FOOD PRODUCTION: URBAN AGRICULTURE

CENTRAL PUGET SOUND FOOD SYSTEM ASSESSMENT

REGIONAL FOOD POLICY COUNCIL
& UNIVERSITY OF WASHINGTON

June 2011

PREPARED FOR THE REGIONAL FOOD POLICY COUNCIL
at the Puget Sound Regional Council

Councilmember Richard Conlin, Chair
Brad Gaolach, Vice-Chair

SPECIAL THANKS TO
Alon Bassok, Olivia Robinson, and Liz Underwood-Bultmann, Puget Sound Regional Council Staff
Megan Horst, Food Policy Council Intern, Puget Sound Regional Council
Roy Breiman, Chefs Collaborative
Linda Neunzig, Snohomish County

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Doug Collins, Washington State University
Steve Evans, King County
Commissioner Charlotte Garrido, Kitsap County
Kate Halstead, Sno-Valley Tilth
Dan Hulse, Tahoma Farms
Louis Javeta, Bounty Hunter Seafood
Carol Krause, Snohomish County Growers Alliance
Bobby Moore, Willows Lodge
Elliott Ryan, Latona Pub

PREPARED BY
University of Washington Department of Urban Design and Planning
Graduate Students

Anne Broache
Andreas Piller
Bo Wang
Briana Lovell
Cameron Duncan
Emily Anne Lindsey
Erica Bush
Erika Harris
Eun Jin Shin
Eva Ringstrom
Ginger Daniel
Jenny Ngo
Joel McMillan
John Murphy
Jonathon Morrison Winters
Joming Lau
Josh Vitulli
Kate Bonaparte
Lisa Sturdivant
Matt Beal
Michael Goldman
Michael K. Ward
Michelle Umadhay
Patrick Green
Stefanie Young
Tim Lehman
Ting Chen
Travis English
Virginia Werner

FACULTY
Branden Born, Associate Professor of Urban Design & Planning
Hossein Estiri, Teaching Assistant

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For more information contact studio67@uw.edu
View the studio team's full reports at INSERT STUDIO WEBSITE URL HERE

PROJECT BACKGROUND

This project represents the final product of a twenty-week graduate studio course in the Department of Urban Design and Planning at the University of Washington's College of Built Environments. The studio team members come from a range of backgrounds, including urban planning, urban design, architecture, landscape architecture, real estate development, and public affairs and policy.

The Regional Food Policy Council enlisted the University of Washington studio team to identify and pursue research topic areas examining the regional food system. The Council sought to meet two major goals: creating a common knowledge base among Council members about the region's food system and informing the development of early action items on the Council's work plan.

During the first half of this project, the studio team produced a report describing the current state of the food system in the central Puget Sound region, composed of King, Pierce, Snohomish, and Kitsap counties. Through compiling this initial conditions report, the team developed a thorough understanding of five components of the region's food system (production, processing, distribution, consumption, waste stream) and four other topics that impact, and are impacted by the region's food system (the environment and tribes, restaurants, and comprehensive plans). The team compiled existing data on each topic and identified strengths, challenges, and outstanding questions, culminating with a presentation to the Regional Food Policy Council on March 11, 2011.

During the second half of this project, the studio, in partnership with Regional Food Policy Council staff, prioritized six more specific topics for further study based on the findings from the initial conditions report. Each topic addresses an emerging issue in the food system, gaps in existing data, and policy or programmatic needs identified jointly with the Regional Food Policy Council. The studio team employed a variety of research methods, including field data collection, archival research, policy scans, geospatial analysis, case studies, and interviews with food systems stakeholders. Each element of the project is a standalone report and is described in more detail below.

REGIONAL FOOD POLICY COUNCIL HISTORY AND CONTEXT

The Regional Food Policy Council, chaired by Seattle City Council President Richard Conlin, comprises 30 members representing all parts of the food system as well as government, social justice, anti-hunger, educational, and economic development organizations. The Regional Food Policy Council is housed within the Puget Sound Regional Council, the federally recognized Metropolitan Planning Organization for the central Puget Sound region, serving King, Pierce, Snohomish, and Kitsap counties. The Regional Food Policy Council is a working advisory committee that reports to the Puget Sound Regional Council's Executive Board and provides regional structure and coordination on food system issues.

The Regional Food Policy Council's formation stems from the incorporation of the food system into the planning lexicon, as planners and policymakers are increasingly aware of the food system's widespread influence on the economy, environment, and society. Since convening its first public meeting in September 2010, the Regional Food Policy Council has set to work on finalizing its vision and mission statements, goals, and future work plan.

Regional Food Policy Council Vision and Mission:

> **Vision**: The Regional Food Policy Council envisions a thriving, inclusive and just local and regional food system that enhances the health of: people, diverse communities, economies, and environments.
>
> **Mission**: The Regional Food Policy Council develops just and integrated policy and action recommendations that promote health, sustain and strengthen the local and regional food system, and engage and partner with agriculture, business, communities and governments in the four-county region.

Regional Food Policy Council Goals

- **Agriculture**: strengthen the economic vitality and viability of farming and promote a vibrant community of farmers; maximize opportunities for farming across scales; preserve land for farming.
- **Economic Development**: advance regionally-scaled infrastructure; enhance economic viability of local and regional food systems; support living-wage jobs and occupations.
- **Education**: foster education about and understanding of food, agriculture and environmental protection; facilitate outreach and education among elected leaders and communities.
- **Environment**: promote sustainable agriculture and protect the environment.
- **Equity**: promote equity and access to affordable, nutritious food; strengthen local and regional food systems and increase community food security.
- **Health**: improve public health through food access, nutrition and production; improve the health, safety, and welfare of workers and worker rights and reduce environmental health risks.
- **Policy**: connect local and regional efforts with statewide, national, and international efforts to strengthen local and regional food systems; develop model policies for use by jurisdictions in support of all goals; sustain Regional Food Policy Council.

OVERVIEW OF REPORTS

FOOD PRODUCTION

The Food Production report comprises three distinct sections: Rural Agriculture, Fisheries, and Urban Agriculture.

Rural Agriculture

Rural agriculture is a large component of the food system within the central Puget Sound region. This section explores how each county inventories farmland. In an effort to advance the Regional Food Policy Council's *agriculture* goal, which includes farmland preservation, this section identifies key steps to understanding how farmland is classified throughout the region.

Major findings from this report include:

- Each county in the central Puget Sound region uses different tools to inventory agricultural land, including Open Space Tax Classification, windshield surveys, and community outreach.
- Each of these tools offers benefits and limitations. For example, windshield surveys can provide an accurate survey of crop types but consume large amounts of staff time. The Open Space Tax Classification method (allowing owners of farm and agricultural land to have their property valued at current use rather than highest and best use) enables counties to identify farms whose land owners want to save money on taxes, but some farmland owners do not desire the land use restrictions and criteria associated with this classification.
- It would be helpful for the Regional Food Policy Council to convene managers of county agricultural data collection to share best practices. Additionally the Regional Food Policy Council can support uniform data collection and suggest base farmland data that each county can collect. If each county uses similar data collection methods, the Regional Food Policy Council could have a better understanding of rural agriculture across the central Puget Sound region.

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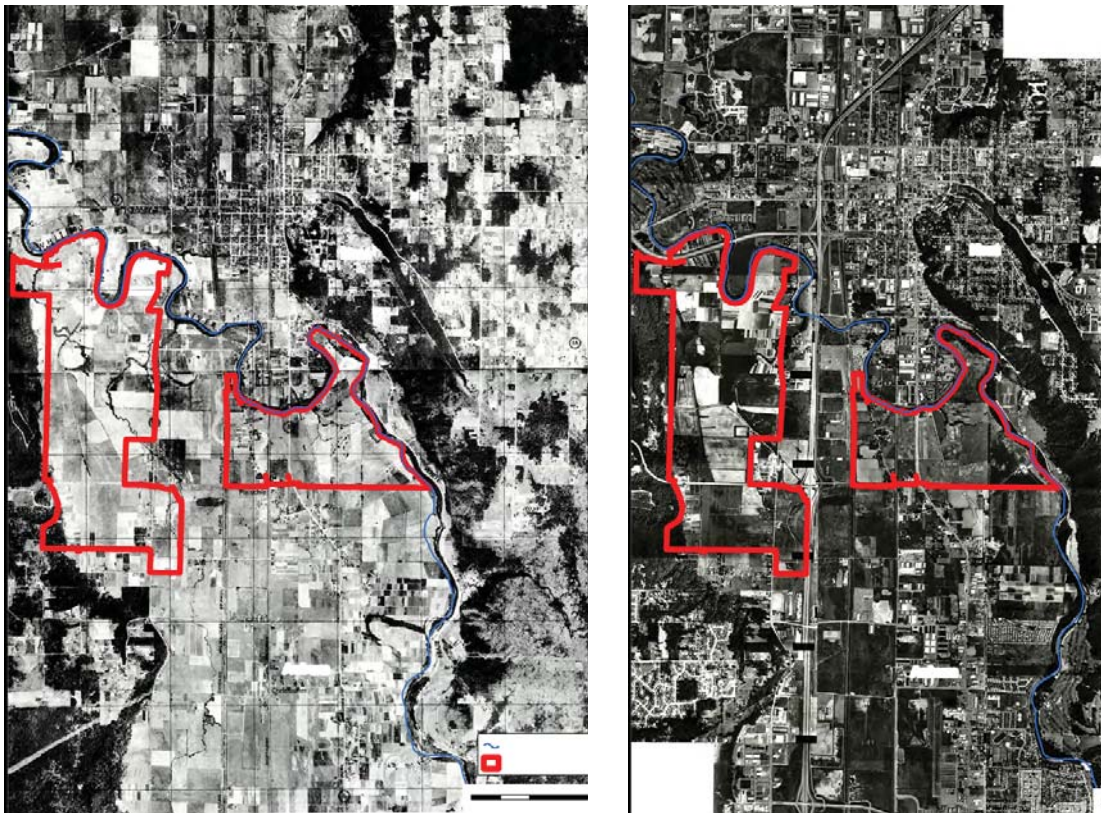


The change in agriculture lands in King County from 1944 to 1989

Additionally, the studio team provided a geographic analysis of land cover patterns in three time periods: 1944, 1989-1991 (pre-Growth Management Act), and 2001-2002 (post-Growth Management Act). This analysis demonstrates visually how land has developed in response to the policies in place during those time periods. Aerial photography shows urban and suburban development near the borders of county-designated agricultural lands. Alongside designated agricultural lands, the maps demonstrate infill of non-designated, undeveloped lands between the early 1990s and early 2000s. This visual analysis articulates the history of rural farmlands and the development pressures that cause land use change.

Fisheries

The state of fisheries has changed greatly since the early 1900s, but minimal data is currently available on the precise role of commercial fishing in the central Puget Sound region. Today, the Puget Sound fisheries are much quieter. Fewer fishing vessels have a home port in the region, the estimated value of the fisheries has decreased, and the average ex-vessel price per pound for Puget Sound's iconic salmon is less than in 1950. (Ex-vessel prices are the amount a commercial vessel makes when it unloads its catch, rather than how much is received at market.) The purpose of this report is to further the Regional Food Policy Council's *economic development* goal through an inventory of commercial fishing vessels, as a starting point, to better understand the economic impact the local fishing fleet has on the region.

Major findings from this report include:

- In recent years, there has been an overall decrease in the number of commercial fishing vessels the central Puget Sound region.
- Economic impact studies of the Port of Seattle's Fishermen's Terminal show that a fishing vessel has a significant impact on the region's economy. For example, *The 2007*

Economic Impact of the Port of Seattle, prepared by Martin Associates (2009) estimates one purse seiner (a type of commercial fishing boat) contributes approximately $220,000 annually. A commercial crabber contributes approximately $550,000 annually.

- The number of commercial fishing vessels with a home port at Fishermen's Terminal in Seattle declined from 370 to 250 vessels between 2003 and 2007.
- Similarly, the number of jobs these commercial vessels supported declined from 5,524 to 3,424 jobs between 2003 and 2007.
- This decline impacts the local economy: in 2003 the vessels at Fishermen's Terminal brought in $179.6 million to local businesses, compared to only $43.8 million in 2007.
- It is difficult to determine the number of fishing vessels moored in each of the four counties, due to the nature of how the Washington Department of Licensing collects data. As a result, it is difficult to clearly understand what social and economic impacts these fishing vessels have on their home ports and markets in the region (beyond the recent economic impact study of Fishermen's Terminal in Seattle).
- Efforts could be taken to ensure that the region maintains a large fleet. Instead, a combination of factors has caused fisherfolk to relocate from the region or quit fishing altogether. Many vessels are moving north to the Port of Bellingham where local officials have realized the benefit of having a large fleet and are lowering moorage rates, enhancing amenities, and providing convenient access to nearby processors and icehouses.

Urban Agriculture

The studio team examined urban agriculture based on the Community Food Security Coalition's definition, in which urban agriculture "refers to the production, distribution and marketing of food and other products within the cores of metropolitan areas...and at their edges." This section uncovers opportunities for urban agriculture in the central Puget Sound region that coincide with the Regional Food Policy Council's goals of *agriculture*, *economic development*, *education*, *environment*, *equity* and *health*. The studio team focused its research primarily on the five metropolitan cities in the region as designated under *VISION 2040*—Bellevue, Bremerton, Everett, Seattle, and Tacoma—but believes the framework and methodologies it created can be extended to smaller suburban cities for future assessment.

The goals of this section are:

- To broaden Regional Food Policy Council's understanding of the potential scope of urban agriculture in North America
- To explore the current expressions in the central Puget Sound region
- To identify where area comprehensive plans can address urban agriculture
- To identify future opportunities for growth regionally

Major findings from this report include:

- North American urban agriculture takes many forms beyond traditional community gardening, including backyard garden programs for food-insecure residents, prison gardens, and commercial rooftop farms.
- Each of the five metropolitan cities (Bellevue, Bremerton, Everett, Seattle, Tacoma) addresses urban agriculture in different ways (e.g., through city ordinances, specific codes/zones, and plans). Tacoma has the most detailed comprehensive plan and urban agriculture-related policy coverage, which may serve as a model for other cities in the region.
- The studio team proposes a new methodology, based on existing land use data and aerial photography, to determine potential sites for implementing urban agriculture. This site assessment considers:
    - environmental characteristics (e.g., steep slopes and other ecological barriers),
    - community needs (e.g., residential density and proximity to existing community gardens),
    - accessibility factors (e.g., parking availability and pedestrian access), and
    - differences in land use ownership (e.g., private, public, and institutional lands).

FROM LEFT

UNIVERSITY OF WASHINGTON TACOMA - GIVING GARDEN

URBAN CHICKENS

UNIVERSITY P-PATCH

FOOD DESERTS

Food deserts are areas "with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income neighborhoods and communities," according to the 2008 U.S. Farm Bill. This report focuses on identifying food deserts in the central Puget Sound region, with a focus on how transportation networks can aid or interfere with access to healthy food. The studio team further defined access to "affordable and nutritious food" through availability of the following food retail outlets:

1. Full-service grocers, which provide access to a full range of healthy food
2. Specialty foods outlets, which provide access to some healthy foods but not a full range (butcher, bakery, etc.)
3. Cultural grocers, which provide ethnically significant food access points

The studio team employed a geographic information systems analysis to locate census blocks lacking the specified food retail outlets within a quarter mile from bus stops in King, Pierce, Snohomish, and Kitsap Counties. The analysis incorporates data on bus line and stop data, income, vehicle ownership, locations of elderly populations, and locations of the three types of grocers described above.

Major findings from this report include:

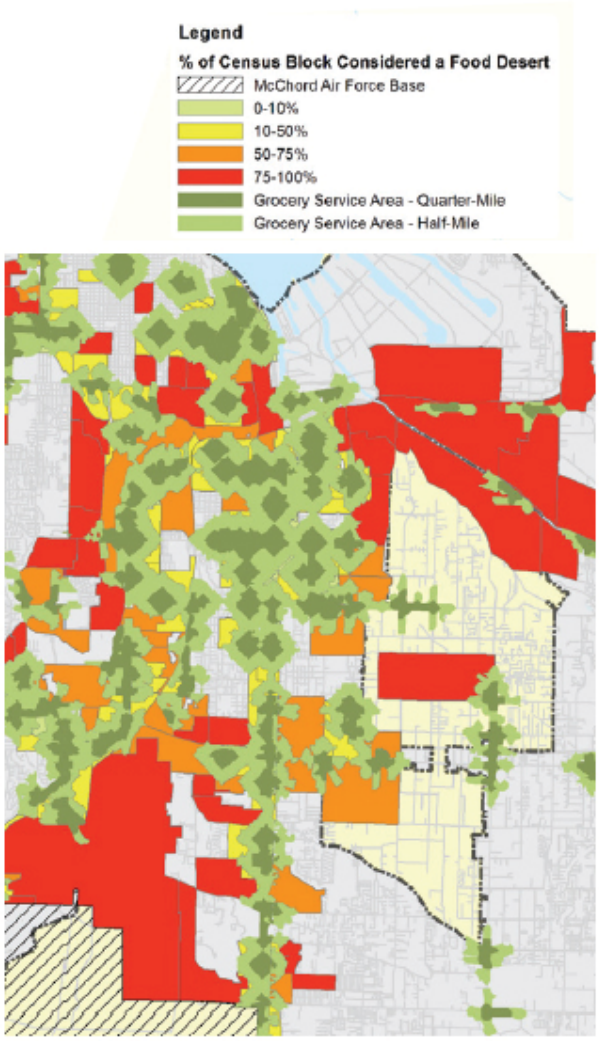
- Urban cores tend to have greatest access
- Urban peripheries are facing food access challenges
- Transit lines have a substantial effect on food access
- Bring together community groups and government to best address local concerns and situations

Policy considerations to improve access include:

- Coordinate transit systems with food access points
- Educate riders on location of grocery stores
- Promote community level programs including farmers markets, community gardens, mobile food carts

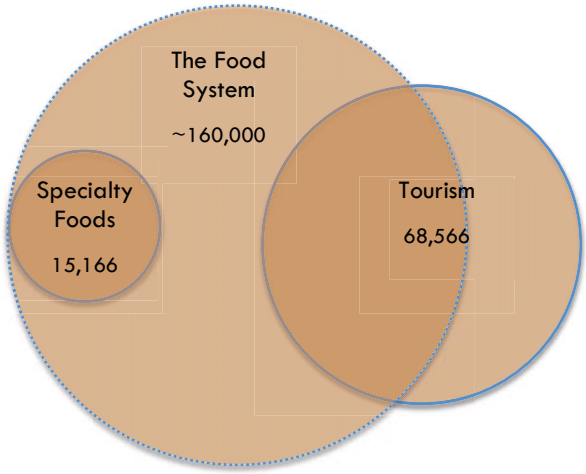
This report is intended to serve as a starting point for future efforts to monitor and address food deserts in the region. The hope is for this work to be easily replicable as the Regional Food Policy Council moves forward with its equity, health, and policy goals.

