential sites for urban agriculture in Everett, from small community gardens (at least 2,500 sq. ft.) to standard size urban farms (at least 10,800 sq. ft.).</p>
<ul style="list-style-type: none"> <li>RQ2c: What can planners, policymakers and urban farming proponents do to expand urban agriculture in Everett to include urban farming?</li> </ul>	<p>The information gathered will be used to offer specific recommendations, via land use planning and policy mechanisms, for planners, policymakers and urban agriculture proponents to create a viable urban farming industry in Everett MA.</p>

## **Urban Farming Enterprise Profiles: Data Collection and Analysis**

To answer RQ1a, “What does the academic literature say about land use and policy challenges for urban agriculture in general, and urban farming specifically?” I conducted the literature review in the previous section. To answer RQ1b, “What can be learned from the efforts of others? Specifically, what kinds of urban farming models exist in post-industrial urban fringe cities in MA, and how have they begun and sustained themselves?” I apply data collection methods of content analysis and interviews to create profiles of successful urban farming enterprises in three post-industrial urban fringe cities in MA: Nuestras Raices in Holyoke; Mill City Grows in Lowell; and Groundwork Somerville in Somerville.

These specific enterprises were chosen for five main reasons: 1) The communities are demographically similar to Everett (post-industrial urban fringe cities that are densely populated and ethnically/racially/linguistically diverse – see Table 3 for demographic breakdown); 2) each of these communities have burgeoning urban agriculture industries with at least one successful urban farming enterprise that I have learned about through previous academic or professional research; 3) each urban farming enterprise represents a different urban agriculture model (some operate both farms and community gardens, some offer job training programs, some have different distribution apparatuses such as CSAs, farm stands, retailers, etc.), 4) each enterprise uses urban farming as a vehicle to meet larger social justice goals (food access/sovereignty, job training, youth development, community economic development, etc.); and 5) geographic

similarities - all of these organizations are located in Massachusetts and therefore operate under similar statewide regulations and policies.

**Table 3: UF Enterprise Community Demographics<sup>1</sup> (compared with Everett)**

Community	Population density per sq. mile	Median household income	% Foreign Born	% Speak English Only	1st most popular language spoken besides English	Percentage of population	2nd most popular language spoken besides English	Percentage of population	3rd most popular language spoken besides English	Percentage of population
Everett, ma	12,289	49,368	41.2	45.2	Spanish	20.6	Portuguese*	15.1	French*	7.9
Holyoke, MA	1,881	31,628	5.8	54.6	Spanish	41.0	Polish	1.4	n/a	
Lowell, MA	7,912	49,452	24.8	58.1	Spanish	13.6	Mon-Khmer, Cambodian	10.7	Portuguese*	5.2
Somerville, MA	18,693	73,497	25.1	67.9	Spanish	8.6	Portuguese*	7.1	French*	3.3

<sup>1</sup> Based on ACS 2013 5-year estimate \* or French Creole, \*\* or Portuguese Creole

The three organizations I chose, and the staff I interviewed, are described in Table 4.

**Table 4: UF Enterprises Studied and Staff Interviewed**

Organization	Location	Non-profit or for profit	Description: UA model	Staff Interviewed
Groundwork Somerville	Somerville, MA	Non-profit	Operate 9 schoolyard gardens, 1 library garden and 1 urban farm	Chris Mancini, Executive Director
Mill City Grows	Lowell, MA	Non-profit	Operate 5 community gardens and 2 urban farms	Lydia Sisson, Executive Director
Nuestras Raices	Holyoke, MA	Non-profit	Operate 11 community gardens and 1 urban farm	Anne Cody, Director of Operations

## **Data Collection Methods**

### Content Analysis

Through content analysis (organizational websites, annual reports and presentations at the First Annual MA Municipal Urban Agriculture Symposium, sponsored by the MA Dept. of Agricultural Resources (MDAR) held in March of 2015), I collected the following organizational information about each venture: 1) Organization and management (duration of operation; staffing structure; legal structure, i.e. sole proprietorship, partnership, limited liability company, corporation, non-profit, cooperative, etc). 2) Marketing strategy (type of products sold; distribution apparatus; customer base; pricing; acceptance of SNAP and WIC), 3) Operating strategy (production type; crop management – organic or conventional; average seasonal crop yield; physical infrastructure; number of farmers per season, etc.), and 4) Financial strategy (funding sources; revenue generated from sales, etc.).

### Phone Interviews

In addition to content analysis, I conducted phone interviews with upper level management in each of these organizations to answer more subjective questions relating to accomplishments/successes, challenges/barriers, and what advice they would give to a city like Everett just starting out in urban farming. The purpose of the interviews was to ensure the data collected during content analysis was accurate and up-to-date, as well as to learn more about interviewees' experience with urban farming in their communities. Prior to these interviews I submitted the proper IRB documentation for exempt status. During initial contact through email

(one done myself and two via a mutual contact, the MA Department of Agricultural Resources (MDAR) Urban Agriculture Coordinator), I explained my role as a graduate student at Tufts UEP and explained the purpose of my thesis. I also discussed how the information presented in the thesis could be anonymous if they would like, and if they wished not to be identified, no identifiers would be available to link the interviewee or company to the results. All interviewees gave permission for their full names and organizations to be identified, and agreed to being audio recorded and quoted. For a full list of interview questions, see Appendix A.

### ***Data Analysis***

Once all data was collected, it was organized into four themes: 1) Results, 2) Process, 3) Relationships and Values, and 4) Advice for Everett. I chose to categorize around these themes because I found in my data analysis that while I was initially looking specifically for results-oriented answers, each interviewee shared so much more than just numbers and bullet points – they are all extremely passionate about the work they do, how they do it, and for whom and with whom they do it. The four themes allow me to break down the accomplishments, challenges and advice from these interviews to include who, what, why and how, to further understand the deeper connections necessary to foster the creation of a successful urban farming industry in Everett, MA.

## Applying Challenges of Urban Farming to Everett, MA

### *Content Review of Policy Documents*

#### Data Collection

To get a sense of how permissive or restrictive urban agricultural activities currently are in Everett, I conducted a content analysis of Everett’s Complete Ordinance and Zoning Ordinance for any mention of urban agriculture using a key word search. Using the City of Somerville Urban Agriculture Zoning Amendment (City of Somerville Ordinance No. 2012-06, 2012) as a guide, I began a list with all of the definitions added to Somerville’s Zoning Amendment with this amendment (found in Article 2, definitions added to Zoning Ordinance, p. 2). I then added to the list more general key words relating to agriculture that I have found in the literature (words that could be synonyms or other descriptors to the Somerville key words) that may currently be included somewhere in the Everett ordinances (see Table 5 below).

**Table 5: Key words for Everett Complete Ordinance and Zoning Ordinance Analysis**

<b>From Somerville Urban Agriculture Zoning Amendment</b>	<b>Additional Key Words from literature:</b>
Agriculture	Animal
Arbor	Chicken
Aquaponics	Compost
Cold frame	Cultivate
Farm	Food
Farmstand	Fowl
Garden	Fruit
Greenhouse	Meat
Hens	Plant
Honeybee	Produce
Hoop house	Vegetable
Hydroponic	

### Data analysis

I documented in a chart (available in Appendix B) each term that I found with its Chapter, Article, Section, Page and language, then filtered out any language that did not have to do with food growing and selling at all (i.e. an ordinance may mention a “plant” as a manufacturing plant and not a growing, living thing, or “food” may be mentioned in an article defining the cost of restaurant permits, but nothing to do with the acceptance or prohibition of certain types of food). I then categorized my findings into what I found to be: supportive, prohibitive, neutral, or not mentioned.

### ***Land Inventory and Assessment***

In order to answer my research question: How do the land use and policy challenges to urban farming found in the literature review and UF enterprise profiles apply to Everett? And more specifically, “What is the land capacity for UF in Everett?” I conducted a land inventory and assessment using Geographic Information Systems (GIS) and on the ground analysis (ground-truthing) to identify potential sites for urban agriculture in Everett, from small community gardens (at least 2,500 sq. ft.) to market gardens or “mini farms” (at least 5,000 sq. ft), to standard size urban farms (at least 10,800 sq. ft.) These three types of urban agriculture were chosen based on the literature review, and after interviewing other UF practitioners and finding that while the size of the farming operation matters in terms of economic viability, smaller spaces are also needed for community gardens as “test beds” and incubators for growers (A. Cody, personal communication). This land assessment has created a baseline inventory

of potential sites, which can be used by planners and community members in the future to identify land for different types of UA activities. The major outputs of this piece of the thesis are maps, tables, charts and site profiles (including photos) illustrating the location and types of land available for UA in Everett.

As the literature review in Chapter 2 indicates, a widely used process for an urban land inventory is as follows: 1) identify vacant land by ownership type, 2) create and apply urban agriculture suitability criteria (both physical and socioeconomic) to vacant land, 3) assign ranking or scoring systems for criteria, and 4) present study results as publicly available reports (Horst, 2011). My methodology has loosely followed this process, and is as follows: 1) develop spatial questions that reflect research goals, 2) establish and define urban agriculture suitability criteria to answer these questions, 3) conduct GIS analysis to apply suitability criteria to answer spatial questions, 4) conduct on the ground analysis, or “groundtruthing,” using ranking criteria found in literature review to further verify urban agriculture suitability of land, and 5) create site profiles of suitable land. My methodology for each of these steps is as follows:

### **1) Develop spatial questions:**

Overall question: What public or private land parcels in Everett are vacant or underutilized, and could be used for urban agriculture?

- Sub-question 1: Which of these parcels have current sizes and land uses suitable for urban agriculture?
- Sub-question 2: Of this land, which sites are accessible for lower-income populations? Specifically, which sites are within a quarter mile of a bus



stop, in areas with a high percentage of renters, and in areas with environmental justice (EJ) populations (used as a proxy for low food access (Walter and Dressler (2013))?

**2) Establish and define suitability criteria:** I then established and defined suitability criteria to answer these questions using GIS analysis. The three major criteria I chose were size, land use, and equity. A brief description of these criteria, and why I chose them, is as follows:

*Size:* According to published urban agriculture land inventories (Mendes et al. 2008; Walter and Dressler 2013; Chin et al. 2013), the following sizes are standard for different types of urban agriculture. For this project any vacant or underused land in Everett meeting the land use criteria below, and larger than 2,500 sq. ft., was selected and then later categorized into the following:

- Community gardens: 2,500 – 5,000 sq. ft.
- Market gardens (“mini-farms”): 5,000 – 10,800 sq. ft.
- Urban farms: 10,800 sq. ft. (quarter-acre) or larger

*Land Use:* While urban agriculture has been developed on many types of land in the U.S., this project has selected land uses that would facilitate the potential development of sites within the near future, meaning that there would not have to be any sort of heavy cleanup of the sites. Although many published urban agriculture land inventories focus on city-owned land (either institutional or other tax-exempt land uses) (Mendes et al, 2008; Chin et al. 2013; Walter and Dressler 2013; McClintock et al. 2013), this project looked at any vacant or underutilized space in the city, regardless of its ownership,

since there is very little undeveloped public space in Everett. Therefore, the land uses (based on 2013 Assessor's Data accessed through Mass GIS website) selected for this project are:

- Developable residential
- Developable commercial
- Institutional/exempt parcels with complimentary uses (i.e. parks or schools with unused open space)

*Equity:* It is important that potential urban agriculture sites are accessible for lower-income residents (Walter and Dressler 2013). These criteria are especially important for community garden and market garden sites, as their primary purpose is to provide food-growing space for residents who do not currently have access to healthy affordable food. Urban farm sites have less stringent criteria, as their purposes are more multi-faceted, and often include job training, community education, and food production for retail purposes. The following equity criteria were applied to give preference to community and market garden sites that are located within:

- One-quarter mile (an average 5-minute walking trip; known to be a common measure of walkability (American Planning Association, 2009) of a bus stop, which is so sites are accessible for residents without a vehicle.
- Census block groups deemed Environmental Justice (EJ) populations by the Massachusetts Executive Office of Energy and Environmental Affairs (EEA), which indicates neighborhoods with low access to community

resources.

- Census block groups with a high percentage (greater than 40%) of renters, which indicates lack of personal food growing space (Walter and Dressler 2013).

**3) Conduct GIS analysis:** The process of the GIS analysis is as follows: 1) Identify parcels with more than 2,500 sq. feet of vacant or underutilized land; 2) Select parcels with suitable land uses; 3) Verify aerially; 4) Categorize by size; 5) Apply equity data. Table 6 describes all GIS datasets used, and each process is described in detail below.

**Table 6: GIS Datalayers**

<b>Dataset</b>	<b>Description</b>	<b>Source</b>	<b>Key Attributes</b>
<b>Everett Parcels</b>	This layer contains all tax parcels within the City of Everett	MassGIS (2013)	Tax parcel boundaries, area and land use
<b>Everett Assessor's Data and Use Code look up table</b>	This data table contains assessors data from the City of Everett	MassGIS (2013)	Land use descriptions and parcel ownership
<b>MBTA Bus Routes and Stops</b>	This layer contains all of the bus routes and stops (represented as points) within the MBTA's service area. Data was compiled from CTPS.	MassGIS (2007)	Bus stop points
<b>MA Open Space</b>	This layer contains the polygons and boundaries of all protected and recreational areas within MA. This layer will provide context.	MassGIS (2013)	Locations of protected and recreational areas
<b>MA Hydrography 25K</b>	This layer contains the polygons and boundaries of all water related features within MA. This layer was compiled from USGS. This layer will provide context.	MassGIS (2010)	Location of water features
<b>MassDOT Roads</b>	These layers includes all public roads within MA and divides them into six classes.	MassGIS (2012)	Class (1-6), Street Name
<b>Everett Building Structures</b>	This layer contains all building footprints in the City of Everett. It was created using ortho imagery, and consists of two dimensional roof outlines for all buildings larger than 150 square feet.	MassGIS (2012)	Building footprints
<b>MA Environmental Justice Populations (by Block Group)</b>	This layer contains criteria classifying EJ communities, including minority status, income, and English language isolation, in addition to other descriptive statistics, such as population, area, and town boundary.	MassGIS (2010)	Total Pop of Block Group; English Language Isolation; Low Income; % Minority Population; Town Boundary and ID
<b>Housing Tenure by Census Block</b>	This data set contains housing tenure information for all housing units by census block	American Fact Finder, Census 2010	Percentage of renters per census block

- *Identify parcels with more than 2,500 sq. feet of vacant or underutilized land:* I began with all tax parcels in City of Everett, then used the erase tool to erase out all buildings. I then recalculated area without buildings and selected out those with 2,500 sq. ft. or greater.
- *Select parcels with suitable land uses:* Parcels were first categorized as “not suitable,” “suitable,” or “potentially suitable” based on current land uses. The obvious “not suitable” parcels (cemeteries, developed residential, undevelopable residential, developed commercial, undevelopable commercial, and all industrial) were selected out. Then the “potentially suitable” parcels were scrutinized further, and due to the large number of sites, the decision was made to only include developable (vacant) residential, developable (vacant) commercial or institutional/exempt parcels, as it is believed that these sites have the greatest potential for being developed in the near future.
- *Verify aerially:* Using a combination of ESRI aerial imagery and Google Maps, the remaining parcels were looked at to see if the size, shape and current use of the vacant/underutilized parcel was suitable. Any parcels that had a current use that was believed to be difficult to mitigate in the near future (i.e. a parking lot, numerous trees, etc.), or if the “underutilized land” was being used for another purpose (parking for a building, playing fields in a park, etc.), or if Google Maps showed that a site had already been developed (since parcel data from Assessor’s Office is from 2013,

according to MassGIS site), were removed. The parcels that scored a “yes” for size and shape and a “yes” for current use were kept, and the others were excluded using the select by attribute tool.

- *Categorize by size:* The remaining sites were then categorized by urban agriculture type according to the size criteria listed above, using select by attribute and creating a new field in the attribute table named “Ag\_cat”, with 1 = community garden, 2 = market garden, and 3 = urban farm. The urban farm sites were verified using aerial imagery again, and underutilized land was measured to confirm the total amount of available space for urban agriculture on the site. Some sites were put into other categories due to there not being enough space in the parcel after other site uses were taken into consideration. For example, the total area of a park may be 20,000 sq. feet, but once basketball courts and playgrounds are taken into account, there may only be 4,000 square feet available for urban agriculture. So instead of that site being categorized as an urban farm, it was categorized as a community garden.
- *Apply equity data*
  - Bus access: The select by location tool was used to find parcels within one quarter mile (approximately 400 meters) of a bus stop, then a new field was added to the attribute table and sites were categorized by a “1” (within one quarter mile of a bus stop) or “0” (not within one quarter mile of a bus stop). Select by attribute was then used to select out the sites not meeting this criteria.

- EJ Populations: To find parcels located within census block groups deemed Environmental Justice Populations I used the select by location tool using the MA Environmental Justice Populations (by Block Group) dataset from MassGIS.
- Over 40% renters: To find sites within block groups consisting of more than 40% renters, some preprocessing of the data was necessary. First a table join was done with the Census geography layer for Middlesex County block groups and the Housing Tenure decennial Census data from American Fact Finder. Once those tables were joined I clipped it to Everett and created a new shapefile, “block\_groups\_greater\_than\_40\_percent\_renter”. Then I created a new field (“Renters”) in that attribute table, and used the Field Calculator to calculate the percentage of renters. Next I used the select by location tool to select all UA sites that “have their centroid in the source layer feature” (“blockgroups\_greater\_than\_40\_percent\_renters”).

**4) Conduct on-the-ground analysis, or “groundtruthing”:** The remaining sites were then “groundtruthed” (physically visited and surveyed) using ranking criteria developed by the Tufts UEP 2013 Field Project Team working with the Trust for Public Land and the City of Boston on the Boston Urban Land Inventory and Assessment (Chin et al. 2013). These criteria were compiled through their literature review and interviews with Boston area farmers, and include:

1. Light exposure

2. Slope
3. Density of vegetation and debris
4. Vehicle access
5. Presence or absence of street lights, and
6. Possible water access

The first three criteria were ranked on a scale of one to four (with four being the best condition – see Table 7 below), and the last three were collected as additional criteria to be considered for farming viability, but not included in scoring. See Appendix C for land assessment scoring sheets.

**Table 7: Groundtruthing Ranking Criteria**

Attribute	Description of ranking
<b>Light exposure</b>	<ol style="list-style-type: none"> <li>1. Over 50% shaded: large trees along all borders/scattered OR building obstruction on S facing side</li> <li>2. 25-50% shaded: large trees on Southern (S, SE, SW) sides OR building obstruction on Southern sides</li> <li>3. Up to 25% shaded: trees only along borders with at least 1 side with no/few trees OR buildings on Northern (N, NE, NW) sides only</li> <li>4. Trees only along borders, with open Southern sides AND little to no building obstruction</li> </ol>
<b>Slope</b>	<ol style="list-style-type: none"> <li>1. Over 50% high slope; needs leveling with machinery</li> <li>2. 25-50% high slope; requires heavy investment/terracing</li> <li>3. Up to 25% uneven slope, some may need to be leveled with machinery</li> <li>4. Easily leveled plot, likely little labor</li> </ol>
<b>Density of vegetation and debris</b>	<ol style="list-style-type: none"> <li>1. Wooded plot OR requires contracting dumpster and removal service, use of machinery</li> <li>2. 25-50% covered in waist high growth, medium/large trees in center, rubbish removal requires mix of machinery and manual labor</li> <li>3. Up to 25% covered in waist high growth, 1+ medium trees in center, rubbish manually removable</li> <li>4. Isolated patches of overgrowth, little to no debris</li> </ol>

**5) Create site profiles:** I then created site profiles of suitable land (which can be found in Appendix D) for any site that scored a 10, 11 or 12 using the ranking



criteria described above, and compiled as a list of top sites to be developed in the near future.

## **Chapter Four: Results**

The purpose of this study is to analyze the feasibility of urban farming in post-industrial urban fringe cities, focusing on Everett, MA as a case. This chapter is broken down into my two major research questions, RQ1: “What are the challenges around land use and policy for urban farming in post industrial urban fringe cities in MA?” and RQ2: “How do these land use and policy challenges apply to Everett, MA?”

I explored the broad question of general challenges to urban farming through a literature review (Chapter Two). The first section of this chapter discusses the UF enterprise profiles I created to systematically characterize the efforts of others actually doing the work of urban farming in post-industrial urban fringe cities in MA, answering the question “What can be learned by the efforts of others? Specifically, what kinds of urban farming models exist in post-industrial urban fringe cities in MA, and how have they begun and sustained themselves?”

The second section of this chapter discusses the results of applying what I learned through the literature review and UF enterprise profiles to Everett, MA. First I summarize the findings of a content review of policy documents to identify prohibitive and supportive UA policies, then the findings of a land inventory and assessment conducted to identify potential sites for urban agriculture in Everett. In the following Chapter, Discussions and Recommendations, I outline recommendations for planners, policymakers and urban agriculture proponents to create a viable urban farming industry in Everett MA.

## MA Urban Farming Enterprise Profiles

My original question of “What kind of urban farming models exist in similar communities, and how have these projects begun and sustained themselves?” was broken down into smaller questions, particularly: “What have their successes and challenges been, and what would they recommend for Everett?” Through content analysis and interviews, I compiled objective and subjective data to answer these questions. Objective data such as organizational facts are listed in Table 8 below, and subjective data related to the successes, challenges/barriers and advice for Everett are discussed by theme below.

**Table 8: UF Enterprise Organizational Facts**

	<b>Groundwork Somerville, Somerville, MA</b>	<b>Mill City Grows, Lowell, MA</b>	<b>Nuestras Raices, Holyoke, MA</b>
<b>Legal Structure</b>	501(c)3 under Groundwork USA Trust	Social Enterprise under fiscal sponsorship of YWCA Lowell	501(c)3 Community Development Corporation
<b>Production</b>	Operate 9 schoolyard gardens, 1 library garden and 1 urban farm	Operate 5 community gardens, 6 schoolyard gardens, and 2 urban farms	Operate 11 community gardens and one 30-acre urban farm
<b>Distribution</b>	Farmers market and mobile market	Farmers markets, mobile markets, farm stand at one farm	Farmers markets, wholesale, mobile markets, farm store
<b>Staffing</b>	<ul style="list-style-type: none"> <li>• Executive Director</li> <li>• Program Manager</li> <li>• Outreach and Social Media Assistant</li> <li>• MassLIFT-AmeriCorps Service Learning Coordinator</li> <li>• Americorps-VISTA, Community Outreach<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 2 Co-Founder/Co-Directors</li> <li>• FoodCorps Service Member</li> <li>• Development/Administrative Assistant</li> <li>• Food access and mobile market manager</li> <li>• Education program manager</li> <li>• Community program manager</li> <li>• Assistant farm manager<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Executive Director</li> <li>• Volunteer/Environmental Coordinator</li> <li>• Membership Coordinator</li> <li>• Administrative Assistant</li> <li>• Farm Site Manager</li> <li>• Director of Operations and Planning</li> <li>• Farm to School Coordinator<sup>4</sup></li> </ul>

<sup>2</sup> <http://www.groundworksomerville.org/about/staff/>

<sup>3</sup> <http://www.millcitygrows.org/about-us/staff/>

<sup>4</sup> <http://www.nuestras-raices.org/contact.html>

### ***Theme 1: Results***

To capture what each organization has done, this theme is organized into two sub-themes: Production and Distribution, and Major Successes and Accomplishments.

#### Production and Distribution

As Table 7 above shows, all three enterprises operate on different scales, due to the length of time they have been in operation and the availability of land in each city, but they have similar production and distribution models. While Groundwork Somerville (GWS) operates the schoolyard garden program in Somerville, they do not oversee the city's community garden program, which is overseen by the City of Somerville's Conservation Commission. GWS also operates the city's first and only urban farm, the South Street Farm. In Lowell, Mill City Grows (MCG) operates both community and schoolyard gardens, as well as two urban farms – one on privately owned land, and one on land owned by the City of Lowell. In Holyoke, Nuestras Raices (NR) operates 11 community gardens and one 30-acre urban farm, of which 6 acres is owned by NR and 24 acres is leased from the Trustees of Reservations.

As with their production models, all three distribute using similar models, but their available resources dictate the scale of distribution. GWS distributes their produce via farmers markets and a mobile market; MCG distributes produce via farmers markets, mobile markets, and a farm stand at one of their farms; and NR distributes via farmers markets, mobile markets, community supported agriculture (CSA), wholesale, and a farm store.

In 2013 GWS's South Street farm operated on a 4,000 square foot lot with thirteen 4 x 8 beds that produced about 250 pounds of food. In 2014 they operated on the same lot with a mid-season expansion of about 3,000 square feet, which produced about 350 pounds of food. In 2015 they totaled a quarter-acre space with 1/8<sup>th</sup> of an acre acre dedicated growing space, and produced about 2,000 pounds of food. In 2013, MCG had 1/8<sup>th</sup> of an acre under production, generated \$12,000 in gross revenue, and distributed 3,000 pounds of produce. In 2014 they had 5/8<sup>th</sup> of an acre under production, generated \$30,000 gross revenue and distributed 10,000 pounds of produce. At the time of this research, they projected their 2015 goals as having 1 1/8<sup>th</sup> of an acre under production and generating \$75,000 an acre. NR's 2014 Annual Report states that they grow, share and sell 20 tons of produce per year throughout all of their sites.

#### Major Successes and Accomplishments

All three organizations began UA projects in their communities that were the first of their kind. When asked what they believed to be their biggest successes or accomplishments, it was clear that all are proud of their contribution to their communities and being seen as an important community asset.

Chris Mancini at GWS stated that their biggest accomplishments were building Somerville's first urban farm and being able to employ over 200 young people over the course of their Green Team's existence (which began in 2007). Lydia Sisson of MCG said that helping to establish the City of Lowell's community garden program was a big step, and that working with the city to create programs that a lot of people want has been their biggest accomplishment.

“Becoming engrained in the community, being needed and wanted by the community...Every time we grow there is community desire for it; our wait list is huge – we haven’t even built our next garden yet and it’s already full!” Anne Cody of NR spoke to not only the accomplishment of securing the land to create their 30-acre urban farm, but also the process of identifying it as a priority within the community and doing the work and fundraising necessary to secure the land and hold onto it. She says “I don’t think anyone is doing it bigger than we are!”

### ***Theme 2: Process***

To capture how each organization is doing what they are doing, I organized this theme into five sub-themes: Genesis of Each Venture; Barriers and Challenges; Community Issues/Impacts; and UA Policy and UA Planning Tools.

#### Genesis of Each Venture

Each organization began similarly, with someone noticing that there was a deficit of healthy food, and/or an abundance of vacant or underused space that could be used for food growing. For GWS and MCG, the municipality heavily supported the organizational startup, with City staff facilitating partnerships with fiscal sponsors and providing startup funding. For NR, community members largely pushed the startup.

According to Mancini, GWS began in 2003 when “someone noticed Somerville had a lot of empty lots, and that a Groundwork USA group could help to start greening the city.” From there it grew to creating schoolyard gardens, a Green Team youth group, and Somerville’s first urban farm, among many other programs and activities aimed at greening the city.