Example of Food Desert Analysis



WAGES

In order to advance the Regional Food Policy Council's *economic development* goal of supporting living wage jobs, this report seeks to understand the current state of food system employment. The production, processing, and retail sectors of the food system provide about 165,000 jobs in the central Puget Sound region in the most recent year data was available, 2009. The analysis reveals that the majority of these jobs do not provide a living wage, which is the wage rate necessary to meet minimum standards of living, even for small families of two adults or one adult and one child, according to Amy Glasmeier, Professor of Geography and Regional Planning at MIT. This report also presents key considerations for supporting economic development through the creation of living wage jobs in the food system as possible ways to address this challenge.



The number of jobs in various job sectors....

Major findings from this report include:

- About 80 percent of non-farm food system workers earn wages below the lowest living wage standard used in this report ($13.33/hour, tips included).
- The lowest paid occupations are bussers as well as counter, cafeteria, coffee, and concessions servers. All make about $9.25/hour and number about 23,000, a significant share of regional food system employment.
- The highest paid occupations are purchasing agents and food scientists. Both make roughly $29/hour. This wage is earned by approximately 310 workers, less than 0.2 percent of the 165,000 workers in the regional food system.

FOOD HUBS

This report provides guidance for policymakers and food systems stakeholders on food hubs, an emergent tool intended to sustain small and midscale farmers, to promote regional economic development, and to fulfill demands for locally and regionally produce food in a more efficient way. The U.S. Department of Agriculture's working definition of a food hub is "a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products."

Food hubs may help advance the Regional Food Policy Council's *agriculture* goal by focusing on support for small and midscale farmers, which may in turn provide incentives to preserve farmland and improve the regional viability of farming. Food hubs may also help to advance the *economic development* goal by providing employment opportunities in the areas they serve and opening up access to new retail and wholesale markets that smaller farmers struggle to reach.

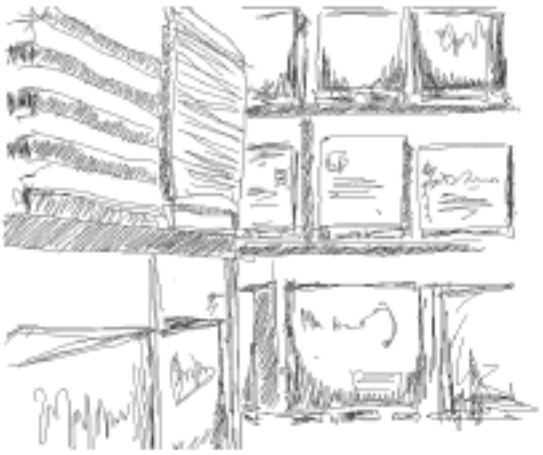
Major findings from this report include:

- Food hubs are gaining national momentum, as evidenced by U.S. Department of Agriculture's extensive and growing work on the topic in concert with local food systems organizations nationwide. More than 100 food hubs exist nationwide, averaging

more about $1 million in annual sales. More than half started within the last five years.

- Food hubs typically have three major components:
    1. wholesale aggregation/distribution,
    2. active coordination with food producers, and
    3. permanent facilities.
- Some food hubs provide additional services, such as space for wholesale and retail vendors, health and social service programs, community kitchens, and community meetings.
- Key considerations in starting a food hub include demand for locally and regionally produced food, creativity with funding, seamless systems for distribution and sales, careful market analysis, and review of policies to determine whether financial or regulatory incentives may aid food hub development.
- The planned Everett Farmers Market in Everett, Washington, which combines retail and wholesale sales of agricultural products, commercial kitchen facilities, distribution, education, and other elements, offers lessons for planning future regional food hub efforts.
- Two detailed case studies illustrate how food hubs have developed in two areas that share some of the central Puget Sound region's demographic and physical characteristics: the Local Food Hub, a non-profit food aggregator, distributor, and educational farm located in Charlottesville, Virginia; and The Wedge, a cooperative business with a retail store, distribution warehouse and educational farm located in Minneapolis, Minnesota.
- In recent years, all four counties in the central Puget Sound region have identified various barriers for smaller farmers, ranging from marketing and economic development to access to commercial kitchens to mechanisms for garnering wholesale clients. Food hubs may help to meet these needs while filling demonstrated consumer demands for locally and regionally produced food.

Information about above Pictures Here



POLICY

This report is intended to provide information to policymakers, food systems stakeholders, and advocates that can guide future action and policy change. The aim of this section is twofold:

- To increase communication, information-sharing, and education about policy work and policy opportunities region-wide
- To provide relevant model food systems policy language for use in support of the Regional Food Policy Council goals

As a whole, this report aims to advance the ***policy*** and ***education*** goals of the Regional Food Policy Council. First, this report summarizes policies contained in countywide plans that specifically address food system activities. Next, this report provides sample comprehensive plan and municipal code language for a variety of food systems activities. Jurisdictions can tailor these policies to their individual needs and situations. Then, this report discusses policies related to three food system topics: agricultural land preservation, food processing for economic development, and on-farm alternative energy production.

Major findings from this report include:

- Twenty-seven policies within the King, Pierce, Snohomish, and Kitsap County comprehensive plans address food system issues in a cross-cutting way by mentioning multiple food system components (e.g., production, processing, distribution, consumption, waste).
- There are small and simple policy changes that municipalities can make as a first step to enable food systems activities:
    - including food systems goals in comprehensive plan elements;
    - creating a streamlined permit for small farmers markets;
    - enacting food systems-supportive resolutions;
    - establishing farmers markets as approved land uses;
    - establishing community gardens as approved land uses or open space sub-districts;
    - enabling interim, temporary, or vacant land use agreements for community gardening or urban agriculture uses; and
    - establishing "healthy food zones" near schools.
- Agricultural land preservation policies are best understood in the context of a "package" of ten policy tools that complement each others' strengths and cancel out each others' weaknesses. These tools are:
    - Agriculture zoning
    - Agriculture districts
    - Comprehensive plans
    - Conservation easements
    - Differential assessment of farmland
    - Private land trusts
    - Purchase of development rights
    - Right-to-farm law
    - Transfer of development rights
    - Urban growth boundaries
- Local food processing facility development and renovation can be enhanced by applying for and supporting the continuation of underutilized U.S. Department of Agriculture funding resources, such as the Community Facilities Fund.
- Encouraging government procurement of locally-grown foods increases processing demand by midscale farms as well as funding available for processing facility

development (e.g. food hubs).

- Technical assistance and incentives can assist the agricultural community with undertaking renewable energy and energy efficiency projects.

ROAD MAP TO A GREENER RESTAURANT

Because the restaurant industry is a major component of the food system, it is important to consider the role of restaurants in achieving environmental, economic, and social goals. Developed in partnership with Seattle Chefs Collaborative, the *Road Map* provides guidance for new and existing restaurants on how to become more aware and responsive to sustainability issues. Users of the *Road Map* will find information and resources in six topic areas: food sourcing, water use, energy and the built environment, waste management, cleaning green, community and economy issues. The *Road Map* includes links to local resources that serve as supplementary material to the recommendations and incentives that the aforementioned categories offer. The completion of the *Road Map* signifies the first step in providing outreach to area restaurants; Seattle Chefs Collaborative will use the *Road Map* as the basis for future communication and marketing initiatives.

Major components of the *Road Map*:

- There are 35 self-assessment questions for restaurant operators covering the six topic areas. Examples of questions include "Do you compost food and other organic waste?" and "Do you use non-toxic cleaning products?"
- Each question contains at least two action items that restaurants can implement along with at least one resource, often more, that helps restaurants to think about sustainability. Examples of action items include giving food waste to farmers for animal feed and making your own non-toxic cleaning products.
- The *Road Map* provides region-specific resources, such as information about rebates offered by area cities, links to local harvest schedules, and local entrepreneurs who are involved with sustainable restaurants.
- The icons next to each question indicate at least one benefit—economic, environmental, or social—that can be achieved by taking the actions listed; many questions have multiple benefits.

Information about above Pictures Here

CONCLUSION

The common thread binding this project's eight distinct reports is attention to the Regional Food Policy Council's goals. The reports described above:

- provide new qualitative and quantitative data,
- identify social and economic implications of this project's work,
- offer policy ideas, and
- suggest needs for future work where applicable.

The intent is to provide information that will assist Regional Food Policy Council members as they work toward their vision and mission of developing "just and integrated policy and action recommendations" toward a "thriving, inclusive and just local and regional food system." The reports can stand alone and need not be read in any particular order. However, reading the entire set can provide an understanding of challenges and opportunities in the food system that is as diverse as the central Puget Sound region itself.

View the studio team's full reports at http://courses.washington.edu/studio67/psrcfood..

GOING BEYOND THE P-PATCH

Urban Agriculture in the Central Puget Sound Region and Beyond

INTRODUCTION

While the initial conditions report indicated that the community gardens model of urban agriculture is common, celebrated, and sometimes incorporated into comprehensive plans, an in-depth survey of local comprehensive plans and on-the-ground activities reveals more diverse expressions of urban agriculture in the central Puget Sound region. This investigation, coupled with trends and model projects seen around North America, uncovers more broad reaching opportunities for urban agriculture that coincide directly with the Regional Food Policy Council's goals of agriculture, economic development, education, environment, equity and health.

These trends are reflected in the recent American Planning Association's report, "Urban Agriculture: Growing Healthy, Sustainable Places", a handbook for those Regional Food Policy Council members looking for more information on policy and planning on the topic.[1] The authors of the report turn to the Community Food Security Coalition's definition of urban agriculture as a framework for discussion[2]:

> Urban and peri-urban agriculture (henceforth urban agriculture) refers to the production, distribution and marketing of food and other products within the cores of metropolitan areas (comprising community and school gardens; backyard and rooftop horticulture; and innovative food-production methods that maximize production in a small area), and at their edges (including farms supplying urban farmers markets, community supported agriculture, and family farms located in metropolitan greenbelts). Looked at broadly, urban agriculture is a complex activity, addressing issues central to community food security, neighborhood development, environmental sustainability, land use planning, agricultural and food systems, farmland preservation, and other concerns.[3]

The studio team believes this is a comprehensive definition based on our findings of local and national trends that recognize the complexity and scope of urban and peri-urban agriculture. Due to the limited time frame of our engagement, the studio team focused its research primarily on the urban core, but believes the framework and methodologies that were created can be extended to suburban environments for future Regional Food Policy Council assessment.

This definition of urban agriculture helps to explain why urban agriculture is such a critical addition to our understanding of regional food systems. As cities continue to grow and sustainability becomes ever more relevant, urban agriculture becomes increasingly important. Today, around 15 percent of the world's food is now produced in urban areas.[4] From predicted mega-cities to regional urban nodes, urban agriculture provides a strategy for achieving goals from poverty reduction to reducing rates of food insecurity. This increased amount of food grown in urban areas is important for many reasons, which include: promoting local and regional economic sustainability, increasing access to healthy foods, protecting the environment by decreasing food miles, encouraging community/neighborhood quality

of life and providing a start to urban food security. As cities look at ways to increase the availability of locally grown healthy foods, urban agriculture is a strategic response. Beyond the nutritional benefits that could be provided, the economic impacts of urban agriculture may attract policy makers.

Linking PSRC's Regional Food Policy Council Goals

Agriculture: Urban agriculture is another manifestation of agricultural production that is gaining importance for the public as well as policy makers, especially as it expands upon the current definition of agriculture in planning and policy creation.

Economic Development: Urban agriculture has the potential to boost economic development through numerous avenues including sales of the food produced, the creation of jobs, and revenue generation from reused or underutilized space.

Education: Urban agriculture provides numerous educational benefits including a better understanding of food sources, food security, health and nutrition, and the environment. This report aims to address education at all levels from policy makers and the general public, to specialized groups such as children and the elderly.

Environment: Urban agriculture not only helps to reduce environmental impacts of transporting food long distances by supporting local food production, but also addresses other environmental issues - such as heat island effect and stormwater management - as a means of greening the urban environment.

Equity: Urban agriculture serves to support equal access for all to healthy foods through the creation of food producing opportunities as well as connections to support services such as food banks and soup kitchens that have limited access to seasonal produce.

Health: Urban agriculture helps support access to healthy foods and educates the public about nutrition and health.

Policy: Urban agriculture is an area where great opportunities for policy improvements exist. The Regional Food Policy Council has the opportunity to lead an innovative and holistic 2040 vision for urban agriculture for the central Puget Sound region.

METHODOLOGY

This report has four distinct goals:

1. To share national examples of urban agriculture organized through the lens of Regional Food Policy Council's goals and objectives;
2. To provide a current review of city comprehensive plans and relevant policy/ ordinance language for the five major cities in the region;
3. To determine the current status of different types of urban agriculture in the region, how they are currently being surveyed, and recommend additional information gathering, and;

4. To propose methodologies for identification of potential sites for strategic urban agriculture interventions on small and large scales across the region.

Specific methodological approaches can be found within subsections of this report. The studio team decided that with the scope of work as defined, it was necessary to use different methodological approaches for each reported investigation; thus the separate methodologies are defined respectively in the subsections that follow.

BROADENING OUR UNDERSTANDING

of urban agriculture through an organizing frameowrk and national examples

The diversity of urban agriculture expressions requires a larger conceptual understanding and framework than the standard community garden model. To assist the Regional Food Policy Council, the studio team has organized various forms of urban agriculture by production goals, spatial applications, and objectives in light of the Regional Food Policy Council's goals and its membership. As the definition suggests, urban agriculture can be cultivated in places like median strips and rooftops, schoolyards and corporate campuses. While there are creative manifestations across these scales, various production goals lend themselves to meeting different planning and policy objectives and through different spatial applications. We use *production goals*, *spatial applications*, *and project objectives* as categories to organize examples drawn from across the country.

PRODUCTION GOALS

Smalle Scale Private Production

Municipal Leadership

Institutional Services

Food Access Interventions

Commercial Production

Birds and Bees

SPATIAL APPLICATIONS

Single Family Home

Balcony

Alleyway

Corporate Campus

Municipal Campus

University Campus

Schoolyard

Restaurant

Prison

Hospital

Park

Right of Way

Roof Top

Vacant Lot

Infrastructure Corridor

Edible Landscaping

OBJECTIVES

Community Building

Food Security

Education

Demonstration

Job Training

Income Generation

High Yield

PRODUCTION GOALS

Production goals were identified and defined by reviewing other frameworks for organizing urban agriculture types, the most recently published being the Planning Advisory Service's (PAS) report on urban agriculture.[5] While the PAS report also divides goals by commercial and non-commercial endeavors, production goals can be further organized to highlight the membership and goals of the council. Our working definitions are as follows:

Small-scale private production: Yield is generally eaten directly by those who cultivate it or by a local, known beneficiary.

Municipal Leadership: Traditionally non-productive municipal land is converted (or co-purposed) to model and provide limited urban space for healthy local food production.

Institutional Services: Food is produced and consumed on-site of an institution that provides food services for its users.

Food Access Interventions: Often a holistic approach to meet a community's limited access to healthy food by identifying root causes, removing barriers and producing food locally.

Commercial Production: Focused on a business model to generate income and increase the number of educated consumers of locally grown food.

Birds and Bees: Small animal and egg, honey and pollinators production for private or commercial use.

SPATIAL APPLICATIONS

Broadening an understanding of urban agriculture requires re-examining urban spaces. Urban agriculture does not necessarily take the same form as rural agriculture. Instead, urban agriculture can take the shape and space that the urban form and its users create. In many cases the space needed to achieve the goals identified above are only limited by imagination. This list is a good beginning to expand our understanding:

Single family home
Balcony
Corporate campuses
Municipal campuses
Universities
Schools
Prisons
Hospitals
Restaurants
Parks
Right of way
Roof tops
Vacant lots
Infrastructure corridor

OBJECTIVES

Objectives for urban agriculture vary based on audience. After reviewing the Regional Food Policy Council's goals and over 100 North American examples of urban agriculture projects, we identified seven that demonstrate a broad range of objectives. Most urban agriculture projects have more than one objective, and generally are reinforcing in nature (i.e. an objective of food security is often coupled with education and job training). Arguably, each

production goal leans more towards a set of objectives than another, which could help the Regional Food Policy Council identify which kind of interventions or new projects they might wish to support or promote.

food security
community building
education
demonstration
job training
income generation
high yield

NORTH AMERICAN EXAMPLES OF URBAN AGRICULTURE PROJECTS

The following pages represent an effort to share North American examples of urban agriculture that represent the identified production goals and objectives over diverse spatial applications. Because there are no existing databases (and compiling this objectively is a difficult endeavor and beyond the scope of this project), the selection of these was based on the following criteria:

- It is not in the Puget Sound region (in order to provide outside models)
- It could be implemented in the PNW climate
- Examples must be at least into a second year of a yield (with one exception made for a long-term planning phase for an innovative housing development).
- Examples were referred to in at least two sources from the following: internet hub widely referenced within the urban agriculture community (City Farmer); leading city newspaper (i.e. The Baltimore Sun); "national" newspaper or blog (USA Today, The New York Times, The Washington Post, The Huffington Post); or Advisory Planning Service's 2011 publication on Urban Agriculture.[6] (Because there is no existing database this criteria was used to help indicate that these projects have been recognized for their success, innovation or both.)

An initial scan of over 100 projects helped to define the production goals, spatial applications and objectives. Once defined, examples were then selected based on how well they exemplified the production goal while meeting multiple objectives as well as a diversity of spatial applications across the examples. Each example includes a snapshot of the location, the size of the project, year established, who eats the yield and the management of the project.

These examples will help better understand the scope, effectiveness and creativity of urban agriculture forms and help the Regional Food Policy Council imagine a strategic vision for urban agriculture in the central Puget Sound region.

SMALL SCALE PRIVATE USE

Yield is generally eaten directly by those who cultivate it or by a local, known beneficiary.