MCG began with the organization's co-founders asking the city for land to farm, but not getting much of a response. Then a little while later a neighborhood group approached the city and wanted to begin a community garden, so the City reached back out to co-founder Lydia Sisson and asked for her help in creating the city's first community garden. MCG grew out of that, and has been working under the fiscal sponsorship of the Lowell YWCA since 2012.

NR was created in 1992 by a group of community members in South Holyoke who were migrant farmers from Puerto Rico with strong agricultural backgrounds. They wanted to develop a greenhouse in downtown Holyoke. They found an abandoned lot, cleaned it up, and began the city's first community garden. This act of community organizing generated a network of community gardens that connect residents around issues of food and other community issues.

#### Barriers and Challenges

When asked what their short and long term challenges or barriers are, all three organizational leaders mentioned both land and funding, which have a symbiotic relationship in most cases. For GWS and MCG the challenge of land is more about the availability of land, and for NR the land challenge has a lot to do with soil contamination and remediation processes. GWS spoke to the need for larger parcels of land for financial sustainability, and the fear of redevelopment pressures. Land in Somerville is at a premium, with property taxes increasing, and a higher demand for redevelopment, which could pressure the city to use land for purposes other than urban agriculture.

MCG spoke to unavailability of land in general, but also spoke to how finding available space can be a positive and exciting challenge. Sisson stated that Lowell doesn't have a lot of vacant lots and says "The City has done a great job of putting vacant land to use, so finding land becomes an exercise in creativity." They have used two parks, two unbuildable lots (city-owned parcels that have not been sold) and school property for community gardens, and one of their urban farms is on private land while the other is on city-owned space that has conservation restrictions on it.

Cody at NR spoke to the history of industry along the Connecticut River, and how the footprint of manufacturing is now much bigger than just along the river. Their farm right on the Connecticut River is actually a traditional farming field and "in pretty good shape", and is protected by the Trustees of Reservations, but other urban agriculture sites have had to undergo extensive remediation to grow food. "It's not so much contamination in the soil as it is physical things in the soil. Buildings have been demolished and used for fill, so we have found pieces of old buildings. There is a lot of sifting, sorting and cleaning up." They work with the Holyoke Community College GIS department to identify potential community garden sites in low-income neighborhoods, test the soil, and if they need to amend it, they do. If they need to build raised beds, they do. If they need to put plastic barriers down, they do. "Each of these problems is solvable. It's far too broad to say 'No, you can't grow food here, it's contaminated.' That's just too simplistic. You need to work on a case-by-case basis."



The other barrier/challenge all three organizational leaders spoke to was funding. All are worried about sustaining their work through grants and foundation support, and want their farms to be able to generate enough revenue to make them self-sustaining. GWS's concerns were more connected to the size of the farm and economies of scale, whereas MCG and NR spoke more to wanting to rely less on grants and have more creative sources of funding. NR is working to transition their farm site to become fully supported by farmer tenant fees and revenue produced by the farm businesses. They spoke of a desire to become fully profit-making and not rely on grants and foundations. "The only thing that's sustainable is to have an actual business, participate in the local farming renaissance just like others across the Pioneer Valley. Our difference is we're agri-tourism – that's a sweet spot nobody's got."

#### Community Issues/Impacts

When asked about community issues or impacts on their organization, each interviewee had responses that were quite different and not so easily grouped. One thing that GWS and MCG touched upon was the need to be proactive when planning. GWS again spoke to the pressures of redevelopment, but that having protections for open space built into Somerville's Comprehensive Plan – *Somervision* – is a way that they are able to mitigate this challenge. MCG spoke to their process of engaging the neighborhood in community visioning sessions every time they plan a new UA site, which addresses any fear, concerns, uncertainty, etc. that the neighborhood may have about the land being used for UA. "Educating people on the benefits of UA can be helpful to win people over.

Finding where people's connection to the land or project is – and it might not be your connection – maybe it's the human part, maybe it's growing flowers, or other beautification – that's what will convince them. Find what people want so you can have some overlap” (L. Sisson).

GWS and NR also spoke to the need for more representation and inclusion of the non-white communities in either their own organizations or in the UA movement itself. Mancini of GWS spoke to the power imbalance that exists in the current board and staff at GWS, and how it is made up of mostly middle-upper class whites, while their community is extremely diverse. “This power imbalance is something that we are actively working on to fix. It takes a long time to ensure true community representation and not just tokenism, and we want to make sure we are doing it right.”

Cody of NR spoke to the need for more Latino produce in MA, and how that really spurs her organization to keep growing and expanding. Recognizing there are limits to how much cities can feed people, they work to create partnerships outside of city, to incubate Latino growers off site and bring that food back to the cities. They use their community garden sites as “test beds,” to identify food that people want to grow and eat, and that's what they grow at their farm and ask their partner farms outside the city to grow. She believes there is “serious money to be made, and the way to make that money is through developing urban agriculture, because that's where eaters are”. She fears that language barriers are creating disadvantages – both economically and nutritionally – for non-English speaking residents. “There are 660,000 Hispanics

in MA, almost all non-Mexican, that come from same relative gustatory background, and to the best of our research (working with UMass and across the state) no one is really growing their food – their healthy food is not here for them. We grow Hispanic produce in volume and can't keep it in stock. Lawrence farmers markets (through Farmer Dave) sells some, but there is no where near the volume that is necessary in MA.”

### UA Policy Tools

When asked whether UA zoning/land use regulations were in place at the start of their organizations, all interviewees answered no, but since the start of GWS a UA Ordinance/Zoning Amendment has been passed in Somerville. GWS was involved in creating the ordinance but said it hasn't affected their work much.

Surprisingly, all three interviewees did not see much value in passing UA zoning amendments or other UA-specific land use policies, but two of three spoke to the need for, and usage of, UA being integrated into current master plans, open space plans, and other community plans. MCG was part of the creation of Lowell's Master Plan (Sustainable Lowell 2025), and Sisson says there is a lot in there about sustainability and urban food production, particularly around community gardens and growing and selling local food. Mancini of GWS said that Somerville's Comprehensive Plan (*Somervision*) has a lot of protections for open space and food growing, and they feel as though these protections are just as good for UA as a specific UA policy.

Both MCG and NR spoke to the need for cultivating personal relationships with people in departments at City Hall that have power over land use (which

Cody of NR called “distinctly unglamorous positions with all the knowledge – Boards of Health, Zoning, Plumbing Inspector, etc.”), and the need for doing work on a case-by-case basis. Both NR and MCG tried to change their city ordinances to allow for backyard chickens, but neither passed. Sisson of MCG said, “We tried to change the ordinance to allow chickens but it became a political nightmare.” MCG is working within current zoning laws, and Sisson says that they “haven’t really pushed it. It’s not really worth it to amend zoning in Lowell right now; if and when the time comes, we will have enough community support behind it.” Cody of NR said, “Policy part has been stubborn; we spend a lot of time making them (policies) then disregarding them. It’s better to cultivate personal relationships at City Hall.”

#### UA Planning Tools

None of the organizations conducted a UA land inventory and assessment before the start of their UA activities, but all are working on them now and believe they are a very helpful tool for not only identifying suitable land for UA, but for engaging the public and making information about UA publically available.

#### ***Theme 3: Relationship and Values***

To capture why and for whom/with whom each organization does what they do, I organized this theme into two sub-themes: Mission, and Community and Municipal Relationships.

## Mission

In analyzing the mission statements from each organization's website, I found the following values appeared the most:

- Community/resident engagement and partnerships: eight times
- Health/well-being: six times
- Community ownership/management of land/environment: five times
- Economic development: five 5 times
- Equity/justice: four times
- Sustainability: four times
- Green: two times

The high number of non-food related values stated in each organizations' mission statements illustrates that these organizations have realized the value of urban agriculture beyond just food production. The values stated the most are around the social impacts of UA, which is in line with what the literature review found as well.

## Community and Municipal Relationships

As discussed above, all three organizations spoke to the importance of community support. Mancini of GWS talked about their role in developing and sustaining Somerville's schoolyard garden program, and the support they get from teachers, parents and school administrators, as well as their community connections through their youth-led stand at the farmers market and their mobile market. They also partner with groups outside of Somerville to support the development of urban agriculture projects throughout Greater Boston, and are seen as a trusted resource on a regional level.

Sisson of MCG said that they have a lot of community support and that she is impressed by how engaged the community is in the short time they have been in

operation. “Community support is the only thing that keep us going. There is something about helping people understand the value of UA, and seeing that they are seeing the benefits. People walk by, are excited about what we are doing, and become engaged in the work”. She talked about how engaging the community in all pieces of their work is so important, because “urban growing is done for people and by people.”

Cody of NR says, “NR is a deeply community-based organization – the community *is* the organization. We have a holistic, community driven model, which means it gets chaotic.” NR is very intentional about making the organization community-driven, by using a worker-owner membership model. They have over 500 members/*miembros*, some of whom are gardeners and tenant farmers who decide how and what NR will do, and some who are regular member-supporters – youth, seniors, and funders who put in money and sweat equity – “they have skin in the game” says Cody. Their organization is based on cultural agri-tourism, and they have made safe places for families to gather and celebrate their culture. They get seeds from Puerto Rico, which is where the majority of their gardeners and farmers originate, which reinforces their work to ensure that the community is growing and eating their healthy food.

As mentioned in the first section about the genesis of each organization, GWS and MCG spoke a lot more to municipal support than did NR. NR did not say the municipality is not supportive, but I think the organizational model and the length of time they have been in operation affords them more autonomy and less dependence on the municipality for support.

Mancini of GWS talked about how Somerville is seen as such a UA friendly city, and that it has really been the work of GWS that has been leading the UA work in the city. He believes having UA as such a focus from the Mayor's office "Helps the long-term likelihood of the land we've been using to stay land for UA if the City supports it and it has historical roots."

Sisson of MCG spoke about the City of Lowell's continued support of MCG, and how together they have created a set of comprehensive programs and practices for UA in the City of Lowell. From the Department of Planning and Development, to the Law Department, to the City Manager's Office, they have formed an informal UA partnership and "created a process that works for people."

#### ***Theme 4: Advice for Everett***

All three organizations had a lot of advice for a city like Everett just starting out in commercial urban agriculture. I have grouped their responses around the major sub-themes of policy advocacy, municipal relationships, and economics and funding.

#### Policy Advocacy

All three organizations had advice around advocating for commercial UA to be included in existing municipal plans, and in order to do this there would need to be a strong push from residents to voice their opinions and the need for UF in forums like City Council and public meetings.

The first piece of advice that both GWS and MCG had was to incorporate UA (especially UF) into existing plans that the city has – master plans, comprehensive plans, open space plans, anything that the City uses to plan.

Sisson from MCG and Cody from NR spoke to the need for resident gardeners/farmers to talk to city government about the need for UF in Everett. This could include neighborhood groups and members of UA organizations. The more people (voters) that show up and are willing to push is really key to having the voices of UA practitioners heard.

During the interview with Cody of NR we discussed some of my own experiences with gardeners in Everett for whom English is not their first language, and how they do not feel comfortable talking to City Councilors because of their accents. Anne suggested telling the Council about this, tell them the growers don't want to talk to them because they do not feel welcome, and ask them what *they* can do to help them feel welcome and encourage them to speak up. She said, "The mental link between 'you are not bright' and 'you don't know the language' has to be unbuckled," and that it is the role of "white folks in this work" (or white people leading the UA movement) to facilitate this "unbuckling."

#### Municipal Relationships

Sisson from MCG suggested bringing Everett planners and UA proponents to Lowell to talk about how they have incorporated UA into their municipal strategy, and volunteered to set up a meeting between the two cities. She suggests putting an advisory committee together of people who understand the issues, and ensuring that municipal staff are part of this committee.

Cody from NR suggested getting to know the folks with the "distinctly unglamorous positions with all the knowledge – Board of Health, Zoning, Plumbing Inspector, DPW, Housing Authority" who can support UA work along



the way. She says “Personal relationships are key in this work.” She also suggested speaking with Holyoke’s Housing Authority about how they have worked to incorporate UA into their housing units, and volunteered to facilitate a connection, again mentioning the importance of community gardens as test beds for commercial UA.

### Economics and Funding

Most of the advice around economics came from Cody at NR. She suggested reaching out to the new casino coming into Everett and that we should “be all over Wynn Casino to fund us.” She suggested saying “Help us create a local food supply; help us create growers and workers for your cafeterias, show that your presence here is positively impacting public health.”

She also stressed the need to really focus on the economic message of UA and not on all social messages:

Initially if we want a wide range of communities to buy into UA and provide the economic and infrastructure support behind it that we need, we have to make sure folks know we are not just dabbling around and having fun – this is serious business. We have exploding populations whose needs are not being met, and nobody’s growing food for these people... It’s going to come from city because that’s where eaters are – no current farmers are going to just start growing calabasa squash; we have to show it to them, have a handshake. It’s not either or – not just what you grow in the city OR what you grow in the country, we need it all - urban and rural alike - to really create the food system. Because big farmers don’t know what to grow without test beds of community gardens. It’s going to have a positive outcome, but the question is how: will it be in such a way that big business comes in and sweeps it up or will it be coming from the people? We need to use UA as tool to launch new businesses and new farmers; to change the ethnic makeup of farmers in MA, because the farming community should represent the eating community, and right now it doesn’t.

## **Applying Challenges of Urban Farming to Everett, MA**

### ***Results of Policy Analysis***

After reviewing both the City of Everett's Complete City Ordinances and Zoning Ordinance using a key word search of terms found in the Somerville Urban Agriculture Zoning Amendment and the literature, I documented which terms appeared to be supportive or prohibitive of urban agriculture.