SPATIAL APPLICATIONS

- [x] single family residence
- [x] balcony, courtyard
- [x] alleyway
- [ ] corporate campus
- [ ] municipal complex
- [ ] university
- [ ] K-12 school
- [ ] restaurant
- [ ] prison
- [ ] hospital
- [ ] park
- [x] right-of-way
- [ ] roof top
- [x] vacant lot
- [x] infrastructure corridor
- [x] edible landscaping

PRIMARY OBJECTIVES

- [x] food security
- [x] community building
- [ ] education
- [ ] demonstration
- [ ] job training
- [ ] income generation
- [ ] high yield

Figure UB-1

CITY SLICKER FARMS

Oakland, California

SIZE
Over 100 backyard gardens

MANAGEMENT
Non-profit and backyard gardeners

ESTABLISHED
2001

WHO EATS?
Citydwellers w/low access to fresh food

In response to the lack of healthy food and severe poverty in West Oakland, community members organized to grow food in their neighborhood. Initially they began farming in a vacant lot and set up a free farm stand for community members.[7] The organization now has seven community market lots, 100 backyard gardens and runs an urban farming education program. The Backyard Garden Program helps to start gardens in low-income households providing supplies, expertise and two years of mentorship. Garden growers then become mentors to new gardening families, building a cadre of empowered healthy eaters.[8]

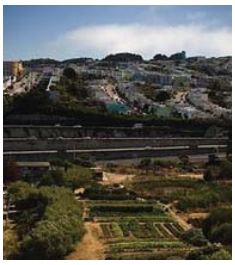


Figure UB-2

ALEMANY FARM

San Francisco, California

SIZE
4.5 acres

MANAGEMENT
Local residents

ESTABLISHED
1994

WHO EATS?
Local residents

Community gardens take many forms. Some are privately tended plots (like P-Patches), while others are tended by a community sharing the yield among its gardeners. Alemany Farm has been transformed from urban wasteland to an unfolding shared community garden since 1994. The garden is staffed and funded completely by volunteers that organize and host weekly community workdays.[9] A target volunteer base for the community garden is the youth in the surrounding low-income neighborhood that has little access to healthy food and suffers from high crime rates.[10]

Figure UB-3

SOUTHEAST FALSE CREEK HOUSING DEVELOPMENT

Vancouver, Canada

SIZE
2000 sq feet

MANAGEMENT
City and developers

AGE
established 2010

WHO EATS?
local soup kitchen

Designed to initially house 2010 Olympic athletes and to then be converted to a high-density residential development, the South False Creek Housing Development has been in planning for over two decades. Selected as a pilot project for a LEED for Neighborhood Development rating system, the development integrates innovative stormwater, energy and transportation infrastructure as well as a comprehensive urban agriculture strategy.[11] The vision includes community gardens, edible landscaping, hydroponic greenhouses, aquaponics, market gardens, community kitchens and small-scale livestock production.[12]

BALTIMORE CITY HALL

Baltimore, Maryland

SIZE
2000 square feet

MANAGEMENT
Parks and Rec with master gardeners-volunteers

ESTABLISHED
2009

WHO EATS?
local soup kitchen

Figure UB-4

In 2009 the Baltimore mayor's office announced the conversion of formal landscaped flowerbeds and lawn in front of city hall to vegetable gardens.[13] Designed to support healthy eating and demonstrate growing food in the city, the yield supports the city's largest soup kitchen. The first year provided over 2,000 pounds of fresh vegetables.[14] The Department of Parks and Recreation oversee the gardens with support from volunteer master gardeners. Despite concern of potential vandalism or urban pests (i.e. rats), no theft, vandalism or pests were reported.[15]

MADISON FRUIT AND NUTS

Madison, Wisconsin

SIZE
City wide

MANAGEMENT
Local residents

ESTABLISHED
2010

WHO EATS?
Local residents

Figure UB-5

In July 2010, Madison's Park Commissioners voted to drop strict requirements around edible landscaping in Madison's Park.[16] The citizen-run group Madison Fruit and Nuts advocated for the change and encourages planting in public parks to provide free food and good nutrition for all to access. They must pay for the trees, submit a planting, harvesting and maintenance plan to obtain city approval.[17] They recently were awarded three grants from the Fruit Tree Planting Foundation. The national website neighborhoodfruit.com maps public fruit trees around the nation for the picking.[18]

QUESADA AVENUE

San Francisco, California

SIZE
Multi-block median

MANAGEMENT
Local residents

ESTABLISHED
2002

WHO EATS?
Local residents

Figure UB-6

In July 2010, San Francisco Mayor Gavin Newsom directed all city departments to audit unused land for potential urban agriculture production. This included vacant lots as well as windowsills, rooftops and median strips.[19] Cultivating unused or non-traditional land for production has precedent in San Francisco. In a violence-prone Bayview neighborhood, dissatisfied residents cleaned up a median strip which was once used as a dumping ground for car parts and mattresses, and began planting flowers and vegetables. The garden caught on, and the community engagement it created has been credited with reducing illegal activity and garnering city improvement grants.

MUNICIPAL LEADERSHIP

Traditionally non-productive municipal land is converted (or co-purposed) to model and provide limited urban space for healthy local food production.

SPATIAL APPLICATIONS

- single family residence
- balcony, courtyard
- alleyway
- corporate campus
- ● municipal complex
- university
- K-12 school
- restaurant
- prison
- hospital
- ● park
- ● right-of-way
- ● roof top
- ● vacant lot
- ● infrastructure corridor
- ● edible landscaping

PRIMARY OBJECTIVES

- ● food security
- ● community building
- ● education
- ● demonstration
- job training
- income generation
- high yield

INSTITUTIONAL SERVICES

Food is produced and consumed on-site of an institution that provides food services for its users.

SPATIAL APPLICATIONS

- single family residence
- balcony, courtyard
- alleyway
- corporate campus
- municipal complex
- university
- K-12 school
- restaurant
- prison
- hospital
- park
- right-of-way
- roof top
- vacant lot
- infrastructure corridor
- edible landscaping

PRIMARY OBJECTIVES

- food security
- community building
- education
- demonstration
- job training
- income generation
- high yield

Figure UB-7

GOOGLE CAMPUS

Mountain View, California

SIZE
100 Earth Boxes

ESTABLISHED
2007

MANAGEMENT
Google and master gardener volunteers

WHO EATS?
Google employees

The first corporation to grow their own food, the Google Garden consists of 100 EarthBoxes which self-regulate water for irrigation. Directly adjacent to the campus' outdoor eating area, the garden is a highly visible feature. They were installed and maintained with the support from the local master gardener group.[20] Vegetables and herbs are organized by the different regions of the world and are featured in Google's food service.[21] Corporate gardens have become increasingly popular way to provide benefits that support good nutrition and build community among employees.[22]

Figure UB-8

COOK COUNTY JAIL

Chicago, Illinois

SIZE
13,000 square feet

ESTABLISHED
1993

MANAGEMENT
Non-profit and correctional dept

WHO EATS?
Local food bank and restaurants

Prison gardens are becoming an increasing trend in prisons around the country, improving nutrition, providing vocational skills, improving mental health and reducing violence.[23] The Cook County Jail garden is part of the county sheriff's garden program. The program enables inmates to earn a Master Gardener's certificate through the University of Illinois extension program. Food is donated to local food banks and also sold to some of the city's top restaurants.[24]

Figure UB-9

EDIBLE SCHOOLYARD

Berkeley, California

SIZE
One acre

ESTABLISHED
1995

MANAGEMENT
Non-profit

WHO EATS?
Middle school students

Modeled nationwide, the Edible Schoolyard program was a groundbreaker in bringing garden-based education to schoolchildren. Started by the famous restaurateur Alice Waters of Chez Panisse, the Edible Schoolyard program is now over 15 years old. Integrating all aspects of growing, eating and waste cycles into King Middle School's curriculum, the yield goes directly into the children's lunches. The organization also works to reform the quality of school lunches nationwide and has cultivated a network of affiliate programs across the country. Curriculum guides are available on their website for any educator to access.[25]

OKLAHOMA CITY FOOD BANK'S URBAN HARVEST

Oklahoma City, Oklahoma

SIZE
3.5 acres

ESTABLISHED
1999

MANAGEMENT
Non-profit food bank and volunteers

WHO EATS?
Food bank recipients and local restaurants

Figure UB-10

One out of five children in the state of Oklahoma struggles with hunger.[26] The Urban Harvest program was started to not only provide fresh fruits and vegetables to those in need, but to provide the skills and resources they need to grow their own food.[27] Among the services they provide are gardening classes, seeds and starts, tools and equipment, including compost. They now host over 40 community gardens across the state. They employ a high-yield aquaponic growing system that circulates water, raising tilapia to plants in grow beds. The fish waste provides the nutrients in the water which fertilizes the plants. Yield is shared through the food bank and also sold for income generation to local chefs and businesses.[28] The organization estimates that for every dollar raised, they are able to feed seven people.[29]

GROWING POWER

Milwaukee, Wisconsin

SIZE
Two acres in greenhouses

ESTABLISHED
1993

MANAGEMENT
Non-profit

WHO EATS?
Local residents, sold to restaurants

Figure UB-11

Recognized as a national leader in the urban farming and food justice movements, Growing Power's mission is to create equitable food systems by providing hands-on training, demonstration and technical assistance that help people grow and distribute food sustainably. Currently working in Milwaukee, Madison and Chicago, they practice closed loop aquaponic growing systems; catch and recycle water, make and sell their own compost; raise worms, bees, chickens and ducks, and employ a anerobic digester to produce energy from the farm's food waste. The founder, Will Allen, has been awarded the prestigious MacArthur "genius award" and was selected as one of Time Magazine's top 100 influential people of 2010.[30] The organization was just awarded an ambitious $425,000 grant from the city of Milwaukee, of which Growing Power will raise funds to match, to create 150 full-time jobs for low-income city residents.[31]

FOOD ACCESS & INTERVENTION

Often a holistic approach to meet a community's limited access to healthy food by identifying root causes, removing barriers and producing food locally.

SPATIAL APPLICATIONS

- ● single family residence
- balcony, courtyard
- alleyway
- corporate campus
- ● municipal complex
- university
- K-12 school
- restaurant
- prison
- hospital
- park
- ● right-of-way
- ● roof top
- ● vacant lot
- ● infrastructure corridor
- ● edible landscaping

PRIMARY OBJECTIVES

- ● food security
- ● community building
- ● education
- demonstration
- ● job training
- income generation
- ● high yield

COMMERCIAL PRODUCTION

Focused on a business model to generateincome and increase the number of educated consumers of locally grown food.

SPATIAL APPLICATIONS

- single family residence
- ● balcony, courtyard
- alleyway
- corporate campus
- municipal complex
- university
- K-12 school
- ● restaurant
- prison
- hospital
- park
- right-of-way
- ● roof top
- ● vacant lot
- ● infrastructure corridor
- edible landscaping

PRIMARY OBJECTIVES

- food security
- community building
- education
- demonstration
- job training
- ● income generation
- ● high yield

Figure UB-12

FRONTERA GRILL

Chicago, Illinois

SIZE
1000 square feet

MANAGEMENT
Chef and restaurant staff

ESTABLISHED
2006

WHO EATS?
Restaurant patrons

According to the National Restaurant Association, chefs gardens were the top restaurant trend of 2010. Not only can it be cheaper, but it allows for chefs to be in control of quality and allows them to differentiate themselves from other restaurants.[32] Award-winning chef Rick Bayless has received significant attention for growing a "salsa garden" on the roof above one of his restaurants featuring 12 kinds of tomatoes, five varieties of chilis, and lemon verbena. The salsa is featured during the peak of the growing seasons. He also produces greens and edible flowers at his home, producing approximately $25,000 worth of produce annually.[33] In his efforts to source local, organic produce, Bayless has also created a foundation that provides loans to small farmers, usually in the range of $10-15,000 each. In many cases this goes to support the critical resources mid-Western farmers need to be able to produce through the winter months.[34]

Figure UB-13

BROOKLYN GRANGE

Queens, New York

SIZE
40,000 saure feet

MANAGEMENT
For-profit company

ESTABLISHED
2009

WHO EATS?
Local residents and restaurants

Brooklyn Grange hovers above the New York skyline on the roof of a 1919 building in an industrial neighborhood of Queens. While the farm is a privately owned commercial endeavor, it is also open to the public and hosts school groups and volunteers to learn and participate in urban farming. The owner, Ben Flanner, piloted a 6,000 square foot pilot farm and learned he needed a larger space to be profitable. Brooklyn Grange has a 10-year lease and is financed through a combination of private equity, loans and grassroots fundraising. Their goal is to expand to more rooftops across the city. Farming on a roof requires thorough consideration of the roof's weight bearing capacity, soil type, irrigation and drainage. Rooftops are also exposed to extreme weather conditions, such as intense sun exposure and strong winds.[35]

CHICKENS

A backyard near you

SIZE
3 or more square feet per chicken

MANAGEMENT
Citydwellers, community gardeners

ESTABLISHED
Making a comeback

WHO EATS?
local soup kitchen

Figure UB-14

Home-grown chickens are common sights in many cities around the world, but have been frowned upon in North America over the last half decade – until recently. Trends in urban homesteading, organics consumption and response to the recession have seen a resurgence of chickens in cities. Raised for both eggs and meet, most cities ban roosters from backyards due to noise, but laws are changing around the country with citizen advocacy.[36] Numerous resources exist for eager owners, like backyardchickens.com, and thecitychicken.com.

WHITE HOUSE HONEY

Washington, DC

SIZE
65,000 bees

MANAGEMENT
White House grounds staff

ESTABLISHED
2009

WHO EATS?
Diplomats, local soup kitchen

Figure UB-15

As many know, President Obama and his family planted an organic vegetable garden to much fanfare when they moved into the White House in 2009. Fewer know that they are beekeepers as well, producing honey for international diplomacy gifts and for a local soup kitchen.[37] Chicago City Hall has also produced "Rooftop Honey" since 2003.[38] Bees provide critical pollination services to rural and urban cultivation alike. Urban beekeeping associations are cropping up around the country, supporting backyard beekeepers through classes and community building.

GOATS

Backyards and vacant lot mowing

SIZE
Usually pygmy or dwarf

MANAGEMENT
City dwellers and peri-urban farmers

ESTABLISHED
Becoming legal

WHO EATS?
cheese and milk by owners

Figure UB-16

A source for milk and cheese, goats have become common sights in many city residents' backyards throughout North America. Goats are still not legal in all cities, but the Pacific Northwest leads the movement to allow for them, and advocates are lobbying around the country for permission.[39] Owners also cite the strong sense of companionship they offer, like other domestic pets.[40] Goats are also being used as carbon neutral mowers in big city lots or for trail clearing. These goats are generally leased by goat farmers that are just outside the city.[41]

BIRDS AND BEES

Small animal and egg, honey and pollinators production for private or commercial use.

SPATIAL APPLICATIONS

- ● single family residence
- balcony, courtyard
- alleyway
- corporate campus
- ● municipal complex
- ● university
- ● K-12 school
- restaurant
- prison
- hospital
- park
- right-of-way
- ● roof top
- ● vacant lot
- ● infrastructure corridor
- edible landscaping

PRIMARY OBJECTIVES

- ● food security
- community building
- education
- ● demonstration
- job training
- income generation
- high yield

COMPREHENSIVE PLAN REVIEW
of Urban Agriculture Coverage

METHODOLOGY
The studio team has outlined how urban agriculture is addressed in the Comprehensive Plans of five central Puget Sound cities: Bellevue, Bremerton, Everett, Seattle and Tacoma. Each plan was read carefully for policies and goals relating to urban agriculture. The studio team chose these cities because of their relation to PSRC and because they represent at least one city from each of the four counties within our study area. Sub area plans and specific codes were only reviewed if they were mentioned or particularly relevant (i.e. Chicken Ordinances). In the event that there were specific policies or ordinances relevant to urban agriculture in cities that did not address urban agriculture in the comprehensive plan, this information is included. In cases where urban agriculture is not addressed specifically by the municipality the team identified areas in which more specific language could be added to existing policy.

BELLEVUE

SUMMARY
Bellevue's hope to realize the vision of a "City in a Park" is naturally conducive to a discussion about greening the urban landscape. A major goal in the Land Use section of their comprehensive plan is to develop and maintain a land use pattern that (among other things) protects natural systems and helps realize the vision of a "City in a Park."[42] Though Bellevue does not have a section of the plan, or even specific policies devoted to urban agriculture, there are certainly places within the existing plan that the discussion could easily begin.

Figure UB-17

PRESENT DISCUSSION
Land Use

Policies LU-13 and LU-14 both address the importance in distributing park and recreation opportunities equitably throughout the city and encourage dedication of open space to perpetuate Bellevue's park-like setting.[43] The goals of the Land Use element describe the desired quality of the residential and neighborhood areas. The Land Use section clarifies the desire to create a distinct sense of place.[44]

Policy LU-20 discusses promoting the establishment of small-scale activity areas for residents to come together[45]; P-patches and community gardens provide an excellent route to achieve this goal although they are not specifically mentioned.

Housing

The Housing element identifies a goal that "private homes and yards, as well as the public streets and sidewalks, are well maintained and demonstrate neighborhood vitality."[46] By incorporating urban agriculture into these plans and policies a greater sense of community, health, vitality and self-sufficiency can be fostered by promoting opportunities for both public gardens and private production. This might also address the Housing goal of promoting neighborhood quality.[47]

Parks, Open Space and Recreation

Though none of the goals specifically identify urban agricultural production, there are goals where it could be easily incorporated. The goal to "offer a variety of recreation, athletic, art, social, learning, and environmental education programs," has potential components of urban agriculture in each of the program types.[48] This element of the plan delegates the task of planning for pocket or neighborhood parks according to the recreational needs of residents in various subareas. In future revisions the subarea plans will be an opportune place to discuss neighborhood scale urban agriculture.

Policy PA-4 alludes to the idea of equitable distribution of park, open space and recreation opportunities to all residents of the city. While this does not speak specifically to initiatives such as community gardens or edible landscaping efforts, this is an important policy implication when thinking about urban agriculture and the larger urban food system.[49] The issue of urban agriculture is not specifically addressed in this element but on the whole, this element seems to be an appropriate place to discuss urban agriculture as a community open space amenity or as recreational opportunities.

Human Services

This element of the comprehensive plan would be a good place to discuss other urban agriculture goals. The appropriate types of conversation relating to this element include urban agriculture as a means of food security and healthy food access. These relate to the goal of making sure that all Bellevue residents have "food to eat and a roof overhead."[50]

Urban Design

There is no discussion on using edible landscaping, fruit bearing trees or public gardens as a means of achieving their goal to use "existing vegetation and new landscaping...to contribute to Bellevue's image of a 'City in a Park.'"[51] The plan does discuss using seasonal color plantings in semi-public areas and using native plants in urban landscaping. This element discusses the importance of landscaping in residential areas in the public right-of way but does not specify the type of landscaping. This is a good opportunity for the suggestion of strategies such as the use of raised beds, as they contribute to the goal of enhancing the neighborhood experience while providing recreational and agricultural needs too. Please see the section on small-scale interventions for more suggestions of ways this might be discussed.

BREMERTON

SUMMARY

The comprehensive plan for the City of Bremerton has many opportunities for the inclusion of urban agriculture. Both the Environment Vision and the Economic Development sections of the comprehensive plan are places that urban agriculture goals and policy discussion has begun and where it can easily continue. There is some allusion to urban agriculture but specific policy goals an action items would strengthen the discussion.

PRESENT DISCUSSION

Environment Vision

This section discusses the importance of incorporating native vegetation into the Bremerton landscape and increasing the overall health of the community.[52] These visions are directly in line with the viability of urban agriculture in Bremerton. This is an excellent opportunity within the comprehensive plan to discuss incorporating goals and policies to achieve a healthy, locally connected food system.

There are several relevant comprehensive plan goals and policies in this section; some of these goals present an opportunity for urban agriculture to be explicitly mentioned[53]:

- Encourage local and regional purchasing of consumer goods
- Manage existing public open space... in a manner that meets habitat protection goals, public safety concerns and recreational needs
- Preserve and enhance trees, native vegetation and integrate suitable native plants in urban landscape development
- Integrate community and demonstration gardens within Bremerton's open space system
- Encourage landscaping which reduces energy loss
- Ensure code flexibility to enable and encourage environmentally sensitive development

Though the importance of urban agriculture and locally grown food is alluded to in this area of the comprehensive plan, there are opportunities to make these connections more explicit. For example, they could include a discussion on community gardens as a means of managing existing public space, encouraging energy-reducing landscaping, and as a means of promoting local food production.

Economic Development

The Economic Development's appendix notes that in Bremerton there is no registered agricultural production. The plan further notes that "the City's urban setting and services do not preclude it from working with the agricultural sector of the larger community, supporting urban gardens and farmers markets, produce distribution and warehouse centers, agricultural education and transportation needs."[54] The plan also points out that the city sees urban growth as something that is safeguarding farmable lands from sprawl.

One interesting part of this section is the notion that "there are no easily farmable lands within

the City."[55] This is an interesting topic to further explore, especially in Bremerton as of 2011, where there is a wait-list for plots at the only P-Patch in the City.

Downtown Subarea Plan: The Sustainability District

In 2007, the Bremerton City Council approved a "Downtown Sub Area Plan" for the continued revitalization of downtown Bremerton, which includes what the City calls a "Sustainability District."[56] The Downtown Regional Sub Area Plan details Bremerton's attention to sustainability. There are opportunities within this plan to discuss urban agriculture. Though urban agriculture is not specifically spelled out, there are places where it seems implied. This plan could be taken a step further by identifying things like the notion of food security and the benefits of locally grown food. This is a bold program that focuses on an area primarily made up of multi-family housing.

Downtown Subarea Plan: Urban Design

One of the key goals in the urban design section is to create policy that supports long term public health and safety. The incorporation of urban agriculture seems obvious within the context of sustainability, better design, and public health, yet in the layout of urban design strategies for incorporating sustainable design urban agriculture is not mentioned. The plan does discuss green streets; this could be a place that fruit-bearing street trees or edible landscaping might be suggested.

Downtown Subarea Plan: Development Standards

Development standards in shaping Bremerton identify the opportunity for green roofs on multi-family homes as an opportunity for urban agriculture.[57] This is a start in identifying ways in which urban agriculture can be incorporated into the urban landscape.

BACKYARD CHICKENS

BELLEVUE

Fewer than six hens are treated as household pets. More than six hens are regulated as small domestic animals and an additional permit must be obtained. There is no minimum lot size requirement. [58]

BREMERTON

Residents must apply for a Chicken Permit. There is a licensing fee of $12.50 for up to four hens annually. Residents may have no more than 4 hens per single-family residence. Hens do not count toward the four pet limit that residents are allowed to have per household. Chickens shall only be allowed on single-family residential lots.[59]

EVERETT

Residents may have no roosters, although five hens are allowed without a permit. To have more than five, a facility license permit must be obtained from Animal Services. All chickens must be kept enclosed.[60]

SEATTLE

Residents may have up to 8 chickens (and up to more in special cases). Chicken coops must be located at least 10ft away from a dwelling unit. Residents may keep small animals, domestic fowl and bees in all zones as an accessory use. No roosters.[61]

TACOMA

No roosters. Residents may have hens, ducks or other domestic fowl. Chicken coops must be at least 50 feet from your neighbor's house unless they have consented in writing to the city clerk. Chicken owners are subject to the noise ordinance.[62]

EVERETT

SUMMARY

Everett does not include much on urban agriculture in their comprehensive plan. Due to the increased importance the city has placed on locally grown food by permitting the construction of a new food hub, this represents an opportunity to identify places in the comprehensive plan that a discussion of urban agriculture may begin.

PRESENT DISCUSSION

Parks and Recreation

This section has the potential to touch on the issue of urban agriculture. This element seeks to "pursue long-term goals through the acquisition and development of new park land, programs, facilities and services based on recommended standards and assessed needs."[63] If residents determine that urban agriculture is a need, then there is a good opportunity to address urban agriculture issues such as community gardens.

Policy 9.6.1.3 suggests that the city must "pursue a varied acquisition policy to fulfill diverse recreational needs as Everett grows, such as mini parks, neighborhood parks and community parks."[64] Another place that urban agriculture would fit well is within Policy 9.6.4.3: "encourage developers of larger scale developments and subdivisions to build on site private recreational facilities to serve the residents and/or employees."[65] More specific concepts such as edible landscaping or food producing gardens could satisfy this policy. If the plan were more explicit in language, perhaps this use could be promoted. As is the case in many municipalities, school gardens are a popular place to locate teaching gardens as a way to connect children with food; Policy 9.7.1.4 is a good opportunity to include school gardens as it discusses the effort to "ensure availability of public school facilities for public use and promote their linkage with parks and open space."[66]

Land Use

This element discusses promoting the development of neighborhood parks and the use of public school's park space for year round use by residents.[67] This could be elaborated on by discussing the promotion of specific types of parks (i.e. community food producing gardens or urban farms) or even the discussion of the popular community garden model might imply more in the way of promoting educational gardening opportunities for the residents of Everett.

The city wants to encourage "low impact development methods where appropriate, such as clustering to retain native vegetation, use of permeable pavement, soil amendment, green roofs, green streets and other methods."[68] The reason for mentioning green roofs in this case, was not to further the cause of urban agriculture rather for environmental design purposes. However, there are many ways to incorporate urban agriculture and low impact development; green roofs are certainly one way to integrate these two ideas, but fruit trees, berry bushes, edible landscaping and preserving land for community gardening spaces are all ways that the two work together.

SEATTLE

SUMMARY

Seattle has strong residential support for urban agriculture and has developed policy to accommodate it. 2010 was deemed "The Year of Urban Agriculture" and the goal was to promote community agriculture and increase the access to locally grown food. On April 29, 2010 the Department of Planning and Development announced their plan to remove barriers to urban agriculture in Seattle.[69] This plan came in the form of proposed legislation rather than in the form of comprehensive plan language. The studio team has briefly outlined the kinds of legislation that was adopted to inform the reader; this is brief because the goal of this text is to identify where (if anywhere) urban agriculture is discussed in the comprehensive plan.

Seattle's legislative approach to urban agriculture means that there is less in the Comprehensive Plan and more in municipal code. Seattle has made urban agriculture a priority, as evident by the amount of attention exhibited by ordinances, programs and permits. It is worth noting however, the urban agriculture ordinances are a product of visioning which came from the Comprehensive Plan, Neighborhood Plans and the GMA.[70]

PRESENT DISCUSSION

It is important to note that the term "urban agriculture" is not used at all in the Seattle Comprehensive Plan. The language used includes terms such as gardens, community gardening but never "urban agriculture."

The Open Space Network goals specifically identify community gardening as a top priority in providing places for residents to enjoy.[71] Urban Village Policy 57 specifically states that Seattle wishes to "promote inter-agency and intergovernmental cooperation to expand community gardening opportunities."[72] The Cultural Resource section addresses the issue of community gardens as well; the effort here is described to "continue Seattle's long tradition of providing a rich variety of public open spaces, community gardens and public facilities" for recreation, cultural, environmental and economic development reasons.[73] The discussion of community and neighborhood gardens is also mentioned in specific neighborhood sections of the comprehensive plans as well. Seattle's Comprehensive Plan also includes an element of providing food to eat and a roof overhead for all citizens in its Human Development Element.[74] This might be a place to address issues of urban agriculture and food security.

Beyond the Comprehensive Plan

The urban agriculture legislation approved by the Seattle City Council and Mayor in September of 2010 seeks to change the codes to allow for variances like additional height for rooftop greenhouses for food production, keeping domestic fowl and introducing allowance of urban farms in residential zones.[75] Though not present in the Comprehensive Plan, Seattle has also done work to ensure that Seattle residents interested in growing food in planting strips (immediately abutting their own property) are allowed. There are certain standards that must be followed, but there are few barriers and it is a very easy process.[76]

TACOMA

SUMMARY

Tacoma defines urban agriculture as "encompassing a wide range of activities--including community gardens--involving the raising, cultivation, processing, marketing and distribution of food in urban areas."[77] The Tacoma Comprehensive Plan dedicates an entire section to urban agriculture, located within the Urban Forest Policy Element.

PRESENT DISCUSSION

The City of Tacoma prioritizes urban agriculture and recognizes the importance of urban food production as a means of food security and a way to better the environment. The city notes importance in integrating urban economic and ecological systems. The city identifies a clear link between the success of urban agriculture and forestry policies/management.

Beyond the discussion of urban agriculture and Tacoma's goals and policies relating to it is the accompanying belief in community gardens as a means of incorporating small scale agricultural production into spaces reserved for open space and recreation.

The City hopes that by incorporating community gardens into open space plans there will be a three-pronged benefit: social, economic and environmental. Urban agriculture and community garden spaces will enhance the quality of life for Tacoma residents and provide new sources of recreation, food items and a healthy lifestyle.

A few key components from Tacoma's section on urban agriculture are:

1. Create an urban agriculture program.
2. Implement an education and outreach program to increase the awareness of the benefits of locally and sustainably grown food.
3. Establish a target level of service for community gardens.
4. Encourage the use of native/regionally produced edible plants or seeds for use in urban agriculture.
5. Increase the support for urban agriculture through partnerships and resource sharing.
6. Adopt zoning regulations that establish community gardens as a permitted or conditional use.
7. Encourage new affordable housing units to contain designated yard or other shared residents to garden.
8. Encourage development in Mixed-Use centers and commercial areas to incorporate green roofs, edible landscaping and the use of existing roof space for community gardening.

The City of Tacoma makes it clear that urban agriculture is something that will bring them a step closer to their sustainability goals. They state innovative ways of incorporating urban agriculture into the lives of the urban residents.

Destination Downtown

This section includes ideas of incorporating elements like parks, plazas, tree lined streets and

community gardens, which will contribute in making the "downtown a regional destination." In order to achieve this goal, the plan cites the task of making Tacoma a "Sustainable City."[78] The comprehensive plan identified Culinary Arts as a niche industry that it hopes to attract. Its urban agriculture policies and plans are a good way to attract this industry.

In an effort to create a family-friendly and livable downtown, Tacoma hopes that policy 2.3C.C from their Comprehensive Plan will promote "[where feasible] livability benefits (roof gardens, shared amenity space, community centers and daycare).[79]

In the next few sections the idea of "Growing Community through Food Security" is further explored. The City has identified their goal to "develop programs for urban agriculture in areas such as excess right-of-way or existing underutilized land with students, artists and local residents. The City should aim to achieve the eventual goal of education, community building and broad based access to nutritious local produce."[80]

Policies in this section include concepts such as[81]:

- Identify and set aside green spaces throughout the downtown with potential to serve as community gardens.
- Consider access to food in the context of downtown land use decisions and support the creation of a permanent farmers market as a catalyst project.
- Develop a program to help interested residents negotiate seasonal or short-term community garden space on undeveloped or unused lots.
- Provide low cost start-up support to community-based garden programs for tools, soil and other needs.

Beyond the Comprehensive Plan

Sustainability is also a part of Tacoma's planning and policy initiatives. On April 19, the City's Resolution 38249 was unanimously adopted.[82] Within one year the City will have developed a municipal green building policy which might include elements of urban agriculture as discussed in the small scale interventions section of this report. The City Manager is now charged with appointing a Green Building Team; the resolution suggests that this team will include members with expertise in areas ranging from landscape architecture to public health. This is a very timely opportunity for incorporating issues of the food system and specifically, urban agriculture, into the building program for municipal buildings. The current budget for this is $20,000.[83] In April 2011 there were two other Sustainability Resolutions adopted that focused on city procurement and defining sustainability in relation to the city's decision making processes.[84]

STATUS AND SURVEY CONSIDERATIONS

The following section provides a brief report on various types of urban agriculture across the region, including community gardens/P-Patches, school gardens, university gardens, edible landscapes, and private gardening and animal husbandry, with a focus on the five major municipalities, Bellevue, Bremerton, Everett, Seattle, and Tacoma. Organizations that are currently surveying the status of various forms of urban agriculture are noted and referenced. When applicable, the survey and formatting methods of these organizations are analyzed for potential use by the Regional Food Policy Council to further comprehensive research on urban agriculture in the region.

Methodology

The information displayed below was obtained mostly through internet searches for the different types of urban agriculture (e.g. school garden, community garden, P-Patch), the five major municipalities in question (Bellevue, Bremerton, Everett, Seattle, and Tacoma), and through specific searches for institutional gardens (e.g. University of Washington Garden or Seattle University Garden). The urban agriculture categories for this section were created by combining the spatial applications and goals of production created in the first section of this document into more generally understood research categories. Some applications of municipal leadership are addressed through both community gardens and urban farms, while right-of-ways implementations are described in both Private Production and community gardens.

The intent of this project is to provide a starting point for the consolidation of this information, rather than a comprehensive survey. The lack of consistent resources and information is what drives the recommendations for survey methodologies provided. The precedents for these survey methods are determined through the following criteria:

- Already being performed in the central Puget Sound region
- Feasibility of implementation
- Effectiveness of displaying information
- Provide the ability to gain standardized knowledge

Some precedents were found outside the region when none existed within. These were then included only on the basis that they met the other three criteria.

COMMUNITY GARDENS

Overview

A community garden can generally be defined as a parcel of land that is cooperatively cultivated by a group of people.[85] Sometimes the garden is divided into plots that can be rented by different persons or families to be raised individually. Generally, community gardens have been promoted with the purpose of community building, increasing access to fresh, healthy foods, and creating a connection between people and their food. However, other positive effects, such as reducing crime, increasing nearby property values, preserving/creating green space, and creating recreational opportunities have been observed.[86]

Central Puget Sound Region

Numerous programs and organizations in the various counties and city jurisdictions provide robust and diverse support for community gardening. However, this diversity has also segregated data regarding the current state of community garden throughout the region as a whole. Creating a connection between these organizations and combining their respective information will form a more comprehensive view of community gardening in the region. A preliminary database of community gardens in the five jurisdictions is provided in Appendix UB-3 and UB-4 in addition to a resource list. The following is a summary of the information and resources found.

Table UB-1: Summary of Community Gardens

	BELLEVUE	BREMERTON	EVERETT	SEATTLE	TACOMA
# of Gardens (Existing/ Planned)	2/0	2/0	4/1	75/9	19/4
Managed by	City Parks Department	City Parks Department and Port of Bremerton	Various Neighborhood Associations	P-Patch Trust, Department of Neighborhoods, and independent organizations	Metro Parks Service, Various neighborhoods and independent organizations
Plot Size Range	400 SF	200 SF -400 SF	150 SF - 21,750 SF	100 SF - 400 SF	20 SF - 700 SF
Price/SF Range	$0.15	$0.11	$0.20	$0.16 to $0.34	$0.05 - $0.47
Smallest Garden	Crossroads Garden 4,000 SF	Port of Bremerton (exact size unknown)	Port Gardner Neighborhood Garden 704 SF	Pelican Tea 1,000 SF	Yakima Ave Garden approx. 700 SF
Largest Garden	Lake Hills Greenbelt 31,000 SF	Blueberry Park 9,600 SF	Snohomish River Valley Garden* 300,000 SF	Thistle Garden 152,250 SF	Le Grande Garden 7,500 SF

*Still in Planning Stages

Both Bellevue and Bremerton have two community gardens within their jurisdiction. Everett contains four, with a fifth in its planning stages. Little information can be found about the Everett gardens except for their existence as listed on WSU's Growing Groceries website. A full listing of the gardens with key facts and references can be found in the Appendix UB-3 and UB-4.

In comparison, Tacoma has significantly more gardens, with approximately 19 inside the city boundaries as surveyed by Grow Local, with four more in their planning stages. These existing and planned gardens are managed by a variety of organizations, such as the Hilltop Urban Gardens, Guadalupe Land Trust, St. Leo's Food Connection, and Metro Parks Service. Many gardens cater to special groups, such as those who cannot afford garden space, such as

the Neighbors Park Garden which currently offers garden space free of charge. Similarly, Manitou Community Garden and Point Defiance Ruston Senior Center Enabling Garden are handicapped accessible.[87] Leo's Garden has a large social justice component, as it is associated with the St. Leo's Food Connection, an anti-hunger organization.[88]

In Seattle, the P-Patch Trust works in conjunction with the Seattle Department of Neighborhoods to manage and organize the P-Patch Community Gardening Program. To date, this cooperation has created 23 acres, just over a million square feet, of garden space at 75 sites throughout the city and serves about 4,400 gardeners.[89] There are approximately nine additional gardens in planning stages.[90] The P-Patch program, which derived its name from Picardo Farm, the first community garden in the city, also promotes issues of equity and food security through the donation of a portion of the fruits and vegetables grown to local food banks.[91] Plot fee assistance is provided to gardeners in need and 55 percent of the gardeners in a 2007 survey are low income.