In general I found that while "agriculture" is allowed in Dwelling Districts throughout the city and within all sub-districts within the Lower Broadway Economic Development District (LBEDD), it is not defined enough to specify whether commercial agriculture is allowed. In the *Zoning Ordinance, Section 4: Dwelling Districts: Subsection (a) Uses*, it states:

Within any dwelling district as indicated on the zoning map, no building, structure or premises shall be used and no building or structure shall be erected which is intended or designed to be used in whole or in part for any industry, trade, manufacturing, or commercial purposes, or for other than the following specified purposes: ... 13) Agriculture, horticulture or floriculture and the expansion or reconstruction of existing structures thereon for the primary purpose of agriculture, horticulture or floriculture (p. 16)

The terms "garden" and "greenhouse" also appeared to be mentioned supportively, but again without any concrete definition, it is open to interpretation. In the *Zoning Ordinance Section 4: Dwelling Districts: Subsection (a) Uses*, it states:

Within any dwelling district as indicated on the zoning map, no building, structure or premises shall be used and no building or structure shall be erected which is intended or designed to be used in whole or in part for any industry, trade, manufacturing, or commercial purposes, or for other than the following specified purposes: ... 6) Truck gardens and greenhouses, provided that any greenhouse heating plant shall be distant not less than twenty, (20) feet from any street or lot line" (p. 15).

Although the definitions are vague (or non-existent), I still categorized these as generally supportive since it specifically states that they are allowed in Dwelling Districts. However, I do believe more concrete definitions need to be included to mitigate possible prohibition of commercial urban agricultural, or urban farming, practices. I also believe these practices should be allowed in districts other than just Dwelling Districts (as they are in Somerville and Boston).

In both the Complete Ordinances and the Zoning Ordinance, the terms “animal,” “fowl,” “meat” and “vegetable” were typically mentioned together, to regulate the licensing/permitting (Ordinance) or placement (Zoning) of manufacturing, processing or selling of these items.

*The Complete Ordinance, Chapter 12: Licensing and Business*

*Regulations, Article II: Hawkers and Peddlers, Division 2: Licenses, states,*

No person, other than a person licensed under M.G.L. Ch. 101 Section 22, shall go from place to place in the city selling, bartering or carrying or exposing for sale or barter, any fruits, vegetables, meat, butter, cheese, or fish in or from any cart, wagon or other vehicle, or in any other manner without a license therefor from the board of health; provided, however, that this section shall not apply to any person who sells only fruits or vegetables raised or produced by himself or his family or fish which is obtained by his own labor or the labor of his family (p. 126).

I categorized this as prohibitive because it does not clearly state how one would prove that fruits and vegetables they sell are raised or produced by himself or his family (or an urban agriculture organization for which the person may be employed). A more comprehensive and concrete process is needed to clarify how a person, or an organization, could go about selling fruits and vegetables raised or produced by themselves.

In defining public nuisance in *Chapter 13: Offenses and Miscellaneous Provisions, Article IX: Regulating Public Nuisances, Section 13A-62.0 Public Nuisance Defined* the Complete Ordinance states that the accumulation of decayed animal or vegetable matter, and noisy (which is defined as “frequent or habitual howling, yelping, barking crowing, or other noise which greatly annoys or disturbs a person of ordinary sensibilities or any number of persons within the City” p. 187) animals or fowl, are considered public nuisances. These loose definitions could be interpreted to prohibit common agricultural practices such as the keeping of backyard hens or composting. Without specific regulations or guidelines for the keeping of backyard hens and/or composting, these agricultural practices could be prohibited.

In terms of manufacturing or processing, the *Zoning Ordinance, Section 10: Certificate of Occupancy* states that,

No application for a certificate of occupancy shall be received by the Inspector of Buildings, relating to the manufacturing or processing of anything containing animal, poultry or vegetable matter, unless such application shall contain the written approval of the Board of Health” (p. 27).

This could be prohibitive to commercial urban agriculture, as the processing of vegetable matter is a key component to any composting activity; although if it is not done within a building it could be allowed.

The term “food” was mentioned numerous times in both the Complete Ordinance and the Zoning Ordinance, but did not either support or prohibit commercial urban agricultural activities. In the Complete Ordinance there was no mention around food growing or selling; the only mention of “food” was to list

the cost of permits and license fees for food service or food retail. In the Zoning Ordinance, the term “food” was mentioned to define and regulate the location of restaurants and neighborhood markets.

Table 9 below provides a list of the search terms that were not mentioned in the Complete Ordinance or the Zoning Ordinance.

**Table 9: Terms Not Mentioned (NM)**

	Complete Ordinance	Zoning Ordinance
<b>Aquaponics</b>	NM	NM
<b>Arbor</b>	NM	NM
<b>Chicken</b>	NM	NM
<b>Cold frame</b>	NM	NM
<b>Compost</b>	NM	NM
<b>Coop</b>	NM	NM
<b>Farm</b>	NM	NM
<b>Farmstand</b>	NM	NM
<b>Fowl</b>		NM
<b>Fruit</b>		NM
<b>Greenhouse</b>	NM	
<b>Hen</b>	NM	NM
<b>Honeybee</b>	NM	NM
<b>Hoop house</b>	NM	NM
<b>Hydroponic</b>	NM	NM
<b>Meat</b>		NM

In terms of supporting urban farming activities, the most significant unmentioned terms here are “compost,” “farm,” “farmstand”. As seen in the literature review and the UF Profiles, these activities are crucial to urban farming, and not having them defined and/or regulated in either the Complete Ordinance or the Zoning Ordinance could be prohibitive.

### ***Land Inventory and Assessment***

As described in the Methodology section, the land assessment was conducted in two phases: first, a spatial analysis and aerial verification via GIS analysis, followed by groundtruthing (physically visited and surveyed) using ranking criteria. The results of both processes are detailed here.

#### GIS Analysis

As described in the Methods section, GIS analysis included the following process: identify parcels with more than 2,500 sq. feet of underutilized land; select parcels with suitable land uses; verify aerially; categorize by size; and apply equity data. Identifying parcels with more than 2,500 sq. feet of vacant or underutilized land yielded 5,759 parcels of land. Once all “not suitable” parcels were selected out (using criteria described in Methods Section on page 32), the number of potential sites was brought down to 168. Verification through examination of aerial photography brought the potential number of sites to 53. These 53 remaining sites were then categorized by urban agriculture type according to the size criteria (community gardens 2,500 – 5,000 sq. ft., market gardens 5,000 – 10,800 sq. ft., urban farms 10,800 sq. ft. (quarter-acre) or larger). While this process did not eliminate any possible sites, it did allow me to look more closely at each site to ensure that the sizes of each parcel were consistent with the UA type. Applying equity data also did not eliminate any possible sites, but did yield some interesting findings:

- Bus access: All but two sites fit the criteria of being located within one quarter mile of a bus stop (see Figure 1 in Appendix E), and they were not

excluded because one is adjacent to a hospital and the expected users of that site are within walking distance, and the other is a potential urban farm site, located on a multi-use trail and just over one quarter mile from a bus stop – a rough measurement from the second mentioned site to the nearest bus stop is approximately 540 meters, which is just a little over the criteria of one quarter mile (approximately 400 meters) from a bus stop (See Figure 2 in Appendix E).

- **EJ Populations:** Once sites within EJ populations were selected for, I found that every one of the parcels selected was located within an EJ block group, so none were removed.
- **Over 40% renters:** Only one site was not selected, and it was not excluded because it is a potential urban farm site and within ¼ mile of a bus stop.

After applying the all of the criteria above, 53 parcels were found to be potentially suitable for urban agriculture in Everett. Tables 10 and 11 below summarize these findings, and Figure 1 below shows all sites in a map. A more detailed table of site characteristics is included in Appendix F.

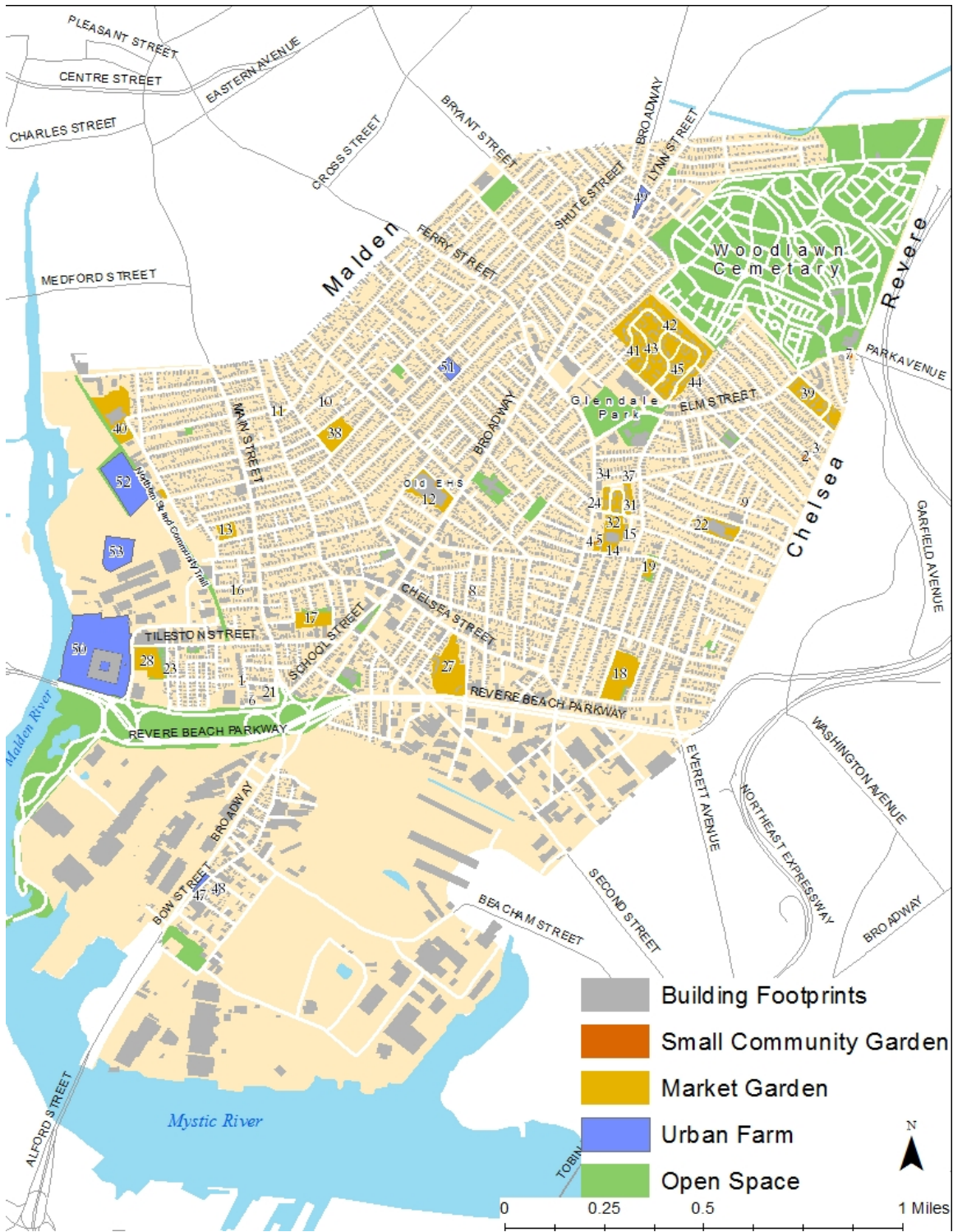
**Table 10: 53 Potential UA Sites by Land Use Type**

<b>Current Land Use of Potential UA Sites</b>	<b>Count of Sites</b>	<b>Total Area of Sites (in Acres)</b>
<b>Developable Residential</b>	10	1.22
<b>Developable Commercial</b>	1	0.15
<b>Institutional/Exempt</b>	42	78.94
<b>Totals</b>	53	80.31

**Table 11: 53 Potential UA Sites by UA Categories**

<b>Possible UA Site Categories</b>	<b>Count of Sites</b>	<b>Total Area of Sites (in Acres)</b>
<b>Community Garden</b>	10	.85
<b>Market Garden</b>	36	51.10
<b>Urban Farm</b>	7	28.36
<b>Totals</b>	53	80.31

**Figure 1: Map of all 53 potential UA sites found using GIS analysis**



Map created by Kathleen O'Brien, May 2014



### On-the-Ground Analysis

Twenty-five sites were chosen for on-the-ground analysis, or groundtruthing, which was completed during the summer of 2014. The preliminary list of 53 sites compiled using GIS analysis was narrowed to a smaller number using my own knowledge of the sites and considering feasibility of near-future usage. I chose to eliminate sites that I believed to be difficult to access in a short period of time (such as those owned by Everett Housing Authority), or private lots that I knew were in the process of being developed. I chose not to groundtruth the sites in public housing developments owned by the Everett Housing Authority due to lack of time to engage residents and staff of the Housing Authority. When presenting my findings to the community I want to ensure that these sites are still considered for future UA purposes, but I want to make sure that residents of the public housing developments are in favor of creating UA sites on this land, and are involved in the groundtruthing process.

Sixteen sites (listed in Table 12 below and further described in full site profiles in Appendix D) earned scores of 10, 11 or 12 using the ranking criteria explained in the Methodology section.

**Table 12: Groundtruthing Results: 16 Potential UA Sites**

Parcel ID	Site Address	Ownership	Land Use Category	Vacant Land	UA Category	Other Use*	Growable Land	Light Exposure	Slope	Density of Veg/Debris	Total Score
4	0 FERRY	Private	DR	3693	CG	N	3693	4	4	4	12
6	27 SPAULDING	Private	DR	2732	CG	N	2731	4	4	4	12
11	0 BUCKNAM	City of Everett	I/E	10013	MG	Park	7000	4	4	4	12
20	0 NICHOLS	Private	DR	7427	MG	N	7426	4	4	4	12
28	162 SANTILLI	Private	DC	121047	MG	N	2304	4	4	4	12
47	0 BOW	City of Everett	I/E	13384	UF	Park	10380	4	4	4	12
54	0 TREMONT	City of Everett	I/E	Unknown	MG	NSCT	7688	4	4	4	12
1	0 WEST	City of Everett	I/E	2541	CG	NSCT	3600	4	4	3	11
9	0 MT WASHINGTON	City of Everett	I/E	3325	CG	N	3325	4	3	4	11
12	538 BROADWAY	City of Everett	I/E	63900	MG	Old EHS	2480	4	3	4	11
13	0 BALDWIN	City of Everett	I/E	49411	UF	Park	11550	3	4	4	11
33	80 TREMONT	City of Everett	I/E	8096	MG	Park	8096	3	4	4	11
51	76 GLENDALE	City of Everett	I/E	49119	UF	Park	30000	3	4	4	11
5	0 FERRY	Private	DR	4527	CG	N	4527	2	4	4	10
48	0 THORNDIKE	Private	DR	13428	UF	N	13428	3	4	3	10
53	0 TREMONT	City of Everett	I/E	151606	UF	N	13000	4	3	3	10

\*Other Use codes: N = Nothing; Park = Park; NSCT = Northern Strand Community Trail (a non-motorized multi-use trail); Old EHS = Old Everett High School building, semi-vacant; Unknown = other use unknown

These sites all have good or excellent sun exposure, have little to no slope, and have little to no density of vegetation or debris, and are most likely to be chosen as suitable future UA sites. Six are privately owned, with five under the Land Use Category of Developable Residential and one under the Land Use Category of Developable Commercial; and ten are owned by the City of Everett, all under the Land Use Category of Institutional/Exempt. Of the ten Institutional/Exempt parcels, five are either part of larger parks with playgrounds or passive grassy/open spaces; two are along the Northern Strand Community Trail (a non-motorized multi-use community path); two are vacant lots; and one is located in front of an old school that is used for various purposes (including recent motion

pictures). Of these sixteen sites, five could be used for community gardens, six could be used for market gardens, and three could be used for urban farms. However, three of the privately owned sites (Parcel IDs 4, 5, and 20 below) are adjacent to one another and could be bundled to create one large urban farm.

## **Chapter Five: Discussion and Recommendations**

The purpose of this study was to analyze the feasibility of urban farming in post-industrial urban fringe cities, focusing on Everett, MA. To do this I asked two major research questions: RQ1: “What are the challenges around land use and policy for urban farming in post industrial urban fringe cities in MA?” and RQ2: “How do these land use and policy challenges apply to Everett, MA?” To answer RQ1 I conducted a literature review to gather information on a) the benefits and challenges of UA in general, and UF specifically, and b) popular planning and policy tools; and collected secondary and primary data from three UF enterprises in post-industrial urban fringe cities in MA (Holyoke, Lowell, and Somerville) to create profiles documenting their successes, challenges and advice for Everett. To answer RQ2 I took what I learned from the literature review and UF profiles to conduct a content review of policy documents to identify supportive and prohibitive UA policies in Everett, and conducted a land inventory and assessment using GIS and on-the-ground analysis to identify possible sites for UA in Everett.

This chapter synthesizes and draws connections between the literature review and results of the UF enterprise profiles, Everett policy review and Everett land inventory and assessment. It concludes with recommendations for planners, policymakers and UA proponents in Everett to create a viable urban farming industry in Everett MA.

In general, both the literature review and the UF profiles illustrated similar challenges to UF, with the biggest challenges for UF enterprises being land

availability/contamination and cost/funding. For Groundwork Somerville (GWS) and Mill City Grows (MCG), the challenge of land was more about the availability of land in their densely populated communities with high redevelopment demands, and for Nuestras Raices (NR) the land challenge had a lot to do with soil toxicity and remediation processes. The literature somewhat echoed these challenges, by stating that land values in cities with dense development are costly and therefore, the majority of urban farmers often lease or informally use land to grow food and lack long-term land access (Brown and Carter 2002). Land access issues can lead to instability and uncertainty for farmers, as they could essentially be kicked off the land if the landowner has an opportunity to sell or develop the land at a higher price. However, the literature largely ignored the contamination problems often faced by post-industrial urban fringe cities.

While the literature predominantly mentioned startup costs as a major challenge, the UF enterprises spoke more to sustaining their operations in the long term without having to rely on grants or foundations for their work. All three UF enterprises profiled are non-profits operating UA activities other than just urban farming, so while the literature focused generally on how high land costs can affect a farmer's ability to purchase land, the UF enterprises were more concerned with keeping their operational costs low while also being able to sell their produce at affordable rates for their lower-income populations. This draws the conclusion that grants are good to get a UF project started, but that UF enterprises must work to create a sustainable business model in order to thrive in the long-term.

The role that policy can play in mitigating both of these challenges is a major connection to note. The literature review revealed that municipal policies can either support or prohibit urban farming, and suggested that incorporating urban agriculture into municipal policies as a comprehensive component of the land-use and permitting processes can increase the benefits while decreasing the challenges detailed above.

In terms of access to land, policies can promote and support UA activities through such mechanisms as protective zoning and user-friendly permitting (Morales and Mukjerji 2010; Ackerman and Wooten 2011). The literature also stated that local government agencies can designate land or districts dedicated to urban agriculture through easements, zoning overlay districts or other land use policies (Flournoy 2012).

In terms of mitigating challenges associated with cost, municipalities also have the ability to sell public land at below market value or donate land directly to urban farming enterprises (Morales 2012). The literature discussed how farm operations often require large upfront investments before profits are made, and many new farmers may struggle to absorb and process the municipal policies and permits required to even start farming. Farmers who lack business skills and knowledge, especially lower-income farmers, may find that traditional financial assistance mechanisms (such as bank loans) are barriers to a successful startup (Morales 2012).

## **Connecting challenges to Everett**

Surprisingly, when asked about policies in their municipalities prohibiting or supporting UF activities, all three UF enterprise interviewees responded that trying to change policies (i.e. amending zoning) for UF wasn't worth the time or energy, and that the work is best done on a case by case basis through personal relationships with municipal staff. However, they also strongly advised to ensure that UF was included in planning documents such as comprehensive plans, open space plans, etc.

I think that while these particular organizations have had success in being able to conduct their UF activities within their current political environments (and Everett has too), it is important that UA in general and UF in particular are protected and supported no matter what the political climate. Personal relationships are important (as all three interviewees stressed), but the informality of doing this work on a case-by-case basis does not ensure success in the long run. And while I also believe that getting UA and UF into comprehensive plans and open space plans is very important, and a good first step, those planning documents unfortunately do not carry any sort of legal weight, and can be revised (or even ignored) at any time.

Even after hearing all three interviewees say that creating urban agriculture ordinances or amending zoning is not worth it, I still believe this is something that should be pushed for in Everett; and perhaps zoning is something that could be tackled once support for UA has been built more strongly in the community, and success has been demonstrated. To date, Everett's first and only

urban agricultural organization, the Everett Community Growers (ECG), has been in the process of building this community support. They have created two community gardens with approximately 35 individuals and families growing food for personal consumption, and are currently in the process of creating an urban farm that will be dedicated to growing food for local food pantries in 2016, with plans to become a commercial operation in the future. They are also in the process of creating an advisory board and working with various local and regional supporters to establish formal urban agriculture processes in Everett. While not an established 501c3 non-profit organization, ECG operates under the fiscal sponsorship of a local non-profit, La Comunidad, Inc. and is supported administratively by the Everett Community Health Partnership (ECHP), an initiative of the Cambridge Health Alliance.

The following results support my belief that creating an urban agriculture ordinance in Everett is necessary. Firstly, the Complete Ordinance and Zoning Ordinance I reviewed did not have concrete definitions of what agriculture is, and only said it was allowed in Dwelling Districts. This content analysis also found that greenhouses and truck gardens are allowed in Dwelling Districts, but again did not define exactly what those are, as they do in the Somerville UA Ordinance. The Complete Ordinance and Zoning Ordinance also did not mention some very important UF terms, such as farm, farmstand and compost. Not having these terms listed as acceptable uses, and not having them recognized with definitions, could ultimately prohibit the commercial growing and selling of food in Everett. In addition, the land inventory and assessment did not take possible zoning



restrictions into account, and since I did not overlay my land inventory and assessment with the City's zoning map, it leads me to question whether the 16 sites I found would even be allowed under the current zoning? I believe that creating an urban agriculture ordinance that amends current zoning can ensure that the development pressures facing Everett do not limit the availability and protection of land for urban agriculture.

### **Recommendations for Everett**

Based on the findings above, and the advice for Everett from the UF enterprise interviews, I recommend the following short, intermediate and long-term actions for planners, policymakers and UF proponents in Everett, which loosely follows Drescher's (2000) suggestions for a successful and comprehensive policy approach found in the literature review:

#### ***Short-Term Recommendations***

The first short-term recommendation is for Everett to create an urban agriculture policy advisory committee made up of diverse stakeholders. This advisory committee should include planners, municipal staff involved in land use and permitting, policy-makers, and UF proponents (especially current food-growers from Everett's diverse populations) that work together to ensure that UF is incorporated into municipal policies as a comprehensive component of the land-use and permitting processes. The Everett Community Growers is currently working on creating an advisory committee, and I recommend that this group include the aforementioned stakeholders, and act as the city's UA policy advisory committee. This recommendation is connected to MCG's advice to create an

advisory committee, and to both GWS's and NR's comments on the need for more representation and inclusion of the non-white communities in either their own organizations or in the UA movement itself. UA proponents need to ensure that the residents of the community (both the "growers" and "eaters" as Cody from NR calls them) are at the table in decision-making roles and not merely being consulted on decisions that are being made by the largely white establishment. As Manicini at GWS states, "It takes a long time to ensure true community representation and not just tokenism, and we want to make sure we are doing it right." I want to make sure we in Everett do it right also. This recommendation also connects to the literature review's finding that in both community gardens and urban farms, the advocacy and coalition building needed to overcome structural barriers of zoning, land-use conflicts, and resource shortages, typically involve a wide range of cross-sectoral partners and often employ a citizen-led approach to knowledge and solutions (Wekerle 2004; Welsh and MacRae 1998, as cited in Mendes et al., 2008). This participatory planning approach has been shown to contribute to increased citizen participation and buy-in at all levels, as the policies developed meet the needs of both the municipality and its constituents, particularly marginalized groups (Mougeot 2006, as cited in Mendes 2008).

The second short-term recommendation is to have the advisory group visit Lowell, per Lydia Sisson's offer to share their process of working together to incorporate UA into their planning processes. The final short-term recommendation is for an advocate of UF to be included in the creation of the

next City of Everett Open Space and Recreation Plan. This recommendation is connected to findings in the literature, the interviews with UF enterprises, the policy review, and the land inventory and assessment. The current City of Everett Open Space and Recreation Plan expires in 2017, and another one should be created within the near future. I recommend that this advisory committee be put in place before the end of 2016 so that the voices of diverse UF proponents can be included in this planning document. Also, since the land inventory and assessment found most land available for UA to be owned by the City of Everett with land uses as Institutional/Exempt (especially parks), I believe incorporating UA and UF into this document could be an excellent first step at creating formal municipal support for a viable urban farming industry in Everett.

### ***Intermediate Recommendations***

Three intermediate recommendations can be made to Everett based on the results of this thesis. The first is to ensure the inclusion of the economic benefits of UF in any and all advocacy documents and activities. This speaks to the findings in the literature review about the use of UA for job training and workforce development programs, and especially the interview with Cody of Nuestras Raices. Cody was adamant about the fact that UA could and should be used as tool to launch new businesses and new farmers, especially for and by newly arrived populations. UF proponents in Everett could use the economic findings from the literature review to create a set of speaking points on the economic benefits of UF. However, in addition to the economic benefits, it is also important to highlight the other benefits, and as Sisson at MGC says “find what

people want so you can have some overlap.” Specific to this recommendation is for the advisory committee to work with new developers in Everett (particularly the new resort casino) on ways to create urban farms to not only provide economic benefits to the community (in the form of jobs) but also to offset the possible negative environmental impacts of large-scale developments.

Finally, it is important that an advocate for UF be included in the process of creating neighborhood-level Master Plans and advocate for a City-wide Master Plan that includes UF. The City of Everett does not currently have a citywide Master Plan, but has recently created a set of neighborhood-level master plans. The UA Advisory committee described above could conduct a content review (similar to the policy review conducted in this thesis) to identify where and if UF is supportive or prohibitive, and use their findings to create recommendations to be included in a citywide Master Plan. A piece of this could be to encourage UA and UF in both current and future public and private developments.

### ***Long-Term Recommendations***

The key long-term recommendation for Everett is to create an urban agriculture ordinance to amend current zoning with accompanying user guide, similar to Somerville’s *ABC’s of Urban Agriculture*, which lays out all definitions and allowed UA activities within the City of Somerville. This user guide should also be translated into the top languages spoken in Everett (Spanish, Portuguese and Haitian Creole). This is also a recommendation for the UA advisory committee described above, but is included as a long-term recommendation and can be seen as a goal for this group to work toward. This echoes Drescher’s (2000)

recommendation of providing a legal framework for urban agriculture activities, outlining regulatory access to land, water, urban organic wastes, and wastewater, and institutionalizing administrative procedures for how residents and community groups can gain access to these resources.

### **Research Limitations**

While the purpose of this research was to analyze the feasibility of UF in post-industrial urban fringe cities, its limited scope and focus on Everett, MA prevents broad generalizations. However, I do believe it will be helpful for planners, policymakers and UA proponents in Everett. Some limitations to this research are as follows.