Table UB-2: Key Facts about Seattle Gardens Ownership

AMOUNT OF SEATTLE COMMUNITY GARDENS...	# of Gardens
Associated with P-Patch Program	73
Independently managed.	2
In design/development.	5
With sites in discussion.	4
With market gardens.	3
With accessible raised beds.	14
With collective plots only.	3
On Public Housing Sites	15
With wait times 24 months or longer	29
2,000 SF or smaller.	10

Table UB-3: Seattle Garden Land

AMOUNT OF SEATTLE COMMUNITY GARDENS ON LAND OWNED BY...	# of Gardens
Department of Neighborhoods	7
Public Parks	23
Seattle Department of Transportation	9
Seattle Public Utilities	1
Seattle City Light	6
Seattle Fleets and Facilities	1
Seattle Housing Authority	12
Private Land Lease	9
Metro King County	2
P-Patch Trust	9

The oldest P-Patch in Seattle is Picardo Farm established in 1973. It has a total size of 2.25 acres and contains 281 plots typically measuring 100 to 200 square feet. The farm is located in the northeast quadrant of the city on public parkland.[92] Thistle, the largest community garden at 3.5 acres and 160 plots is located to the south of the city land owned by Seattle City Light.[93] Other gardens, such as Ida Mia and Republican community gardens, are smaller sizes at 1,600 square feet and 2,600 square feet respectively, and are sited on private land. Republican is one of the highest demand P-Patches with an average waitlist time of three to four years.[94] Due to these extended waitlist times and high demand for community garden spaces, Seattle has prioritized certain neighborhoods for future P-Patch development.

Current Survey Methodologies and Recommendations

Current information regarding community gardens and P-Patches is being collected and managed through numerous organizations throughout the central Puget Sound region. The studio team proposes that the Regional Food Policy Council compile this information into a comprehensive database that can be periodically updated to reflect the current status of community gardening in the major jurisdictions (and smaller jurisdictions where possible) within the Urban Growth Boundary. This would create an easy reference point when the Regional Food Policy Council is asked for information regarding the state and extent of community gardening in the region as a whole as well as provide baseline information for implementing future gardens and determining potential sites. Furthermore, Seattle has set good precedent through their creation of a Geographic Information System file of the P-Patches within the city limits. Thisaids in GIS analysis that can help determine potential sites for community gardens. Numerous database records a plethora of attributes for the multiple gardens, including address, managing organization, number of plots, and date established. A full list of the attributes can be found in the Appendix UB-1.[95]

The Seattle P-Patch shapefile was created with points to show the location of the garden. While polygons, showing the actual area and shape of the garden would be preferable, this format is acceptable if further information as shown in Table UB-4 can be collected, especially in regards to garden size.

Table UB-4: New attributes for community garden survey.

ATTRIBUTE NAME	INFORMATION DESCRIBED	DEFINED ENTRIES
AREA	Total area of community garden	Size in Acres
FOODBANK	Amount of land dedicated to food bank donations	Size in Acres
PRICE	Price for different plot sizes	in average $/SF to account for differences in size of plots
AVE_WAIT	Average waitlist time for a plot	Time in months
NUM_BUS	Number of bus lines with a stop within .25 miles of the Community Garden	Number of bus lines

K-12 SCHOOL GARDENS

Overview

School gardening has come to the forefront of urban agriculture in recent years as a specific subset of community gardening efforts. Programs such as the Healthy Schools Initiative, Edible Schoolyard, and others have been created to promote the incorporation of gardening into the curricula of schools nationwide. Cornell University's Garden-Based Learning Program lists four major benefits to such programs, and include: Increased nutritional awareness, increased environmental awareness, higher learning achievements, and increased life skills.[96] Improved nutrition occurs through the creation of more positive views of fruits and vegetables.[97] Furthermore, school gardens have also been used to incorporate lessons from disciplines other than nutrition and health, such as math and science, resulting in improved testing in those

areas. [98]Some studies have also shown improved enthusiasm for learning, increase attention, and decreased discipline problems.[99]

Central Puget Sound Region

Programs exist in the region promoting and providing resources for the creation of school gardens. Furthermore, the current state of school gardens in the region is being surveyed by organizations from the city to national level. However, due to the narrowed scope of some organizations, the surveys are inconsistent with each other, and far from comprehensive in their listing of school gardens. The following is a summary of these data sources and the current status of school gardens in the five major municipalities described previously. A more detailed and comprehensive table of schools that currently have gardens is provided in Appendix UB-7.

At a city-wide level, there are two organizations looking at school gardens in the central Puget Sound region. The first is the Puget Sound School Gardens Collective which, despite the name, contains a list of a few Seattle area schools that have gardens and provides links to helpful resources.[100] The second organization is the Tacoma School Garden Network, which is designed to connect potential volunteers with school gardens in need of help.[101] This narrowed intent and focus also narrows the list provided of Tacoma schools containing gardens. There are no city-wide listings regarding school gardens in Bellevue, Bremerton, or Everett.

At a regional level, the Washington State University Master Gardener Program has created an interactive website that allows self-registration of a school garden and displays all gardens already registered.[102] This listing, while likely incomplete due to its reliance on a self registering process, is much more comprehensive and useful to the Regional Food Policy Council than some smaller and more specific resources as it is a regional view of the current state of school gardens. It includes entries for cities such as Bellevue, Bremerton, and Everett that are not surveyed by a dedicated organization for their respective jurisdictions, such as the ones done in Seattle and Tacoma. It would also be helpful for locating schools in smaller jurisdictions. At an even larger scale is the National School Gardens Registry housed on the Kids Gardening Organization website.[103] This is also a self-registering site with a national and international geographic scope and can be used as source for data comparisons. A search application allows the results to be filtered by numerous categories including state, grade range, and gardening emphasis.

A best estimate of the current status of school gardens in the five jurisdictions was determined by combining information from the above sources.. The primary information that could be gathered was simply the existence of a school garden. It was difficult to determine for most of the schools to what degree the garden has been incorporated into the curriculum.

Tacoma has approximately 21 school gardens listed by the three organizations previously mentioned. The majority of school gardens are part of public elementary schools; however, both Bryant Montessori School and McCarver Elementary have programs that involve middle school students.[104] Additionally, two other middle schools were registered with gardens as well as one high school.

Seattle has approximately 18 school listed with gardens between the three sources. As with Tacoma, most are elementary schools. However, there are a number of specialty schools including the Islamic School of Seattle, Seattle Jewish Community School, and Fauntleroy Children's Center that have gardens.[105] The gardens at two elementary schools, Columbia School and Sacajawea Elementary, are also used by middle school students.[106] The Orca Garden at Columbia school was established in 1993, and is one of the older school gardens in Seattle, and boasts 12,000 square feet of gardening space.[107]

No listings for school gardens could be found for Everett or Bremerton. Bellevue High School contains a vegetable garden according to the Washington State University Master Gardner Program resource, but no further details could be found about the garden.[108]

Current Survey Methodologies and Recommendations

The WSU School Garden map is a basic example of a self reporting survey methodology. This technique is helpful in that it is simple to manage and puts the burden on the schools to report their garden. The website would simply need to be created and periodically reviewed. However, with this method it is difficult to prove the accuracy of reported information because it is voluntary for schools to register. Therefore, it is recommended that instead of relying on this map as a comprehensive source of information, that it becomes a starting point for further study and survey.

A more comprehensive database could be created by theRegional Food Policy Council – or advocated to be completed by the separate jurisdictions or an organization such as WSU's Master Gardener Program– that lists the school gardens in the region along with consistent detailed attribute information for comparison. These attributes could include basic information such as the name, address, and size of the garden. Additionally, information could be recorded on the type of school (grade level and public vs. private), the incorporation of the garden into school curriculum, and whether the garden products are served in the school. A more comprehensive list of possible attributes is provided in the Appendix UB-5.

While time consuming, the creation of this database is integral to formulating a targeted promotion campaign for school gardens. It can help determine what schools in the area do not have gardens currently, and therefore should be analyzed for the potential for creating one. It also allows for a better understanding of school gardening in the region to inform the public, policy makers, and other schools.

INSTITUTIONAL GARDENS Universities, Hospitals, and Prisons

Overview

With large land holdings and built-in consumer bases, it is feasible for certain institutions, such as universities, hospitals, and prisons, to create a food production garden to serve their food requirements. These organizations also have opportunities for education through these gardens, regarding agriculture, environmental issues, and nutrition. Students, patients, or inmates can also use these gardens for recreational or healing purposes. Meanwhile, fresh food is produced which can be served on site in cafeterias, donated to local food banks, or sold for fundraising.

Central Puget Sound Region

Even the general extent of these institutions in the central Puget Sound region is difficult to measure as there are few and inconsistent directories. However, Table UB-5 reveals that the instiutions are numerous and provide a good base for potential urban agriculture sites. While the extent of the land owned by these institutions is not consistently available for all municipalities, the summary below shows the *number* of institutions in each category within the five cities. A more detailed listing of these institutions and the presence of a garden on their premises is included in the Appendix UB-10.

Table UB-5: Total potential institutional sites.

INSTITUTION	BELLEVUE	BREMERTON	EVERETT	SEATTLE	TACOMA
Hospitals	3	2	2	13	8
Universities/Colleges	3	2	6	23	7
Prisons/Detention Centers	0	0	1	2	4

The studio team determined that only a handful of these institutions, approximately nine colleges/universities, currently contain a food producing garden through guided internet searches. These included the name of the institution, as listed in the database in Appendix UB-8, and key words such as "garden" and "vegetable."

In Tacoma, the University of Washington Tacoma Campus, the University of Puget Sound, and Pacific Lutheran University have gardens on their campuses. The UW Tacoma garden contains 12 beds of 32 square feet each and donates all the food grown to food banks.[109] Similarly, the garden at Pacific Lutheran that is cultivated by students, faculty members, and the surrounding community, donates nearly two tons of produce to homeless shelters and food banks every year.[110] The garden at the University of Puget Sound campus is used in course curricula and is part of a campus wide sustainability program.[111]

In Seattle, the University of Washington has three separate food producing gardens. One is located at the UW Tower patio, a demonstration garden created through the Education Outreach subcommittee "Green Team."[112] Another, named the UW Farm, was founded in 2004 in what the university had dubbed "unmaintained space."[113] Managed through a student organization, the farm is linked to other on-campus groups such as the UW Student Food Cooperative, the Campus Sustainability Fund, and the Green Coalition, as well as off-campus organizations.[114] Until this year the farm only had a .25 acre site alone the Burke Gilman Trail. After receiving money from the Campus Sustainability Fund, they were able to move to a larger area, over an acre in size, at the Center for Urban Horticulture. The farm is highlighted through a variety of courses, from anthropology to botany, while also providing tours to other school groups from around the region. Finally, while not food producing, a garden of medicinal herbs can be found at the University of Washington Medical Center.[115]

Seattle University, Seattle Pacific University, and Seattle Community College have also created gardens within the City of Seattle. Seattle Central Community College has created a greenhouse to help culinary and food services students consider issues of "seed to plate."[116]

Meanwhile, Seattle University has created both a new Fruit Garden, and a community garden, Chardin P-Patch, which is tended by faculty, students, and community members.[117] Seattle Pacific University has also created an organic community garden on their campus.[118]

In Everett, Trinity Lutheran College recently created a green roof on a parking garage on campus. While not completely devoted to food production, raised vegetable beds were included in the design.[119] Trinity Lutheran is an excellent example that even the smallest intervention can include urban food production.

Other than the University of Washington Medical Center with its the medicinal garden, no hospitals or prisons in the five jurisdictions have a garden on their properties. Websites for the prisons located in the 5 jurisdictions, as listed in Appendix UB-12, had no information regarding any gardens on their premises. However, it is notable that ten of the hospitals have signed the Healthy Food in Healthcare Pledge denoting their advocacy of healthy and responsible food sourcing choices. [120] To further these efforts, these institutions could be more open to the creation of an on-campus garden.

Current Survey Methodologies and Recommendations

There is no comprehensive source dedicated to surveying gardens on educational and institutional properties in the region. This makes it difficult to understand the full extent to which this type of urban agriculture has been implemented. Compounding this difficulty is the variety of organizations, whether the institution proper, departments or colleges, or student/employee organizations, that could manage the garden. The information above regarding this form of urban agriculture was based on information collected from numerous internet articles, institutional websites, and other resources. It can only be found at present by guided internet searches, such as "University of Washington Community Garden." It is possible that some other institutions could have food producing gardens on-site that are not public knowledge.

It is possible due to the limited nature of these institutions in general, to perform a survey that involves contacting each to determine if there is an existing garden or plans for one to be created. This contact can be made through a facilities person that would know this information, even if the institution is not in charge of its management. This knowledge could help create a better understanding of how urban agriculture is being implemented in the region to provide guidance and precedent to other institutions. Furthermore, this could inform a targeted promotion campaign to urge various campuses that currently have no gardens, or no plans to create one to consider the possibility.

URBAN FARMS

Overview

Urban farms are another form of urban agriculture that manifests throughout the central Puget Sound region. These urban farm establishments grow food within urban jurisdictions at a variety of scales, and differ from community gardens in their primary collective nature.

Central Puget Sound Region

In addition to the various community gardens throughout Seattle that are associated with the P-Patch Program, numerous models have been created for urban farms. These include non-

profits, such as AlleyCat Acres and Seattle Tilth, as well as commercial farms such as Amaranth and Magic Bean.[121]

AlleyCat Acres, a newly formed organization, has two urban farms in Beacon Hill and the Central District, both established in 2010.[122] The Beacon Hill farm has just over 1,000 square feet of planted space and donated over 100 pounds of produce to food banks last year. [123] Seattle Tilth has a large educational focus with classes for children and adults as well as numerous teaching gardens through the Seattle area. [124]

Amaranth is a commercial urban farm in Seattle that has a Community Supported Agriculture program and beekeeping. Located at the south end of Seattle, the farm has a unique arrangement with private landowners to allow the farming. [125] In addition to the P-Patch located on the Marra Farm property, the farm proper is four acres of historic preserved farmland. [126] The farm is partnered with Solid Ground, an organization dedicated to ending poverty. The farm also provides educational programs and is connected to local schools such as Concord Elementary, which has a children's garden established in 2000.[127]

Furthermore, urban farms created through municipal leadership, such as the Goat Hill Giving Garden established in 2010, are dedicated to public service. The Goat Hill Garden, located in downtown Seattle, was created specifically to serve the food banks, including the Pike Market Senior Center and the Downtown Food Bank. Maintained by King County employees,the garden has donated over 250 pounds of food to date and is still growing. [128]

Unfortunately, urban farming efforts in Bellevue, Bremerton, Everett, and Tacoma are not as well advertised as those in Seattle, therefore, examples in those cities are not readily available.

Current Survey Methodologies and Recommendations

The primary source for urban farm related information is the Urban Farm Hub.[129] This organization collects information regarding urban farms in the central Puget Sound region, including lists of resources and pertinent organizations. Furthermore, a map has been created to visually show the distribution of the urban farms, community gardens, school gardens, and farmers markets in the Seattle area.[130] However, while their map shows helpful information such as the dates and times farmer's markets are open, other information is lacking. No details are given about the community gardens, P-Patches, or urban farms other than the name and respective category. A map with more information would be more useful to the Regional Food Policy Council specifically if each garden and farm included attribute information such as that compiled for community gardens in Appendix UB-3 and UB-4 including name, size, ownership, date established, and the amount of land dedicated to food banks.

Small Scale Interventions – Private Gardens, Animal Husbandry, and Edible Landscapes Overview

Small scale private production can take numerous forms in an urban setting from plots in community gardens and on privately owned property to micro-scale interventions on balconies, courtyards, and windowsills. Related with the passing of new ordinances allowing or increasing the number of chickens and other domestic livestock on urban private property, is urban animal husbandry, a trend that has been growing in recent years.[131] Small

scale production has also moved to public owned land such as right-of-ways. These edible landscapes are more accessible to the public and allow even greater use of currently underutilized space.

Central Puget Sound Region

Unfortunately, understanding the current scope to which these methods are being practiced in the region is difficult due to the variability, vast scale, and private nature of the methods used. Currently, no extensive surveys have been performed in the region to better understand the scope of this form of private urban food production and animal husbandry. A survey of this information would create a more accurate vision of the extent of private urban agriculture in the region. This knowledge would support policy review and promotion as well as educate the public about the possibilities of small scale private agriculture production.

Current Survey Methodologies and Recommendations

While no surveys have been performed to determine the current status of private gardens in the central Puget Sound region, in other parts of the country these surveys have occurred. This has primarily been done through self-registry style websites such as that of Sonoma County in California.[132] The website allows a person to register a community garden, school garden, or a private garden. The register is required to fill out a small form with key information regarding their garden such as:

- Garden name
- Exact location (used for mapping but not displayed to the public)
- General region within the county (to allow for sorting on the map)
- A short description
- The size of the garden in square feet
- The garden type (front yard, backyard, container, other)
- When the garden was created
- A picture[133]

A map is then created to visually display the distribution of gardens throughout the county and allow people to access more detailed information by choosing a site on the map or by name on a list. While Sonoma County has not incorporated animal husbandry as a possibility for mapping, it is feasible that the same registry system could be used.

Another precedent for this form of mapping, specifically for edible landscapes is City Fruit, a Seattle-based organization.[134] With a self-registry website, the public is encouraged to register a fruit tree on the website including information such as the kind of fruit, height of the tree, whether fruit was seen on the tree, and a short two-word tree type detail.[135] This information is then used to create a map showing the distribution of fruit trees across the city on both public and private property. City Fruit also helps to organize public harvests of fruit trees on public land.

It would be possible for the Regional Food Policy Council to create, or encourage jurisdictions or organizations studying urban agriculture, to create a self-registration type of website to allow a more comprehensive survey of small scale urban agriculture throughout the region. The website could support the registry of numerous forms of private urban agriculture that are otherwise too difficult to survey such as private gardens, small scale right of way interventions,

chicken raising, bee keeping, edible landscapes/fruit trees, and small organizational gardens. It would be possible to include institutional gardens such as university gardens, school gardens, and hospital gardens if desired. Recommended information to be required for registry could be:

- Garden Name
- Garden Type/Animal
- Address (to be mapped but not displayed)
- Land Type (private, parking strip, roundabout, etc)
- Size
- Date Established
- Description
- Managing Organization (if applicable)
- Picture

CONCLUSION

There are numerous efforts of urban agriculture being made in Bellevue, Bremerton, Everett, Seattle, and Tacoma, especially through community and school gardens. It is recommended that the Regional Food Policy Council dissemeniate the information provided in this report to educate the public, policy makers, and elected officials to the current status of urban agriculture in the sentral Puget Sound region. The examples provided can serve as educational precedents to others interested in promoting or doing similar work.