In creating the UF profiles I focused on what I believed to be three “successful” UF enterprises in MA that I had a connection with in some way, which could have limited the validity of results. The small number of interviews conducted provided insightful but limited perspectives into the challenges of UF in post-industrial urban fringe cities.

In my policy review I did not look at anything other than the Complete Ordinance and Zoning Ordinance since I was focusing on legally binding policies. I could have also looked at the current Open Space and Recreation Plan and neighborhood master plans (City of Everett does not have one comprehensive Master Plan), as these types of documents seemed to be most closely aligned with what the interviewees used as their basis for being able to conduct UF activities in their cities. Due to this, in my recommendations above, I suggest this as an intermediate step for the UA advisory committee.

In my GIS analysis, the biggest difficulty I encountered was thinking that I could take what others have done in terms of urban land inventories, and apply the exact (or very similar) processes to Everett. However, I found that each community has different sources of data (and different degrees of quality of data) available, and at the beginning it was tough to figure out which sources of data for Everett were best to use. In terms of parcel data, I ended up going with MassGIS's Parcel and Assessor's 2013 data, thinking it would be as up-to-date as I could get, but then when I was conducting aerial verification of sites, a lot of sites listed as vacant in the Assessor's data were actually built upon already. The aerial verification took longer than planned, because I also utilized Google Maps, but it was worth it to be able to actually see the parcels aerially before planning the groundtruthing.

### **Conclusions**

I can draw two major conclusions from the results of this research, which stemmed from Everett community members' desire to access more land for personal and community food growing, land and supportive policies for commercial food growing and selling, and more land for community building and economic development around food. The first is that municipalities need to have the political will to create UF-friendly policies to create and support commercial urban agriculture, which could require a lot of advocacy on the part of UF proponents. The second is that UF enterprises need to create a sustainable business model and treat UF as a legitimate business in order for it to be economically sustainable. In connecting these conclusions to Everett, MA, I

believe that my recommendation of creating a UA advisory committee can begin the process of creating this political will and help future UF enterprises become economically sustainable. By having municipal staff who know the current land use and permitting processes work together with UF proponents who know the benefits and challenges of UF, a supportive set of policies and practices could be developed to institutionalize urban farming in Everett, MA. This process could take some time, but if a group such as the Everett Community Growers makes the creation of this advisory committee a priority, I am confident that it will come to fruition. There is also a sense of urgency for this committee to come together rapidly, as the city's current Open Space and Recreation Plan expires in 2017, and a new one must be created for 2018 – 2022. If this committee can come together to ensure UF is included in this planning document, Everett could be on its way to creating a successful urban farming industry.

## **Appendix A: Interview Questions**

I used the following interview questions as a guide for the interview conversations:

1. What is your position in your organization?
2. How many years have you been in this position?
3. What is the mission of your organization?
4. What are some of your major successes?
5. What do you see as some of the short and long-term barriers or challenges for this venture?
6. Is community support important to your organization? If so, at what level? Do you feel you have that support?
7. Is there opposition or other community issues that impact your organization?
8. What was the political environment at the start of this venture? For example, was the municipal administration open to and supportive of urban agriculture? What is the political environment now?
9. Was a land inventory conducted prior to the startup of this venture? If so, who conducted it, and what were the general findings? Are these findings publicly available?
10. Were there urban agriculture zoning/land use regulations in place at the start? Are there now? Was anyone from your organization involved in passing supportive urban ag policies?
11. What advice would you offer urban agriculture proponents in a city like Everett just starting out in the urban farming industry?



## Appendix B: Policy Analysis Results Tables

**Complete Ordinance Results Table**

Key word	Where found	How mentioned
<b>Agriculture (1)</b>	Chapter 13: Offenses and Miscellaneous Provisions, Article IX: Regulating Public Nuisances, Section 13A-62.0 Public Nuisance Defined	In defining noxious weeds, mentions weeds can harm agriculture
<b>Agriculture (2)</b>	Chapter 15 (Sanitary Sewers and Storm Drains)	In defining pollutants, mentions agricultural runoff as a potential source of pollution
<b>Animal (1)</b>	Chapter 13: Offenses and Miscellaneous Provisions, Article IX: Regulating Public Nuisances, Section 13A-62.0 Public Nuisance Defined	Subsection (f) "Public Health" (3) Breeding Places for Vermin, Etc. States that the accumulation of decayed animal or vegetable matter is a public health nuisance.
<b>Animal (2)</b>	Chapter 13: Offenses and Miscellaneous Provisions, Article IX: Regulating Public Nuisances, Section 13A-62.0 Public Nuisance Defined	Subsection (g) "Public Peace and Safety" states that noisy ("frequent or habitual howling, yelping, barking crowing, or other noise which greatly annoys or disturbs a person of ordinary sensibilities or any number of persons within the City") animals or fowl are considered a public nuisance
<b>Aquaponics</b>	No mention	
<b>Arbor</b>	No mention	
<b>Chicken</b>	No mention	
<b>Cold frame</b>	No mention	
<b>Compost</b>	No mention	
<b>Coop</b>	No mention	
<b>Cultivate</b>	Chapter 12: Licenses and Business Regulations	Sections 12 – 15 Regulating flowering plants and related items, states that No person shall sell flowering plants, whether real, artificial, permanent, temporary, wild, cultivated, either on open, private property or from a tent, booth, building structure on said private property without first obtaining a letter of authorization from the owner of said property and a license from the city council. States that flowering plants can only be sold on private land with letter from land owner and \$50 license; and can only sell flowering plants or "related items" on public land with license, permit, and approval from City Council.
<b>Farm</b>	No mention	
<b>Farmstand</b>	No mention	
<b>Food</b>	No mention around food growing or selling, except for mention of cost of permits and license fees for food service or food retail	

<b>Fowl</b>	Same as "Animal (2)" above	Same as "Animal (2)" above
<b>Fruit</b>	Chapter 12: Licenses and Business Regulations, Article II: Hawkers and Peddlers. Division 2: Licenses	Section 12-41. Required; exception. States that No person, other than a person licensed under M.G.L. Ch. 101 Section 22, shall go from place to place in the city selling, bartering or carrying or exposing for sale or barter, any fruits, vegetables, meat, butter, cheese, or fish in or from any cart, wagon or other vehicle, or in any other manner without a license therefor from the board of health; provided, however, that this section shall not apply to any person who sells only fruits or vegetables raised or produced by himself or his family or fish which is obtained by his own labor or the labor of his family. (Rev. Ords. 1976, Pt. 2, Ch. 8, § 1)
<b>Garden</b>	Chapter 13: Offenses and Miscellaneous Provisions, Article IX: Regulating Public Nuisances, Section 13A-62.0 Public Nuisance Defined	Subsection (f) Public Health (10) Noxious Odors, Etc. Defines noxious odors and states that "Nothing in this section shall be construed to prohibit odors of a temporary nature or those emitted by cooking or fertilizing a garden."
<b>Greenhouse</b>	No mention	
<b>Hen</b>	No mention	
<b>Honeybee</b>	No mention	
<b>Hoop house</b>	No mention	
<b>Hydroponic</b>	No mention	
<b>Meat</b>	Same as "Fruit" above	Same as "Fruit" above
<b>Plant</b>	Same as "Cultivate" and "Agriculture (1)" above	Same as "Cultivate" and "Agriculture (1)" above
<b>Produce</b>	No mention	
<b>Vegetable</b>	Same as "Fruit" and "Animal (1)" above	Same as "Fruit" above and "Animal (1)" above

### Zoning Ordinance Results Table

Key word	Where found	How mentioned
<b>Agriculture (1)</b>	SECTION 4. DWELLING DISTRICTS. Subsection (a) Uses	Within any dwelling district as indicated on the zoning map, no building, structure or premises shall be used and no building or structure shall be erected which is intended or designed to be used in whole or in part for any industry, trade, manufacturing, or commercial purposes, or for other than the following specified purposes: (13) Agriculture, horticulture or floriculture and the expansion or reconstruction of existing structures thereon for the primary purpose of agriculture, horticulture or floriculture. (Ord. of 4-29-91)
<b>Agriculture (2)</b>	SECTION 28. STORM WATER MANAGEMENT AND LAND	AGRICULTURE: The normal maintenance or improvement of land in agricultural or aquaculture

	DISTURBANCE ORDINANCE. Subsection (2) Definitions	use, as defined by the Massachusetts Wetlands Protection Act and its implementing regulations.
<b>Agriculture (3)</b>	Appendix A: Table of Use Regulations	Use Category: Exempt. "Agriculture, horticulture or floriculture and the expansion or Agriculture, horticulture or floriculture and the expansion or reconstruction of existing structures thereon for the primary purpose of agriculture, horticulture or floriculture."
<b>Animal (1)</b>	SECTION 10. CERTIFICATE OF OCCUPANCY.	"No application for a certificate of occupancy shall be received by the Inspector of Buildings, relating to the manufacturing or processing of anything containing animal, poultry or vegetable matter, unless such application shall contain the written approval of the Board of Health."
<b>Animal (2)</b>	SECTION 16. TRAILORS AND MOBILE HOMES. Subsection (1602) Definitions	"In this ordinance the term "trailer" or "mobile home" shall mean any of the various types of vehicles or structures which depend for mobility on an attached vehicle or other propelling apparatus, and which are used or equipped to be used for human or animal habitation, or for a business purpose, but excluding vehicles used for the transportation of materials and products. Any "trailer" or "mobile home" or similar structure from which the wheels are removed, whether or not it is anchored to a foundation, or supported by a foundation, or by incorporation into a fixed structure, or otherwise has its mobility reduced, shall be considered a building or dwelling and shall be subject to all laws applicable to buildings and structures.
<b>Animal (3)</b>	SECTION 24. TELECOMMUNICATIONS OVERLAY DISTRICT. Subsection 1.0 Use Restrictions	<i>"The following uses shall not be permitted within the Overlay District: 1.11 Animal Processing"</i>
<b>Animal (4)</b>	SECTION 30. LOWER BROADWAY ECONOMIC DEVELOPMENT DISTRICT ("LBEDD"). Subsection (10) Administration. G. Certificate of Occupancy	"No application for a certificate of occupancy shall be issued relating to the manufacturing or processing of anything containing animal, poultry or vegetable matter, unless such application shall contain the written approval of the Board of Health. One (1) copy of any such plans, if and when approved by the Building Commissioner, shall be returned to the applicant with such permit as may be granted."
<b>Aquaponics</b>	No mention	
<b>Arbor</b>	No mention	
<b>Chicken</b>	No mention	
<b>Cold frame</b>	No mention	

<b>Compost</b>	No mention	
<b>Coop</b>	No mention	
<b>Cultivate</b>	mentioned 3 times in marijuana facility ordinance (pp. 151 - 161)	
<b>Farm</b>	No mention	
<b>Farmstand</b>	No mention	
<b>Food</b>	SECTION 20. BUSINESS LIMITED DISTRICT IDENTIFICATION. Subsection (a) Uses	“In any Business Limited District, as indicated on the zoning map, no building, structure or premises shall be used and no building or structure shall be erected which is intended or designed to be used except as provided herein: 5. Restaurants, including fast food, provided that there are no drive through facilities.”
	SECTION 24. TELECOMMUNICATIONS OVERLAY DISTRICT. Subsection (1.0) Use Restrictions	<i>“The following uses shall not be permitted within the Overlay District: 1.12 Food Processing”</i>
	SECTION 26 RIVER FRONT DISTRICT. Subsection (b) Uses	“In the Riverfront District, as indicated on the zoning map, no building, structure or premises shall be used and no building or structure shall be erected which is intended or designed to be used except as provided herein: 6. Restaurants, including fast food, provided that there are no drive through facilities.”
	SECTION 30. LOWER BROADWAY ECONOMIC DEVELOPMENT DISTRICT (“LBEDD”). Appendix C. Definitions	“Fast Order Food Establishment – an establishment whose primary business is the sale of food for consumption on or off the premises which is primarily intended for immediate consumption rather than for use as an ingredient or component of meals, available upon a short waiting time and packaged or presented in such a manner that it can be readily eaten inside or outside the premises where it is sold.”
		Neighborhood Market – A pedestrian-oriented grocery/specialty market store offering food products packaged for preparation and consumption away from the site of the store and oriented to the daily shopping needs of surrounding residential areas. Neighborhood markets are less than 15,000 square feet in size and operate eighteen (18) or fewer hours per day. Neighborhood markets may include deli or beverage tasting facilities that are ancillary to the market/grocery portion of the use.
		Restaurant – any business establishment principally engaged in serving food, drink, or refreshments, whether prepared on or off the

		premises provided, however, that drive through windows are not allowed.
<b>Fowl</b>	No mention	
<b>Fruit</b>	No mention	
<b>Garden</b>	SECTION 4. DWELLING DISTRICTS. Subsection (a) Uses.	“Within any dwelling district as indicated on the zoning map, no building, structure or premises shall be used and no building or structure shall be erected which is intended or designed to be used in whole or in part for any industry, trade, manufacturing, or commercial purposes, of for other than the following specified purposes: 6) Truck gardens and greenhouses, provided that any greenhouse heating plant shall be distant not less than twenty, (20) feet from any street or lot line.”
<b>Greenhouse</b>	Same as “Garden” above	Same as “Garden” above
<b>Hen</b>	No mention	
<b>Honeybee</b>	No mention	
<b>Hoop house</b>	No mention	
<b>Hydroponic</b>	No mention	
<b>Meat</b>	No mention	
<b>Plant</b>	No mention having to do with food or edible plants	
<b>Produce</b>	No mention	
<b>Vegetable</b>	Same as “Animal (1)” above	Same as “Animal (1)” above

## Appendix C: Land Assessment Scoring Sheets

<b>GROUND TRUTHING FORM</b>		
Parcel Address: _____		Parcel ID#: _____
Name of Surveyor(s): _____		Date of Visit: _____
Is Parcel Vacant? Y ___ N ___		
<b>OBSERVATIONS OF PHYSICAL REQUIREMENTS</b>		
<b>Attribute</b>	<b>Score Description</b>	<b>Score + Explanation</b>
<b>Light Exposure</b>	<p><b>1:</b> Over 50% shaded: large trees along all borders/ scattered OR building obstruction on S facing side</p> <p><b>2:</b> 25-50% shaded: large trees on Southern (S, SE, SW) sides OR building obstruction on Southern sides</p> <p><b>3:</b> Up to 25% shaded: trees only along borders with at least 1 side with no/few trees OR buildings on Northern (N, NE, NW) sides only</p> <p><b>4:</b> Trees only along borders, with open Southern sides AND little to no building obstruction</p>	
<b>Slope</b>	<p><b>1:</b> Over 50% high slope; needs leveling with machinery</p> <p><b>2:</b> 25-50% high slope; requires heavy investment/ terracing</p> <p><b>3:</b> Up to 25% uneven slope, some may need to be leveled by machinery</p> <p><b>4:</b> Easily leveled plot, likely little labor</p>	
<b>Density of Vegetation + Debris</b>	<p><b>1:</b> Wooded plot OR requires contracting dumpster and removal service, use of machinery</p> <p><b>2:</b> 25-50% covered in waist high growth, medium/large trees in center, rubbish removal requires mix of machinery and manual labor</p> <p><b>3:</b> Up to 25% covered in waist high growth, 1+ medium trees in center, rubbish able to be removed manually</p> <p><b>4:</b> Isolated patches of overgrowth, little to no debris</p>	
		<b>Total Score:</b> _____

**CONSIDERATION OF FARMER PREFERENCES**

Existing Structure Inventory (fencing, concrete, etc):

Vehicle Access (Street parking restrictions, meters, curb cuts, ADA accessibility, etc):

Number, Type and Location of Abutters:

Number of Street Lights:

Visible On-site Water Access?

**Additional Observations:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Appendix D: Site Profiles

### **27 Spaulding Street**

Ward 6

Parcel ID: 6

Size of parcel: 2,732 sq. ft.

Land Use: Developable

Residential

Owner: Santo G. Signorino

#### CRITERIA QUALIFICATIONS

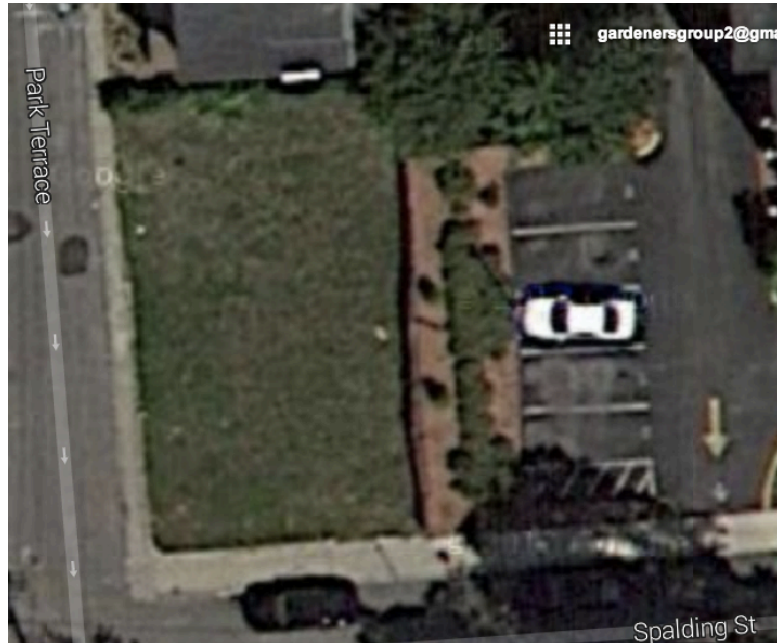
- Light exposure: 4/4
- Slope: 4/4
- Density of vegetation and debris: 4/4

**Total Score: 12/12**

#### CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within ¼ mile of bus stop
- Existing Structure Inventory: Fence on W side
- Vehicle Access: Street parking
- Street Lighting: Y
- Visible Water Access: No, but possibility of using nearby apartments
- Number and Type of Abutters: 1 business (Devencenzo and Sons), 1 house and 1 apartment building

BEST UA TYPE: CG





## **Bucknam Street Park**

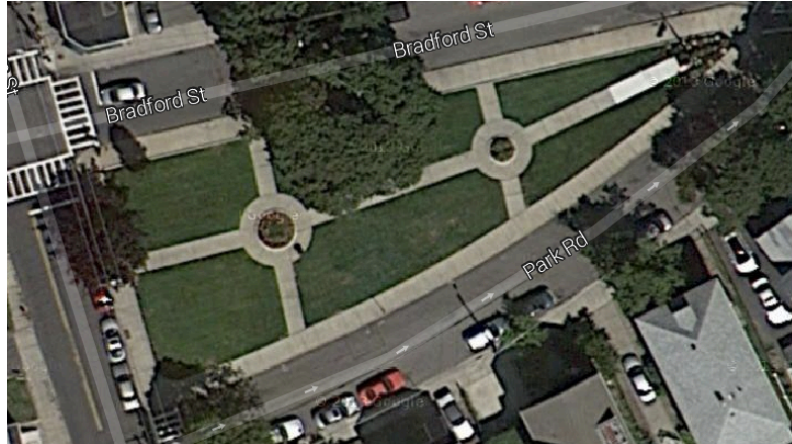
Ward: 5

Parcel ID: 11

Size of parcel: 7,000 sq. ft

Land Use: Institutional/Exempt

Owner: City of Everett



### CRITERIA QUALIFICATIONS

- Light exposure: 4/4
- Slope: 4/4
- Density of vegetation and debris: 4/4

**Total Score: 12/12**

### CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: within ¼ mile of bus stop
- Existing Structure Inventory: Flower planters, walkways, electrical box, light post
- Vehicle Access: Street parking
- Street Lighting: Yes
- Visible Water Access: Yes
- Number and Type of Abutters: Residences on all sides, 1 retailer

BEST UA TYPE: CG or MG

## **Santilli Highway**

Ward 6

Parcel ID: 28

Size of parcel: 2,304 sq. ft.

Land Use: Developable Commercial

Owner: ND Everett Retail, LLC

### CRITERIA QUALIFICATIONS

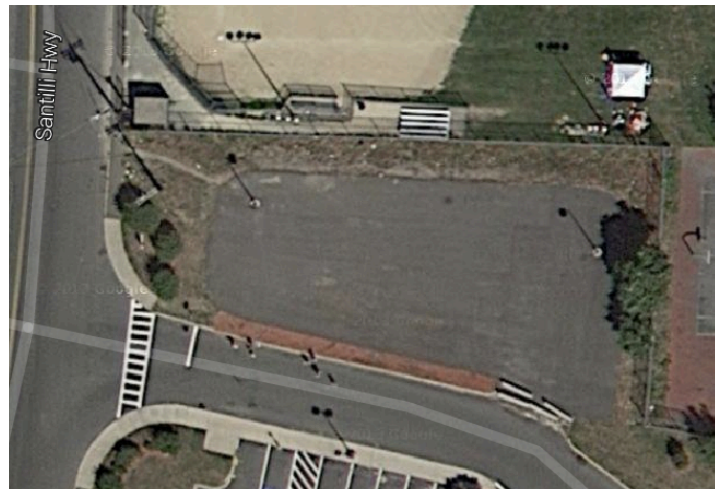
- Light exposure: 4/4
- Slope: 4/4
- Density of vegetation and debris:  
4/4

**Total Score: 12/12**

### CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within ¼ mile of bus stop
- Existing Structure Inventory: All paved
- Vehicle Access: Street and Best Buy parking lot
- Street Lighting: Yes
- Visible Water Access: No
- Number and Type of Abutters: Best Buy, Sacramone Park, BNY Mellon

BEST UA TYPE: CG with raised beds



## **Bow Street and Broadway**

Ward: 1

Parcel ID: 47

Size of parcel: 13,384 sq. ft.

Land Use: Institutional/Exempt

Owner: City of Everett

### CRITERIA QUALIFICATIONS

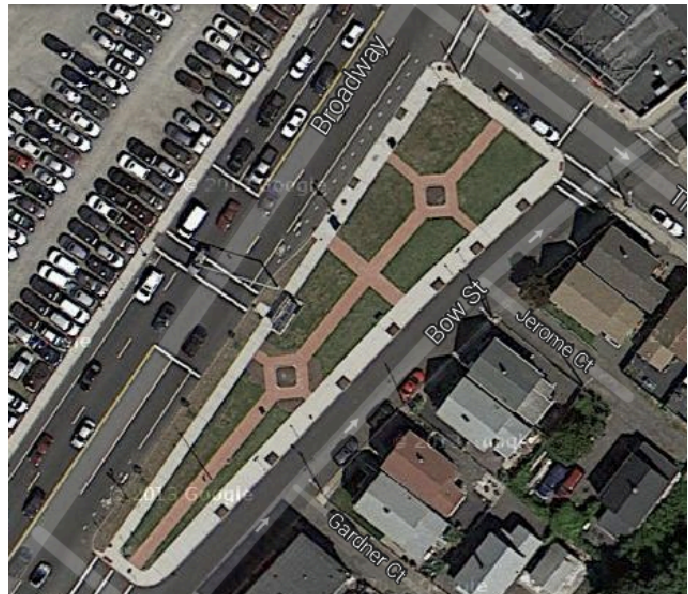
- Light exposure: 4/4
- Slope: 4/4
- Density of vegetation and debris: 4/4

**Total Score: 12/12**

### CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within ¼ mile of bus stop
- Existing Structure Inventory: Sidewalks, pathways and floral arrangements
- Vehicle Access: Street parking
- Street Lighting: Yes
- Visible Water Access: Yes
- Number and Type of Abutters: 3 businesses (Malden Auto, LaPerle Restaurant and L&I Limo), Residences

BEST UA TYPE: UF



**Northern Strand Community Trail/7-Acre Park**

Ward: 6

Parcel ID: 54

Size of parcel: 7,688 sq. ft.

Land Use: Institutional/Exempt

Owner: City of Everett

CRITERIA QUALIFICATIONS

- Light exposure: 4/4
- Slope: 4/4
- Density of vegetation and debris: 4/4

**Total Score: 12/12**

CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within 1/4 mile of bus stop
- Existing Structure Inventory: None
- Vehicle Access: Parking at Madeline English School or street
- Street Lighting: Lights in 7-acre Park
- Visible Water Access: Sprinkler at 7-acre
- Number and Type of Abutters: 2 businesses (GTA and Velocity Screenprint)

BEST UA TYPE: CG or MG



**Ferry Street and Nichols Street**

Ward: 2

Parcel ID: 4, 5 and 20 (clustered)

Size of parcels: 3,693; 4,527; and 7,427 sq. ft.

Land Use: Developable Residential

Owner: Nichols, LLC (4 and 20) and Richard B. Sheehan (5)

CRITERIA QUALIFICATIONS

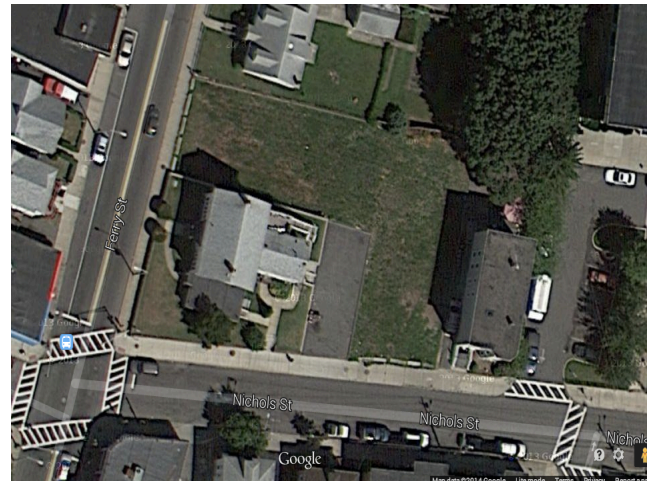
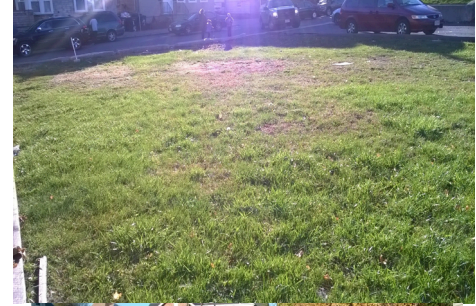
- Light exposure: 3/4
- Slope: 4/4
- Density of vegetation and debris: 4/4

**Total Score: 11/12**

CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: within ¼ mile of bus stop
- Existing Structure Inventory: None
- Vehicle Access: Street parking
- Street Lighting: Y
- Visible Water Access: N
- Number and Type of Abutters: 2 residences, 1 gas station

BEST UA TYPE: If clustered together could be UF



**West Street (Northern Strand Community Trail)**

Ward: 6

Parcel ID: 1

Size of parcel: 4,600 sq. ft.

Land Use: Institutional/Exempt

Owner: City of Everett

CRITERIA QUALIFICATIONS

- Light exposure: 4/4
  - Slope: 4/4
  - Density of vegetation and debris: 3/4
- Total Score: 11/12**



CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within ¼ mile of bus stop
- Existing Structure Inventory: None
- Vehicle Access: Small parking lot in front of 42 West St. and street parking on Wellington Ave
- Street Lighting: None
- Visible Water Access: None
- Number and Type of Abutters: Residences on either side of trail

BEST UA TYPE: CG or MG (depending on size)



## **Mt. Washington Street and Alpine Ave**

Ward: 2

Parcel ID: 9

Size of Parcel: 3,325 sq. ft.