Additionally, the preliminary databases located in the appendices can serve as a starting point for further survey work by RFPC or other organizational bodies. The gathering of data might be outside of the Regional Food Policy Council's perview, however, the information in this report regarding possible attributes to be surveyed and methods used can be disseminated to other organizations.

ANALYSIS METHODOLOGY
to determine potential urban agriculture sites

OVERVIEW AND METHODOLOGY

With the success of numerous community gardens throughout the central Puget Sound region, and high demand for more garden space, it would be useful if jurisdictions could identify more potential land that could be devoted to urban agriculture. As shown through the numerous precedents national and around the central Puget Sound region, there are several types of land that could be developed. These include:

- Private Lands – Vacant
  Institutional/Special Use Lands –
  - Single Building Sites - Schools, Hospitals
  - Campus Sites – Universities, Corporate Campuses, Prisons, Hospitals
- Municipal Lands – Vacant, Developed sites, Park land, and Right-of-Ways (large and small scale intervention)

Each of these land types has slightly different characteristics that make the implementation of a garden more or less successful. Therefore, while the general methodology for determining potential sites is defined based on analysis techniques and basic garden design principles, different tracks based on more land use specific criteria have been created. Major influences for this methodology are "Growing Green"[136] a similar project for analyzing potential municipal sites for community gardens in Seattle as well as "Diggable Cities,"[137] a Portland based application. The criteria used by these two methodologies were the basis of this methodology. However, additional criteria, especially used to determine areas in need, are included in the following methodology. This was done as this methodology is creating a rating system for the appropriateness of a site for urban agriculture, rather than simply stating whether a garden would be physically possible. The measures to determine the rating for each criteria were based on best practices for garden construction, priority for communities in need, and economic considerations.

METHODOLOGY FRAMEWORK

There are four major steps for the methodology framework that guide the analysis for the implementation of community gardens on the various land use types summarized above.

The first step is the identification of all the lands within each type. This is usually the most basic and simple of the steps involving only one criterion but due to the complexity of GIS databases, discerning certain land types is sometimes more difficult might be expected. In areas such as Tacoma, a parcel being used as a school is determined through a tax exemption code listed for the parcel. On the other hand, Seattle has spatial data identifying public schools as well as current uses listed for the parcels.

The second step is the identification of sites with an extremely "low likelihood" of implementation. These sites are considered to have minimal potential because currently

constricting factors are too difficult to overcome without large economic input or physical alterations. These constricting factors, explained in more detail below, deal with economic issues (e.g. the cost to level a site) as well as legal issues (e.g. not allowing building in critical areas). Within Step Three the analysis is divided into two sub-steps. The first ranks potential sites based on physical requirements for a successful garden including size and access; the second part ranks sites based on their location in relation to areas in need for a garden. These two sub-analyses are combined into a final ranking and can be weighted based on the level of priority assigned to the social factors. Finally, using the highest ranking sites in Step Three, more detailed site analysis is performed in Step Four to select final recommended sites for the creation of community gardens.

All of the spatial analysis tracks complete Steps One, Two, and Four in entirety with only slight differentiation in the methods of measurement and subsequent ratings. It is in Step Three that the nuances of the specific land use types deserve more specific attention and consideration. Table UB-7 is a summary of the criteria created for each step of the analysis and the purpose for their inclusion in the analysis. This is followed by description of the criteria and their methods of measurement and rating. Figure UB-2 shows what criteria are applied to the specific land use tracks and more detailed information is provided in Appendix UB-15.

Figure UB-1: Methodology Steps

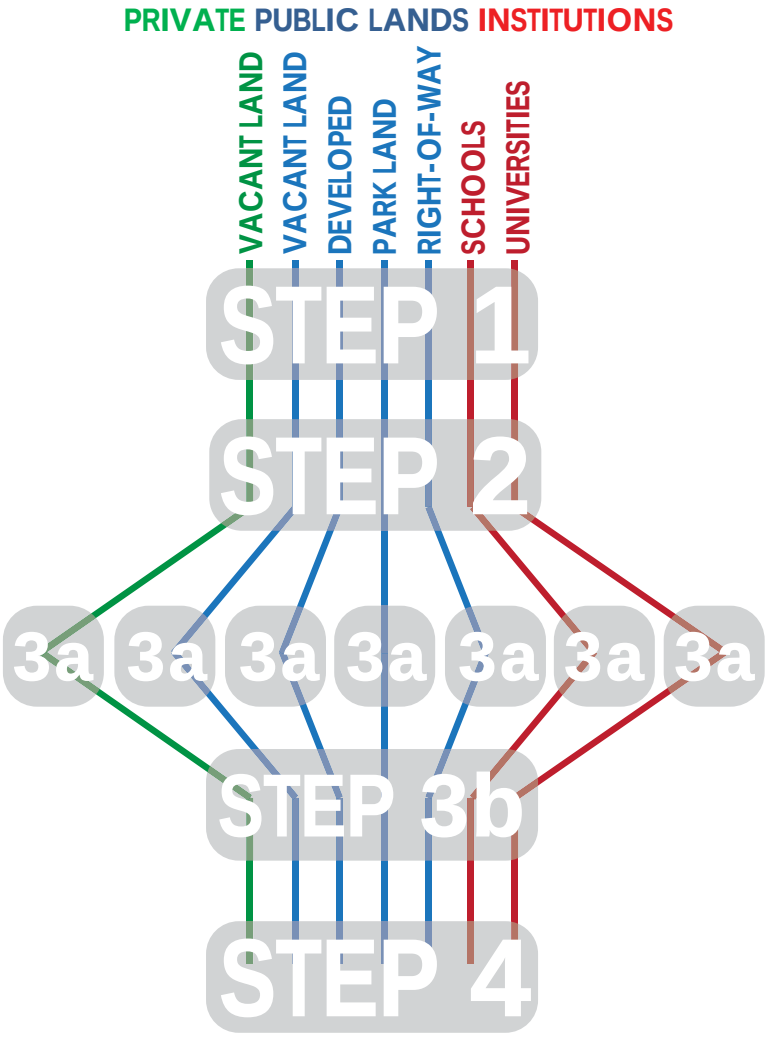


Table UB-7: SUMMARY OF STEPS AND CRITERIA

Step 1 Determine all possible parcels for analysis		
1	Identify all parcels of the land use type being analyzed.	To prepare a general potential site list for analysis
Step 2 Determine sites with extremely low-likelihood of development		
1	Does the site have an extreme steep slope (40%)?	Excludes sites that would require extensive economic or physical input to prepare for a community garden
2	Is the site located in a "critical area?"	Excludes sites based on environmental incompatibility
3	Does the site currently have a garden?	Excludes sites that are already developed as gardens, other analyses could determine the potential for expanding these sites from this analysis
Step 3 Determine best sites for potential development		
A	**...based on physical site characteristics**	
1	What is the size of undeveloped land on the site?	Determines the amount of open spaces potentially available for a garden
2	How many bus lines have a stop within .25 mile of the site?	Determines the accessibility of the site for people using public transit
3	Is parking available within a .25 mile of the site?	Determines the accessibility of the site for people driving vehicles
4	What is the economic value of the land?	Determines if the cost of acquiring the land is prohibitive for a garden development, or if there is potential for a greater intensity development
B	**...based on community need**	
1	Is the site within a .5 mile of an existing P-Patch?	To help encourage and maintain an even distribution of gardens throughout the city
2	What is the current residential density within a mile radius of the site?	To encourage development close to residential densities
3	Is the site within the boundaries of an urban village?	To promote the incorporation of gardens in areas that might have high residential densities in the future
4	Is the site located in a priority neighborhood?	To determine if the site is located in an area that has a high demand for a community garden
Step 4 Site Specific Analysis - Aerial Photography		
1	What level of tree coverage does the site contain?	Determines the nature of unused open space in regards to sun blockage by natural features
2	What is the amount of unused, full sun open space?	Determines the amount of usuable land excluding hardscapes, currently used open space, and areas with sun blockage from built features
3	Is the site easily accessible by pedestrian or vehicle?	Determines whether the site is easily accessible to the public

STEP 1

Under the first step of the methodology is a single criterion: is the parcel in the spatial application track being analyzed? This preparatory step involves consolidating the data based on a land use definition. The specific methodology used to perform this step will vary between jurisdictions depending on the format of the data. More details regarding the possible methods of land use differentiation are given in the Appendix UB-9. The final result of this step, most likely performed in GIS, would be parcels of a certain land use that contain information regarding ownership, current use, and size.

STEP 2

After the first step is complete and all pertinent parcels have been identified, the following criteria are used to determine sites with an extremely low likelihood of development for a community garden. These criteria cannot be defined as definitely excluding factors, because there is still a possibility of the site being used. However, environmental and economic concerns make it very unlikely.

Criteria, Measures, and Ratings

1. Does the site have an extreme slope (>40%)
2. Is the site located in a defined critical area?
3. Does the site currently have a garden?

All of the criteria in this step are measured by whether the site meets or does not meet the criteria. Therefore, any site that answers "yes" to any of the criteria is excluded from the following analysis. The slope can be determined through topographical data (available for most jurisdictions) or spatial data that specifically identifies steep slope areas. For the purpose of this analysis, critical areas are defined as wetlands, landslide zones, and floodplains although, other jurisdictions may include additional pertinent critical areas.

STEP 3A

At this point, potential lands have been identified (Step 1) and some sites have been excluded due to factors that make them highly unlikely for an urban agriculture development (Step 2). It is in this portion of the analysis that the individual tracks determine whether a criterion is used. Generally, all the sites are measured and rated according to the criteria chosen for the individual analysis track. Then, these individual ratings are weighted according to the specific track being followed, and combined into an overall score. This allows the sites to be ranked based on their physical and locational appropriateness for being developed as a garden site. The following is a discussion of the various tracks for potential site analysis, the specific criteria used in each track, and the specific method of application for the criteria for the given track.

Criteria, Measures, and Ratings

1. What is the size of undeveloped land on the site?
    a. Does the site meet minimum size requirements?
    b. What scale intervention is be possible on the site?
2. How many bus lines are within 0.25 miles of the site?
3. Is parking available at the site?
4. What is the economic value of the land?

Criterion One is used to determine whether the size of the site reaches the minimum requirement for a garden, measured in square feet. The required minimum size varies depending on the analysis being performed. Furthermore, the raw data from this criterion can and should be used to categorize the scale of intervention possible on each site. This criterion was incorporated into this step because of the differences in the minimum size of implementation on various tracks as well as the possibility that except for its size, a site might be optimal for urban agriculture based on all the other criteria. Therefore, this site could then still be considered for a micro-implementation.

The next two criteria are related to the accessibility of the site by both public transit and car, and are calculated with the same methodology for all tracks. Criterion Two measures the number of bus lines that have a stop within 0.25 miles of the site. The actual measured number is used as the rating system for this criterion with a cutoff point of 10. The measure of a quarter mile is a generally acceptable measure of a quick, five minute walk. This seems feasible for someone traveling to a community garden carrying tools and other supplies. Criterion Three is binomial with sites receiving a score of one if there is parking, and zero if there is not. Criterion Four relates to the cost of acquiring or leasing the land, and account properties that may be too large and too expensive for the implementation of a garden. Furthermore, a general assumption can be made that a more valuable parcel might be developed sooner to a higher and better use (due to a higher income producing potential) then a less valuable property.

The table below shows which of these criteria are used for the analysis tracks and is followed by more details related to how the criteria are specifically applied. A detailed description of how the criteria are applied and weighted in the specific tracks can be found in the Appendix UB-9.

Figure UB-2: Criteria Used for Specific Spatial Analysis Tracks

	Private Lands	Public Lands				Institutional			
Criteria	Vacant	Vacant	Park	Developed	ROW	Schools	University	Hospitals	Prison
1									
2									
3									
4									

Criteria Used

STEP 3B

In this step, the entire jurisdiction is divided into 100 foot by 100 foot areas or "cells". Each area receives a score for the various criteria described below. This process can be completed once by the organization performing the analysis, as this basis is used for all tracks and analyses. The criteria scores are then weighted based on the spatial application track, and combined into a final score.

Spatial applications of gardens that would serve the general public would benefit most from this analysis. Meanwhile, institutional analysis tracks, such as school gardens and university gardens, are more self-serving and less related to public demand. In those cases, the analysis for this step can be performed and only loosely guide step 4.

Criteria, Measures, and Ratings

The first criterion determines whether a cell is within a half mile of a community garden site. Therefore, each cell would receive a score of one (No community garden within a half mile) or zero (Community garden present within a half mile.) The measure of a half mile is used generally to ensure that community gardens are distributed throughout the city. Criterion Two uses residential density, initially measured at a census block level of people/square mile, and rates them into nine equal interval levels from the least to greatest value. The data is then converted to the more granular cell level so as to maintain consistency with other criteria. Criterion Three is binomial, similar to the first criterion, looking at whether a specific location is within an urban village boundary (receiving a score of one) or not (score of zero). This criterion was developed to help account for future growth of residential densities and funnel garden development to the densest zoned areas. The final criterion is primarily determined through the use of a weighted buffer surrounding established community gardens based on the length of the waitlist. In other jurisdictions, such as the City of Seattle, a list of prioritized neighborhoods was created by the Department of Neighborhoods that could also be weighted in the analysis.

STEP 4

In this final step of analysis, the highest ranked parcels from Step Three are analyzed at a site-specific level to analyze final characteristics for their suitability to development of a community garden or a small-scale right-of-way intervention. This could be done through on-site analysis or, more easily, through a review of aerial photography. All the tracks use the entire set of criteria as follows:

- What level of tree coverage exists on the site?
- What is the size of unused, full sun, pervious open space?
- What is the size of unused, full sun, impervious open space?
- Is the site easily accessible by pedestrian or vehicle?
- Does the site have a flat accessible roof?

The results of this step allow for many types of interpretation. An overall low rating does not necessarily rule out the use of the site for urban agriculture. Rather, it implies that it is not ideal for the typical garden. However, on these low-rated sites, innovative measures, such as containers on hardscapes, rooftop installations, or shade-appropriate typologies, could be implemented. Details for how the above criteria are measured and defined are found in the Appendix UB-9.

CONCLUSIONS

The above analysis serves as a starting point for the Regional Food Policy Council and their constituent municipalities to begin analyses to determine the possibility of incorporating different forms of urban agriculture into their cities.

KEY CONSIDERATIONS

The Larger Potential for Urban Agriculture

- Become acquainted and engage with a larger vision of urban agriculture and its potential to meet the Regional Food Policy Council's goals and objectives by reviewing North American examples.

Comprehensive Plans

- Assess existing, national urban agriculture policy language to find model policy.
- Educate policy-makers and elected officials about model urban agriculture policies and their importance.
- Advocate for the inclusion of specific language regarding urban agriculture in comprehensive plans and planning initiatives to ensure maximum coverage and discussion about urban agriculture.

Survey and Analysis Methods

- Assess existing urban agriculture beyond the P-Patch (comprehensively assess urban agriculture implemented through roof gardens, production on public land, backyard chickens, edible landscaping efforts, institutional on-site food producing efforts, and food access and intervention organizations).
- Assess potential for further implementation of urban agriculture in various spatial applications using the developed methodology.

NEXT STEPS

In order for urban agriculture to be adequately addressed by the Regional Food Policy Council there must be continued research on the existing urban agriculture status in the region. In addition to the recommendations above, we further suggest the following:

- Disseminate the knowledge collected on the current status of urban agriculture and the potential for further implementation in the central Puget Sound region.
- Convene members of the greater urban agriculture community to further the understanding and potential for economic development, food systems education, health improvement, and assuring social equity.
- Consider the potential for urban agriculture to address key concerns like food deserts, job training and income generation, as well as its role in urban food hub design and education.

APPENDIX UB-1

Seattle Community Garden GIS Shapefile Attribute List

Attribute Name	Information Described	Defined Entries
FID	A unique ID number; this is a default attribute created by ArcMap	Number from 1-74
Shape	The type of shape being mapped, this is a default attribute by ArcMap	All entries are "Point"
SITE_ID	An ID number given by the creator of the shapefile - different than the FID	Number from 1-74
NAME	Name of the Community Garden	--
ADDRESS	Street Address of the community garden	--
TYPE	The types of plots in the garden	10X10, 10X20, 10X40, Handicapped Accessible, Communal Plots, Not affiliated with P-Patch Program, Under Development
DEPT	Managing Organization	BEP/PDA, Church, City Light, County, DON, DON/PPT, FFD, Home sight, Metro, Parks, PPT, Private, SDOT, SHA, SSD
UNDERDEVP	A binary system to identify if the garden was underdevelopment when the shapefile was created	1 = Underdevelopment, 0 = Already developed
PROGRAM	The organizing program through which the garden was created	Community Garden, Cultivating Communities, P-Patch
PROGRAM_NO	A number assigned to each of the programs	1=P-Patch; 2= Cultivating Communities, 3=Community Garden
ASSGNBYDON	Whether the garden was assigned by the Department of Neighborhoods	1=Yes; 0=No
URL	A website link for the specific park	--
NUMPLOTS	The number of plots in the garden	Range from 0 to 281
DATE_ESTAB	Date the garden was established	0 = No Data available; Range from 1973 to 2006

APPENDIX UB-2
NOTES FOR COMMUNITY GARDEN DATABASE

If a cell is marked "—" it means the information could not be found**.**

DEPT	CLC = Cascade Land Conservancy GLT = Guadalupe Land Trust
UNDERVEL	2=Potential Garden Site 1=Garden is currently underdevelopment 0=Garden is already in existence
NUM_PLOT	Total number of plots in the garden, seasonal or year-round of any size
AREA	Measure in square feet. Noted garden sizes are derived from the number of plots and average size of plots
FOODBANK	1 = the garden has land specifically harvested for food bank donations 0 = No land is specifically dedicated for food bank donations
PRICE	$/SF – if multiple sizes, price is of average size
AVE_WAIT	(For all cities other than Seattle) Times listed in months; 0 is listed for sites that say they have plots available
WAIT_NUM	(For Seattle only) Number of people on waitlist
WAIT_TIME	(For Seattle only) Average wait time in months

REFERENCES FOR COMMUNITY GARDEN DATABASE:

1. "Frankline Garden Site Map," Metro Parks Tacoma, Accessed May 3, 2011 http://www.metroparkstacoma.org/files/library/266cdbfc24c41280.pdf.
2. "Community Gardens," Metro Parks Tacoma, Accessed May 3, 2011 http://www.metroparkstacoma.org/page.php?id=699.
3. This is an average of the price/SF for the different size plots.
4. Estimated from the number of plots and their sizes.
5. Helen, August 10, 2010, "Photos from Green Thumb Community Garden," Accessed May 5, 2011 http://www.facebook.com/group.php?gid=129893867033700#!/photo.php?fbid=1570721231790&set=o.129893867033700&type=1&theater.
6. "Community Gardens."
7. Estimated from aerial photography.
8. An average of the resident price for Seasonal Plot and Year Round Plot divided by 400SF
9. Estimated averaging the plot sizes to 300SF divided by the resident cost of $34 as found from:
   "Pea Patch, Annual Garden Plots," City of Bremerton, Accessed May 5, 2011, http://www.ci.bremerton.wa.us/articles.php?id=565.
10. "Bayside Watch," Bayside Neighborhood Association, February, 2010, Accessed May 7, 2011, http://baysidena.yolasite.com/resources/bna_newsletter_2-10_screen_final.pdf.
11. Brandy, April 4, 2011, "P-Patches," Kitsap Cuisine Blog, Accessed May 6, 2011, http://kitsapcuisine.com/2011/04/04/community-garden-plots/.