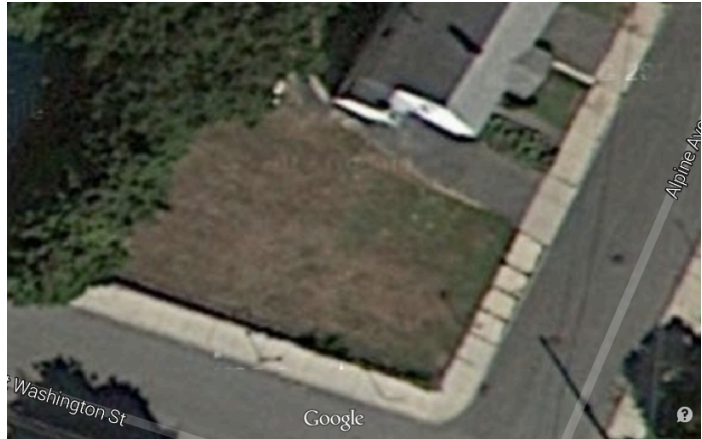
Land Use: Institutional/Exempt

Owner: City of Everett

### CRITERIA QUALIFICATIONS

- Light exposure: 4/4
- Slope: 3/4
- Density of vegetation and debris: 4/4

**Total Score: 11/12**



### CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within ¼ mile of bus stop
- Existing Structure Inventory: Fence on North side
- Vehicle Access: Street parking
- Street Lighting: 3 streetlights
- Visible Water Access: No
- Number and Type of Abutters: Residences next to and across street; Whidden Hospital nearby.

BEST UA TYPE: CG

## **Baldwin Street Park**

Ward: 6

Parcel ID: 13

Size of parcel: 11,550 sq. ft.

Land Use: Institutional/Exempt

Owner: City of Everett

### CRITERIA QUALIFICATIONS

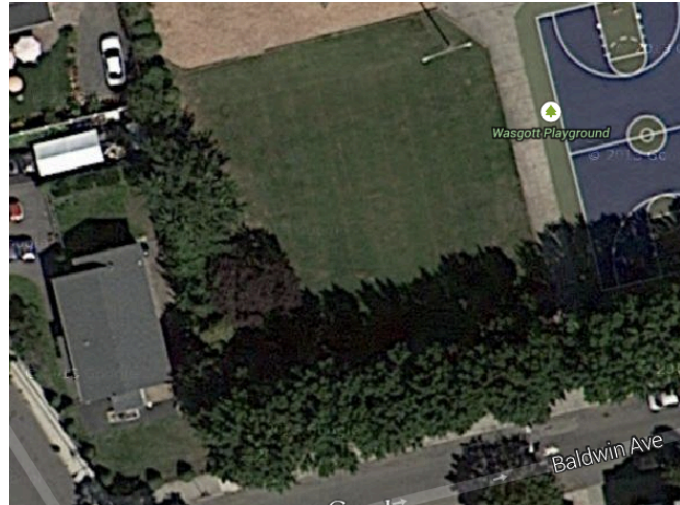
- Light exposure: 3/4
- Slope: 4/4
- Density of vegetation and debris: 4/4

**Total Score: 11/12**

### CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: within ¼ mile of bus stop
- Existing Structure Inventory: Fence on SE and W side, sidewalk on NE side
- Vehicle Access: Street parking
- Street Lighting: Yes
- Visible Water Access: Yes
- Number and Type of Abutters: Playground and residences

BEST UA TYPE: MG (although according to size could be UF)





**80 Tremont Street (Mel's Auto)**

Ward: 6

Parcel ID: 33

Size of parcel: 8,096 sq. ft.

Land Use: Institutional/Exempt

Owner: City of Everett

**CRITERIA QUALIFICATIONS**

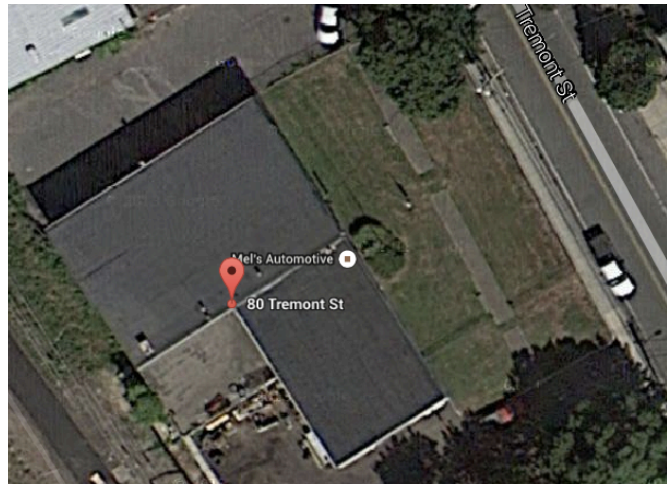
- Light exposure: 3/4
- Slope: 4/4
- Density of vegetation and debris: 4/4

**Total Score: 11/12**

**CONSIDERATION OF FARMER PREFERENCE**

- Public Transit Options: Within ¼ mile of bus stop and feet from Northern Strand Community Trail
- Existing Structure Inventory: Fencing, concrete path, benches, no ADA access
- Vehicle Access: Street parking
- Street Lighting: Yes
- Visible Water Access: Unknown/possible
- Number and Type of Abutters: 2 businesses (Mel's Auto and Tremont Auto), residences across street

**BEST UA TYPE: MG**



**538 Broadway (front of old EHS)**

Ward: 5

Parcel ID: 12

Size of Parcel: 9,085

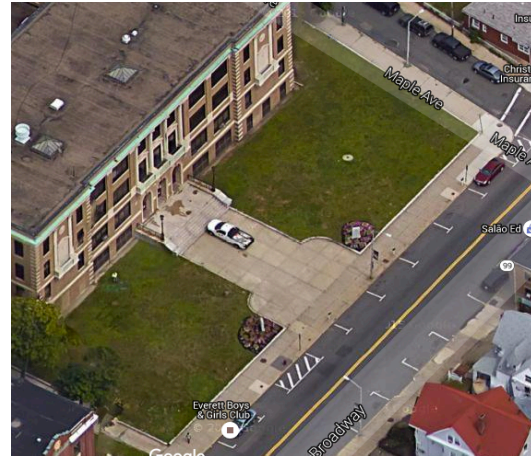
Land Use: Institutional/Exempt

Owner: City of Everett

CRITERIA QUALIFICATIONS

- Light exposure: 3/4
- Slope: 3/4
- Density of vegetation and debris: 4/4

**Total Score: 10/12**



CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within ¼ mile of bus stop
- Existing Structure Inventory: Monuments
- Vehicle Access: Street parking
- Street Lighting: Streetlights
- Visible Water Access: No
- Number and Type of Abutters: Residences, old EHS, Boys and Girls Club, Everett Health and Wellness Center

BEST UA TYPE: UF



**Vernal St. and Glendale St.**

Ward: 4

Parcel ID: 51

Size of parcel: 30,000 sq. ft.

Land Use: Institutional/Exempt

Owner: City of Everett

CRITERIA QUALIFICATIONS

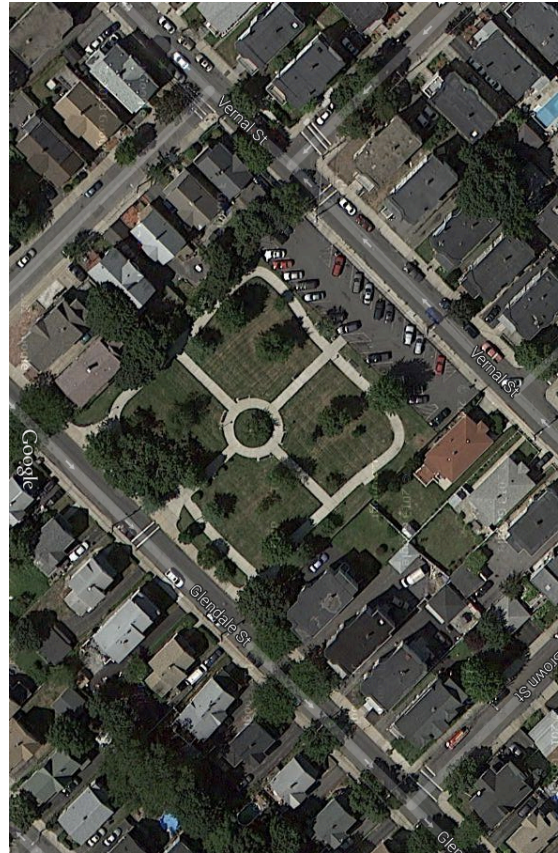
- Light exposure: 3/4
- Slope: 4/4
- Density of vegetation and debris: 3/4

**Total Score: 10/12**

CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within ¼ mile of bus stop
- Existing Structure Inventory: Walkways
- Vehicle Access: Street parking and small parking lot
- Street Lighting: Yes
- Visible Water Access: Yes
- Number and Type of Abutters:  
Residences on all sides

**BEST UA TYPE: UF**



**Thorndike St.**

Ward: 1

Parcel ID: 48

Size of parcel: 13,428 sq. ft.

Land Use: Developable Residential

Owner: Rosanna Cahill Dennis

CRITERIA QUALIFICATIONS

- Light exposure: 3/4
- Slope: 4/4
- Density of vegetation and debris: 3/4

**Total Score: 10/12**

CONSIDERATION OF FARMER PREFERENCE

- Public Transit Options: Within ¼ mile of bus stop
- Existing Structure Inventory: Fence on SE and SW sides
- Vehicle Access: Street parking
- Street Lighting: Yes
- Visible Water Access: No
- Number and Type of Abutters: 2 businesses (Southeastern Painting Co. and religious institution) and 2 residences

BEST UA TYPE: MG or UF (if trees cleared)



**Tremont St./Air Force Road**

Ward: 6

Parcel ID: 53

Size of parcel: 151,606 sq. ft.

Land Use: Institutional/Exempt

Owner: City of Everett

CRITERIA QUALIFICATIONS

- Light exposure: 4/4
- Slope: 3/3
- Density of vegetation and debris: 3/4

**Total Score: 10/12**

CONSIDERATION OF FARMER PREFERENCE

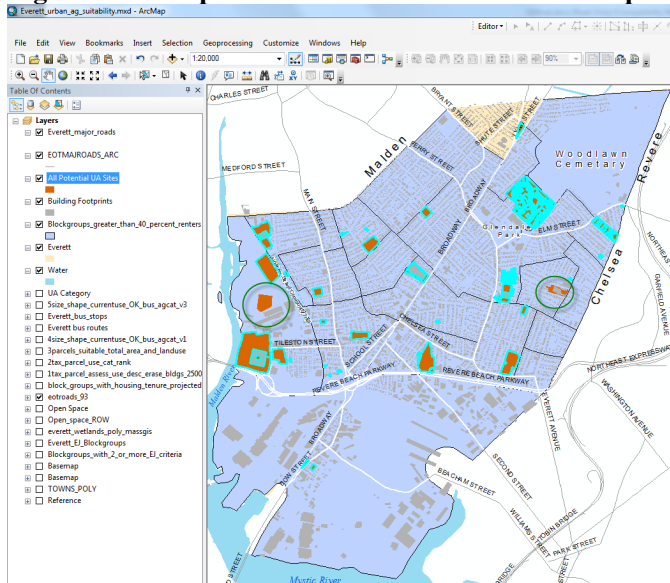
- Public Transit Options: Just over 1/4 mile from bus stop
- Existing Structure Inventory: None
- Vehicle Access: Parking lot
- Street Lighting: Yes
- Visible Water Access: No
- Number and Type of Abutters: 4 businesses (MetroRock, SkyZone, Cumar Marble, Boston Coach)

BEST UA TYPE: UF



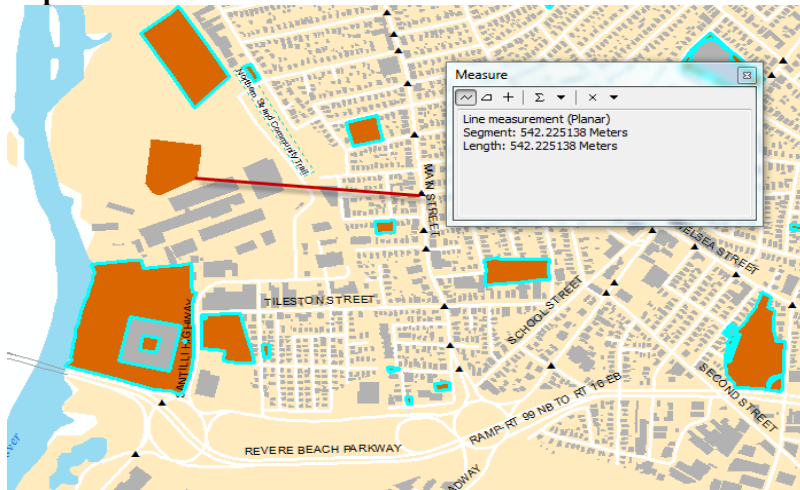
## Appendix E: Figures from GIS Analysis: Measurements from Bus Stop

**Figure 1: Two potential UA sites not within one-quarter mile of a bus stop**



The green circles above indicate the two sites that were NOT within 1/4 mile of a bus stop.

**Figure 2: Measurement from bus stop to a potential UA site not within one-quarter mile of a bus stop**



The red arrow above indicates the rough measurement of 542 meters taken from one of the sites NOT within 1/4 mile of a bus stop (the potential urban farm on a multi-use trail)

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