12. "Public Gardening takes root - Though demand for Blueberry Park P-Patch plots exceed supply, efforts to build more gardens in Bremerton and Silverdale are stalled," Lynsi Burton, Bremerton Patriot, Februrary 11, 2011, Accessed May 2, 2011, http://www.pnwlocalnews.com/kitsap/pat/news/115971189.html.
13. The exact wait time is unknown, but it is known that there is a waiting list.
14. The resident price for a Seasonal Plot divided by 400SF

REFERENCES AND NOTES FOR SEATTLE GARDEN DATABASE

The basis of this database was through the P-Patch shapefile:
"P-Patch," City of Seattle GIS Data, Washington State Geospatial Data Archive, Accessed April 25, 2011 https://wagda.lib.washington.edu/data/geography/wa_cities/seattle/index.html.

This information was updated through the websites listed for each garden in the database.

Due to the standard fee for most Seattle P-Patch plots, $23 application fee and $10 for every 100 SF of garden space, the column PRICE is not shown in the database.

APPENDIX UB-3:
COMMUNITY GARDEN DATABASE (NOT SEATTLE)

SITE_ID	NAME	ADDRESS	CITY	TYPE	DEPT	UNDERDEVP
1	Crossroads Community Garden	15801 NE 15th Street	Bellevue	10' x 40', Seasonal	Parks and Recreation	0
2	Lake Hills Greenbelt	15416 SE 16th Street	Bellevue	Handicapped Accessible, 10' x 40', Seasonal and Year-Round	Parks and Recreation	0
3	Blueberry Park	737 Sylvan Way	Bremerton	10' x 20', 16' x 25' [12]	City of Bremerton	0
4	Port of Bremerton	Industrial and Business Parks - Port of Bremerton	Bremerton	--	Port of Bremerton	0
5	Bayside P-Patch	1201 23rd Street	Everett	10' x 15' [8]	Bayside Neighborhood	0
6	Lowell Community Garden	5829 Lowell-Larimer Road	Everett	--	--	0
7	Port Gardner Neighborhood Association P-Patch	3633 Federal Avenue	Everett	Raised Beds, Approx 4' x 8' [7]	Port Gardner Neighborhood	0
8	Snohomish River Valley Garden	--	Everett	40' x 40', .5 acre	Transition Port Gardner	1
9	The Secret Garden	--	Everett	--	--	0
10	Brown's Point Community Garden	4301 Browns Point Boulevard	Tacoma	8' x 18'	Church	0
11	E. 51st and E. K St	1000 E. 51st St	Tacoma	--	MetroParks/ CLC	1
12	First Creek Garden	1610 E. Wright Ave	Tacoma	--	First Creek Neighbors	0
13	Franklin Garden	1201 South Puget Sound Ave.	Tacoma	10' x 20', 15' x 20', seasonal, year-round[1]	MetroParks	0
14	Gallucci Learning Garden	S. 14th Ave and G St.	Tacoma	rain garden, greenhouse, demo garden	WSU/GLT	0
15	Grace Baptist Church	2507 N Vassault St	Tacoma	5' x 20'	Church	0
16	Green Thumb Community Garden	Portland Ave & Wright St	Tacoma	Raised Boxes - 4' x 8' [5]	Neighborhood	0

NUM_PLOT	DATE_ESTAB	AREA	FOODBANK	PRICE	AVE_WAIT	CONTACT
10	--	4000[4]	--	0.15[14]	--	Parks and Recreation Dept
79	--	31000[4]	--	0.16[8]	--	Parks and Recreation Dept
32	--	9600	--	0.11[9]	--[13]	For a plot: 360.473.5305
10[11]	--	--	--	--	--	Port Sustainability Manager - Laura Melrose
44	1993[10]	6600[4]	1	0.20[3]	--	Mary Belshaw 425.258.1527
--	--	--	--	--	--	--
22	--	704[4]	--	--	--	--
18	2011	300000	1	--	--	--
--	--	--	--	--	--	
20	--	2880	1	0.17	0	Cindy Niemi bcnieni@comcast.net 253.924.1847
--	2011	--	--	--	--	Kristen McIvor kristenm@ cascadeland.org
--	2011	--	--	--	--	Dan Fear danfear@hotmail.com 253.304.2808
65[1]	--	15000[4]	1[1]	0.12[3]	--	Doreen Ordell 253.305.1050
1	2011	--	--	--	--	guadalupelandtrust@gmail.com 253.572.5533
10	--	1000[4]	0	0.30[3]	0	Rich Fermo 253.752.3910
44[5]	--	10000[5]	0	0.47[3]	--	Paul Stuthman stuthman@yahoo.com 253.678.5483

APPENDIX UB-3 cont'd:
COMMUNITY GARDEN DATABASE (NOT SEATTLE)

SITE_ID	NAME	ADDRESS	CITY	TYPE	DEPT	UNDERDEVP
17	Hilltop House	S. 19th St and S Yakima Ave	Tacoma	10' x 12', orchard	GLT/St. Leos	0
18	Ilse's Garden	N Ainsworth Ave and N 5th St	Tacoma	10' x 10'	--	0
19	Junett Community Garden	Approx 2990 N 16th St.	Tacoma	--	CLC	1
20	Kandle Garden	2323 N Shirley St	Tacoma	Approx 20 x 35, 10 x 45, 15 x 45,	Metro Parks	0
21	Le Grande Garden	S 18th St and S G st	Tacoma	--	GLT	0
22	Leo's Garden	1323 South Yakima Ave	Tacoma	--	St. Leo's Food Connection	0
23	Manitou Community Garden	4806 South 66th St	Tacoma	Handicapped Accessible	Manitou Community Center	0
24	McCarver/Zina Linnik Community Garden	2111 South J Street	Tacoma	--	MetroParks/ McCarver Elementary	0
25	N 43rd and Pearl	4300 N Pearl St	Tacoma	--	MetroParks	1
26	Neighbors Park Garden	800 S I St	Tacoma	--	8th and I Neighbors Goup	0
27	Northeast Tacoma Community Garden	NE 57th and Norpoint Way NE	Tacoma	--	GLT	0
28	Orchard and Vine	N 45th Ave and N Orchard St	Tacoma	--	Unknown, but on city property	0
29	Proctor Garden	3901 N 21st St.	Tacoma	10' x 20'	MetroParks	0
30	Pt Defiance Ruston Senior Center Enabling Garden	4716 N. Baltimore	Tacoma	Handicapped Accessible	Ruston Sr. Center	0

NUM_PLOT	DATE_ESTAB	AREA	FOODBANK	PRICE	AVE_WAIT	CONTACT
11	--	1320[4]	1	0	0	Charlie Vogelheim jvgleaner@ foodconnection.org
9	--	900[4]	1	--	12	Steven Garrett geografood@ yahoo.com
--	2011	--	--	--	--	Kristen McIvor kristenm@ cascadeland.org
27	--	15000[6]	0	0.05[3]	--	Doreen Ordell 253.305.1050
--	--	17500[7]	0	0	--	guadalupelandtrust@gmail.com 253.572.5533
--	--	--	1	--	--	Charlie Vogelheim jvgleaner@foodconnection.org
--	--	--	1	--	--	Andrew Mordhorst 253.475.8416
--	--	--	--	--	--	castingsorg@ gmail.com
--	--	--	--	--	--	Kristen McIvor kristenm@cascadeland.org
--	--	3400[7]	--	0	--	8thandigarden@gmail.com
--	--	--	--	--	--	guadalupelandtrust@gmail.com 253.572.5533
--	--	--	--	--	--	orchardandvine@ gmail.com
46	--	9200[4]	0	0.15[3]	--	Doreen Ordell 253.305.1050
--	--	--	--	--	--	Senior Center 253.756.0601

SITE_ID	NAME	ADDRESS	CITY	TYPE	DEPT	UNDERDEVP
31	Rogers Parks	3092 E L St	Tacoma	--	CLC	1
32	S. 85th and Sheridan	1400 S 85th St	Tacoma	--	CLC	1
33	Yakima Ave Garden	4620 S Yakima Ave	Tacoma	4' x 10', 4' x 6', 6' x 10', 2' x 10'	GLT	0

NUM_PLOT	DATE_ESTAB	AREA	FOODBANK	PRICE	AVE_WAIT	CONTACT
--	--	--	--	--	--	Kristen McIvor kristenm@ cascadeland.org
--	--	--	--	--	--	Kristen McIvor kristenm@ cascadeland.org
19	--	700^4	1	--	0	guadalupelandtrust@gmail.com 253.572.5533

APPENDIX UB-4:
COMMUNITY GARDEN DATABASE (SEATTLE ONLY)

SITE _ID	NAME	ADDRESS	TYPE	DEPT	UNDER DEVP
1	Jackson Park	10TH AVE NE & NE 133RD ST	Handicapped Accessible /10x10/10x20/10x40	Parks	0
2	Pinehurst	11525 12TH AVE NE	Handicapped Accessible /10x10/10x20/10x40	PPT	0
3	Evanston	EVANSTON AVE N & N 102ND ST	10x10/10x20/10x40	City Light	0
4	Ballard	8527 25TH AVE NW	Handicapped Accessible /Seasonal/10x10/10x20/ 10x40	Church	0
5	Picardo Farm	NE 82ND ST & 26TH AVE NE	Handicapped Accessible /Seasonal/ Multiple plots/10x10/10x20	Parks	0
6	Burke-Gilman Gardens	5200 MITHUN PL NE	Handicapped Accessible/10x10	BEP/ PDA	0
7	Magnuson	MAGNUSON PK (7400 SAND POINT WY NE)	10x10/10x20/10x40	Parks	0
8	Ravenna	5200 RAVENNA AVE NE	10x10/10x20	SDOT	0
9	Good Shepherd	BAGLEY AVE N & N 47TH ST	10x10/10x20	Parks	0
10	University District	8TH AVE NE & NE 40TH ST	Handicapped Accessible /10x10/10x20/10x40	Metro	0
11	Interbay	15TH AVE W & W WHEELER ST	Handicapped Accessible /10x10/10x20/10x40	Parks	0
12	Eastlake	2900 FAIRVIEW AVE E	Handicapped Accessible /10x10/10x20	Parks	0
13	Colman Park	3098 S GRAND ST	10x10/10x20/10x40	Parks	0
14	Snoqualmie	13TH AVE S & S SNOQUALMIE ST	10x20/10x40	City Light	0
15	Ferdinand	COLUMBIA DR S & S FERDINAND ST	10x20/10x40	City Light	0
16	Delridge	5078 25TH AVE SW	10x10/10x20/10x40	Parks	0
17	University Heights	5031 UNIVERSITY WAY NE	Handicapped Accessible/10x10	SSD	0
18	Thistle	M L KING JR WY S & S CLOVERDALE ST	10x40	City Light	0

NUM PLOTS	DATE_ ESTAB	AREA	FOOD BANK	WAIT_ TIME	BUS_ LINE	NOTES	URL
51*	1974	14,100	--	14	2	Buslines 73 & 71	http://www.seattle.gov/neighborhoods/ppatch/locations/1.htm
15	1976	5,000	1	18	2	Buslines 377 & 73, on leased land	http://www.seattle.gov/neighborhoods/ppatch/locations/2.htm
42	1974	11,600	--	18	3	Buslines 358, 5, & 75	http://www.seattle.gov/neighborhoods/ppatch/locations/3.htm
94*	1976	18,000	1	48	3	Buslines 48,18, & 75	http://www.seattle.gov/neighborhoods/ppatch/locations/4.htm
281	1973	98,000	--	12	1	Busline 72	http://www.seattle.gov/neighborhoods/ppatch/locations/5.htm
30	1989	3,500	--	18	2	Buslines 74 & 75	http://www.seattle.gov/neighborhoods/ppatch/locations/6.htm
140	1977	130,500	--	30	2	Buslines 74 & 75	http://www.seattle.gov/neighborhoods/ppatch/locations/7.htm
12	1981	2,200	--	36	2	Buslines 71 & 72	http://www.seattle.gov/neighborhoods/ppatch/locations/8.htm
43	1981	8,400	--	42	2	Buslines 16 & 44	http://www.seattle.gov/neighborhoods/ppatch/locations/9.htm
48	1976	14,400	--	24	7	Buslines 31, 49, 66, 70, 71, 72, & 73	http://www.seattle.gov/neighborhoods/ppatch/locations/10.htm
132	1974	43,000	1	30	4	Buslines 15, 17, 18 & 81	http://www.seattle.gov/neighborhoods/ppatch/locations/11.htm
50*	1981	10,000	--	48	5	Buslines 66, 70, 71, 72, & 73; Currently being expanded by 22 plots	http://www.seattle.gov/neighborhoods/ppatch/locations/12.htm
47	1974	14,000	--	6	1	Busline 14; Contains a small orchard	http://www.seattle.gov/neighborhoods/ppatch/locations/13.htm
45	1974	18,000	--	12	2	Buslines 36 & 60	http://www.seattle.gov/neighborhoods/ppatch/locations/14.htm
110	1982	44,000	--	12	1	Busline 36	http://www.seattle.gov/neighborhoods/ppatch/locations/15.htm
47	1974	9,400	--	18	2	Buslines 20, 85	http://www.seattle.gov/neighborhoods/ppatch/locations/16.htm
37	1991	5,900	--	24	4	Buslines 70, 71, 72, & 73 Market Share	http://www.seattle.gov/neighborhoods/ppatch/locations/17.htm
160	1974	152,250	--	12	3	Buslines 36, 42, & 48	http://www.seattle.gov/neighborhoods/ppatch/locations/18.htm

APPENDIX UB-4 cont'd:
COMMUNITY GARDEN DATABASE (SEATTLE ONLY)

SITE _ID	NAME	ADDRESS	TYPE	DEPT	UNDER DEVP
19	Judkins	24TH AVE S & S NORMAN ST	10x10/10x20	DON/ PPT	0
20	Republican	20TH AVE E & E REPUBLICAN ST	Handicapped Accessible /10x20	Private	0
21	Alki	2126 ALKI AVE SW	--	Private	0
22	Bradner Gardens	29TH AVE S & S GRAND ST	10x10/10x20	Parks	0
23	Estelle Street	RAINIER AVE S & S ESTELLE ST	10x10/10x20/10x40	SDOT	0
24	Phinney Ridge	3RD AVE NW & NW 60TH ST	10x10/10x20*	SDOT	0
25	Ida Mia Garden	E MADISON ST & LAKE WASHINGTON BV E	10x10	Private	0
26	Hazel Heights	NW 42ND ST & BAKER AVE NW	--	PPT	0
27	Belltown	ELLIOTT AVE & VINE ST	10x10	Parks	0
28	Queen Anne	3RD AVE N & LYNN ST	10x10/10x20	Parks	0
29	Hillman City	46TH AVE S & S LUCILE ST	Handicapped Accessible /10x10/10x20	Church	0
30	Climbing Water	S DEARBORN ST & HIAWATHA PL S	--	Home sight	0
31	Squire Park	14TH AVE & E FIR ST	10x10/10x20	DON	0
32	Fremont	N 40TH ST & WOODLAND PARK AVE N	10x10	PPT	0
33	Cascade	MINOR AVE N & THOMAS ST	10x10	Parks	0
34	Thomas Street Gardens	1010 E THOMAS ST	Handicapped Accessible /10x10	Parks	0
35	Greenwood	343 NW 88TH ST	10x10/10x20	PPT	0
36	Marra Farm	5TH AVE S & S DIRECTOR ST	10x10/10x20/10x40	County	0
37	Haller Lake	13045 1ST AVE NE	Handicapped Accessible /10x10/10x20/10x40	Church	0
38	Greg's Garden	14TH AVE NW & NW 54TH ST	10x10	Metro	0
39	Immaculate	18TH AVE & E COLUMBIA ST	Handicapped Accessible /10x10	Church	0

NUM PLOTS	DATE_ ESTAB	AREA	FOOD BANK	WAIT_ TIME	BUS_ LINE	NOTES	URL
21	1986	5,600	--	12	2	Buslines 4 & 48	http://www.seattle.gov/neighborhoods/ppatch/locations/19.htm
19	1986	2,600	--	42	1	Busline 12; leased land	http://www.seattle.gov/neighborhoods/ppatch/locations/20.htm
7	2002	--	--	--	--	--	http://www.seattle.gov/neighborhoods/ppatch/locations/21.htm
43	1987	14,330	--	12	1	Busline 14; Solar outbuilding and	http://www.seattle.gov/neighborhoods/ppatch/locations/22.htm
23	1990	6,000	--	12	3	Buslines 7, 9, &48; Behind John Muir	http://www.seattle.gov/neighborhoods/ppatch/locations/23.htm
20	1991	2,600	--	30	2	Buslines 5 & 44; 30% grade	http://www.seattle.gov/neighborhoods/ppatch/locations/24.htm
7	1994	1,600	--	18	1	Busline 11	http://www.seattle.gov/neighborhoods/ppatch/locations/25.htm
19*	2010	--	--	--	1	Busline 28; beekeeping	http://www.seattle.gov/neighborhoods/ppatch/locations/26.htm
36	1994	4,400	--	30	6	Buslines 15, 16, 18, 99 &358 and streetcar	http://www.seattle.gov/neighborhoods/ppatch/locations/27.htm
40	1994	15,000	--	48	2	Buslines 3 & 4	http://www.seattle.gov/neighborhoods/ppatch/locations/28.htm
45	1994	9,000	--	18	1	Busline 7	http://www.seattle.gov/neighborhoods/ppatch/locations/29.htm
15*	2006	1,800	--	18	6	Buslines 4, 7, 8, 9, 34 & 42; Easement on private property	http://www.seattle.gov/neighborhoods/ppatch/locations/30.htm
30	1995	5,000	--	30	1	Busline 27	http://www.seattle.gov/neighborhoods/ppatch/locations/31.htm
29*	1995*	--	--	48	2	Buslines 16 & 26	http://www.seattle.gov/neighborhoods/ppatch/locations/32.htm
38	1996	7,000	1	30	1	Busline 70	http://www.seattle.gov/neighborhoods/ppatch/locations/33.htm
35	1997*	3,200	--	54	2	Busline 7 & 14	http://www.seattle.gov/neighborhoods/ppatch/locations/34.htm
32	1997	3,200	--	30	3	Buslines 5, 28 & 48	http://www.seattle.gov/neighborhoods/ppatch/locations/35.htm
28	1997	5,600**	1	1	2	Buslines 130 & 132; additional farm section	http://www.seattle.gov/neighborhoods/ppatch/locations/36.htm
52	1998	--	--	18	2	Buslines 315 & 317; leased land; beekeeping	http://www.seattle.gov/neighborhoods/ppatch/locations/37.htm
20	1999	2,500	--	30	2	Buslines 15 & 28	http://www.seattle.gov/neighborhoods/ppatch/locations/38.htm
18	1998	1,800	--	30	2	Buslines 4 & 12	http://www.seattle.gov/neighborhoods/ppatch/locations/39.htm

APPENDIX UB-4 cont'd:
COMMUNITY GARDEN DATABASE (SEATTLE ONLY)

SITE _ID	NAME	ADDRESS	TYPE	DEPT	UNDER DEVP
40	Courtland Place	S SPOKANE ST & 36TH AVE S	10x10	SDOT	0
41	Pelican Tea	E MERCER ST & 19TH AVE E	Communal plots (no individual gardening)	SDOT	0
42	Roosevelt	7012 12TH AVE NE	10x10*	DON	0
43	Mad P	30TH AVE E & E MERCER ST	10x10	SDOT	0
44	Queen Pea	5TH AVE N & BLAINE ST	10x10 (2 accessible plots)	Parks	0
45	Thyme Patch	2853 NW 58TH ST	10x10	Parks	0
46	Beacon Bluff	S MASSACHUSETTS ST & 15TH AVE S	10x10	SDOT	0
47	Longfellow Creek	25TH AVE SW & SW THISTLE ST	--	Parks	0
48	Linden Orchard	LINDEN AVE N & N 67TH ST	10x10 only	Parks	0
49	Brandon Orchard	47TH AVE S & S BRANDON ST	Communal plots (no individual gardening)	DON	0
50	Lincoln Park Annex (Solstice Park)	7400 FAUNTLEROY WY SW	--	Parks	0
51	Angel Morgan	42ND AVE S & S MORGAN ST	--	SDOT	0
52	Oxbow Park	6430 CORSON AVE S	--	Parks	0
53	Maple Leaf	5TH AVE NE & NE 103RD ST	--	Parks	0
54	Hawkins Gardens	E JEFFERSON ST & MLK JR WAY	--	DON	0
55	Spring Street*	25th AVE & E SPRING ST	Handicapped Accessible, 10x10	DON	0
57	Rainier Vista Sunrise Garden (203)	33RD AVE S & S OREGON ST	--	SHA	0
58	Ranier Vista Snoqualmie (214)	29TH AVE S & S SNOQUALMIE ST	--	SHA	0
59	Ranier Vista Dakota Park (215)	S LILAC ST & MLK JR WAY S	--	SHA	1
60	Yesler Terrace Playground (60) (201)	10TH AVE S & S MAIN ST	10x20/10x40*	SHA	0

NUM PLOTS	DATE_ ESTAB	AREA	FOOD BANK	WAIT_ TIME	BUS_ LINE	NOTES	URL
25	1999	2,500	--	12	1	Busline 7	http://www.seattle.gov/neighborhoods/ppatch/locations/40.htm
0	2001	1,000	--	48	2	Buslines 4 & 12	http://www.seattle.gov/neighborhoods/ppatch/locations/41.htm
30	2003	3,500	--	30	2	Buslines 66 & 72	http://www.seattle.gov/neighborhoods/ppatch/locations/42.htm
15	2001	2,500	--	30	1	Buslines 11	http://www.seattle.gov/neighborhoods/ppatch/locations/43.htm
34	2002	4,000	--	30	1	Busline 3	http://www.seattle.gov/neighborhoods/ppatch/locations/44.htm
14	2003	4,800	--	30	1	Busline 17	http://www.seattle.gov/neighborhoods/ppatch/locations/45.htm
15	2002	1,500	--	24	2	Buslines 36 & 60; sloped site	http://www.seattle.gov/neighborhoods/ppatch/locations/46.htm
20	2003	4,000	--	18	2	Buslines 20 & 22	http://www.seattle.gov/neighborhoods/ppatch/locations/47.htm
21*	2003	2,500	--	30	2	Buslines 5 & 358	http://www.seattle.gov/neighborhoods/ppatch/locations/48.htm
0	2004	2,500	--	0	1	Busline 7; orchard	http://www.seattle.gov/neighborhoods/ppatch/locations/49.htm
40*	2003*	--	--	30	1	Busline 36	http://www.seattle.gov/neighborhoods/ppatch/locations/50.htm
48	2004	22,650	1	12	4	Busline 7, 9, 42, & 48	http://www.seattle.gov/neighborhoods/ppatch/locations/51.htm
25	2004	3,000	--	12	4	Buslines 60, 131, 134, & 174	http://www.seattle.gov/neighborhoods/ppatch/locations/52.htm
22*	2007*	--	--	18	1	Busline 41	http://www.seattle.gov/neighborhoods/ppatch/locations/53.htm
20*	2005	2,100	--	18	4	Buslines 2, 3, 8, & 84	http://www.seattle.gov/neighborhoods/ppatch/locations/54.htm
15	2011	1,900	1	--	3	Buslines 2, 3, & 48	http://www.seattle.gov/neighborhoods/ppatch/locations/55.htm
0	1996	--	--	--	--	--	http://www.seattle.gov/friendsofppatch/cultivating.htm
0	2006	--	--	--	--	--	http://www.seattle.gov/friendsofppatch/cultivating.htm
0	2006	--	--	--	--	--	http://www.seattle.gov/friendsofppatch/cultivating.htm
11	1995	9,224*	--	0	1	Busline 27; plots for Yesler Terrace Residents only	http://www.seattle.gov/neighborhoods/ppatch/locations/60.htm

APPENDIX UB-4 cont'd:
COMMUNITY GARDEN DATABASE (SEATTLE ONLY)

SITE _ID	NAME	ADDRESS	TYPE	DEPT	UNDER DEVP
61	Yesler Terrace Ballpark (61) (202)	8TH AVE S & S WASHINGTON ST	10x20/10x40*	SHA	0
62	Yesler Terrace Freeway (62) (212)	I-5 & S MAIN ST	10x20/10x40*	SDOT	0
63	NewHolly Market and Community Garden* (63) (213)	HOLLY PARK DR S & S 40TH ST	--	SHA	0
64	New Holly Lucky Garden* (64) (209)	SHAFFER AVE S & S HOLLY ST	10x10	SHA	0
65	New Holly 29th Ave* (65) (208)	29TH AVE S & S BRIGHTON ST	10x10	SHA	0
66	New Holly Power Garden (66) (211)	32ND AVE S & S BRIGHTON ST	10x10	City Light	0
67	New Holly Youth & Family Garden* (67) (206)	32ND AVE S & S BRIGHTON ST	--	SHA	0
69	High Point MacArthur Park*	2726 MacArthur Lane	--	--	--
69	High Point MacArthur Park*	2726 MACARTHUR LANE	--	SHA	1
70	High Point Park Commons (217)	SW GRAHAM ST & 32ND AVE SW	--	SHA	0
71	Hillside* (207)	MLK JR WY S & S MCCLELLAN ST	--	FFD	0
72	West Genesse Garden*	SW GENESSEE 7 42ND AVE SW	10x10	Church	0
73	Bitter Lake*	N 143RD & LINDEN AVE N	Under development	SPU	1
74	Leo Farm*	51ST & Leo	--	--	2
75	Unpaving Paradise*	E JOHN ST & SUMMIT AVE E	10x10	Parks	0
76	Howell Collective	1514 E HOWELL	Communal plots (no individual gardening); Under development	Parks	1
77	Shiga's Garden	5522 UNIVERSITY WAY	10x10	DON	0
78	Dravus Pump Station	23RD AVE W 7 W DRAVUS	Under development	--	2

NUM PLOTS	DATE_ ESTAB	AREA	FOOD BANK	WAIT_ TIME	BUS_ LINE	NOTES	URL
16	1995	12,843*	--	0	1	Busline 27; plots for Yesler Terrace Residents only	http://www.seattle.gov/neighborhoods/ppatch/locations/60.htm
21	2005	12,843	--	0	1	Busline 27; plots for Yesler Terrace Residents only	http://www.seattle.gov/friendsofppatch/cultivating.htm
23	2005	6,000	--	24	1	Busline 3; Market Share	http://www.seattle.gov/neighborhoods/ppatch/locations/63.htm
9	2001	2,000	--	--	1	Busline 36	http://www.seattle.gov/neighborhoods/ppatch/locations/64.htm
11	2001	2,000	--	--	1	Busline 36	http://www.seattle.gov/neighborhoods/ppatch/locations/65.htm
28/40	2003	12,000	--	24	2	Buslines 3 & 36	http://www.seattle.gov/friendsofppatch/cultivating.htm
--	2000	1,000	--	--	1	Busline 106	http://www.seattle.gov/friendsofppatch/cultivating.htm
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	http://www.seattle.gov/friendsofppatch/cultivating.htm
--	--	--	--	--	--	--	http://www.seattle.gov/friendsofppatch/cultivating.htm
38	2001	8,000	--	0	1	Busline 594; Must be a Mt. Baker Association low-income tenant	http://www.seattle.gov/neighborhoods/ppatch/locations/71.htm
12	2009	1,279	1	--	2	Busline 54 & 55	http://www.seattle.gov/neighborhoods/ppatch/locations/72.htm
--	2011	--	--	--	3	Buslines 5, 28, & 358	http://www.seattle.gov/neighborhoods/ppatch/locations/73.htm
--	--	--	--	--	--	--	--
36	2010	--	--	--	1	Busline 14	http://www.seattle.gov/neighborhoods/ppatch/locations/75.htm
0	2011	--	--	--	2	Buslines 10 & 12	http://www.seattle.gov/neighborhoods/ppatch/locations/76.htm
22	2010	--	1	12	4	Buslines 70, 71, 72, & 73; leased land	http://www.seattle.gov/neighborhoods/ppatch/locations/77.htm
--	--	--	--	--	--	--	--

APPENDIX UB-4 cont'd:
COMMUNITY GARDEN DATABASE (SEATTLE ONLY)

SITE _ID	NAME	ADDRESS	TYPE	DEPT	UNDER DEVP
79	Whittier Heights (also Kirke 81)	728 9TH AVE NW	Under development	--	2
80	Magnolia Manor Park	3500 28TH AVE W	Under development	DON	2
82	John C Little	37TH AVE 7 & S WILLOW	Under development	--	2
83	Greenwood Park	FREMONT AVE N 7 N 89TH ST	Under development	--	1
85	Barton Street Garden	34TH AVE SW 7 SW BARTON	Under development	SPU	1
301	Danny Woo Garden	6TH AVE S & S WASHINGTON ST	Not affiliated with the P-Patch Program	--	0
302	El Centro De La Raza	2524 16TH AVE S	Not affiliated with the P-Patch Program	--	0

NUM PLOTS	DATE_ ESTAB	AREA	FOOD BANK	WAIT_ TIME	BUS_ LINE	NOTES	URL
--	--	--	--	--	--	--	--
--	--	--	--	--	2	Buslines 24 & 33	http://www.seattle.gov/neighborhoods/ppatch/locations/80.htm
--	--	--	--	--	--	--	--
--	2011	--	--	--	--	--	--
--	2011	--	--	--	1	Busline 54	http://www.seattle.gov/neighborhoods/ppatch/locations/85.htm
--	--	--	--	--	--	--	http://www.interimicda.org/garden.htm
--	--	--	--	--	--	--	http://www.metrokc.gov/dchs/csd/wsu-ce/Gardening/GardenResources/DemoElCentro.htm

APPENDIX UB-5:
RECOMMENDED SCHOOL GARDEN SURVEY ATTRIBUTES

Attribute Name	Information to be Described	Defined Entries
NAME	School Name	same format as the current GIS School shapefiles
ADDRESS	Street Address	same format as the current GIS School shapefiles
SIZE	Size of the garden	In acres
SCH_TYPE	Age Level of school	1 = Preschool, 2 = Elementary, 3 = Middle, 4= High, 5 = All Age School, 6 = Specialty
PUBLIC	Whether the school is a public facility	Yes = 1; No = 0
SCH_CONS	Notes whether the products of the garden are used/served at the school	Yes = 1; No = 0
CURRICU	Notes whether the garden is used in general curricula, as opposed to after school organizations	Yes = 1; No = 0
URL	Website for the school/garden	--
CONTACT	A contact person/phone number for the garden facility	--
THEME	Notes if there is a specialty theme for the garden	Refer to themes on the national school garden registry
DATE_EST	Date the garden was established	0 = No Data available; 4-digit year

APPENDIX UB-6
NOTES ABOUT SCHOOL GARDEN DATABASE

On the following pages is a preliminary database, generated by the studio team, of the school gardens in the five municipalities studied for this report. The above listed attributes were gathered when the information was available. The SCH_CONS, CURRICU, THEME, and DATE_EST attributes were not included in the database because there was no information at present regarding these. An additional line was added regarding the website source/organization that listed the school garden. These include:

- PSSG – Puget Sound School Garden Collective
- SGN – School Garden Network
- WSS – Washington State Map
- WSU – WSU Growing Green Community Garden List

The following database also contains enough information to be geo-coded into a GIS shapefile to spatially map these gardens.

APPENDIX UB-7:
SCHOOL GARDEN DATABASE

SITE_ID	NAME	ADDRESS	CITY	ZIP	SIZE
1	Bellevue High School	10416 Wolverine Way	Bellevue	98004	--
2	ECEAP Preschool	--	Everett	--	--
3	Olivia Park Elementary	108th St. SW	Everett	98204	25000*
4	Arlington Elementary	3002 South 72nd Street	Tacoma	98409	--
5	Bryant Montessori School	717 S. Grant Ave	Tacoma	98405	1980
6	De Long Elementary	4901 S. 14th St	Tacoma	98405	--
7	Edison Elementary	5830 S. Pine St.	Tacoma	98409	--
8	Fawcett Elementary	126 E. 60th St.	Tacoma	98404	--
9	Grant Elementary	1018 N. Prospect St.	Tacoma	98406	--
10	Jason Lee Middle School	602 N. Sprague Ave	Tacoma	98403	--
11	Jefferson	4302 N. 13th St.	Tacoma	98406	--
12	Lister Elementary	2106 E. 44th St.	Tacoma	98404	--
13	Lowell Elementary	810 N. 13th St.	Tacoma	98403	--
14	Manitou Park Elementary	4330 S. 66th St.	Tacoma	98409	--
15	McCarver Elementary	2111 S. J St.	Tacoma	98405	1000
16	Mount Tahoma High School	4634 S. 74th St.	Tacoma	98409	--
17	Roosevelt Elementary	3550 E. Roosevelt Ave	Tacoma	98404	--
18	Sheridan Elementary	5317 McKinley Ave.	Tacoma	98404	--
19	Stafford Elementary	1615 South 92nd Street	Tacoma	98444	--
20	Stanley Elementary	1712 S. 17th St.	Tacoma	98405	--
21	Stewart Middle School	5010 Pacific Ave.	Tacoma	98408	9600
22	Washington-Hoyt Elementary	3701 N. 26th St.	Tacoma	98407	--
23	Whitman Elementary	1120 S. 39th St.	Tacoma	98408	--

SCH_TYPE	PUBLIC	URL	CONTACT	SOURCE
4	1	http://www.bsd405.org/Default.aspx?alias=www.bsd405.org/bhs	Front Desk - 425.456.7000	WSS
--	--	--	--	WSU
2	1	http://schools.mukilteo.wednet.edu/op/	Front Desk - 425.356.1302	WSU
2	1	http://www0.tacoma.k12.wa.us/schools/websites/index.asp?SchoolCode=101	Maria Borgert, 253.571.3200	SGN
1/2/3	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Bryant.aspx	Wynn Brown, 253.571.2800	WSS/SGN/NGR
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/DeLong.aspx	Margaret Wilson, 253.571.5800	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Edison.aspx	Danielle Harrington - WSU	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Fawcett.aspx	253.571.4700	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Grant.aspx	253.571.5400	SGN
3	1	http://www.tacoma.k12.wa.us/Schools/ms/Pages/JasonLee.aspx	Front Desk - 253.571.7710	WSS
2	1	http://www.tacoma.k12.wa.us/sites/schools/jefferson/Pages/Default.aspx	253.571.4000	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Lister.aspx	Debra Snow, 253.571.2900	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Lowell.aspx	Sass Rasmussen, 253.571.7200	SGN
2	1	http://www.tacoma.k12.wa.us/sites/schools/manitoupark/Pages/Default.aspx	253.571.5300	SGN
2/3	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/McCarver.aspx	Julia Martin-Lombardi, 253.571.4900	NGR
4	1	http://www.tacoma.k12.wa.us/Schools/hs/Pages/MountTahoma.aspx	Front Desk - 253.571.3800	WSS
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Roosevelt.aspx	253.571.4400	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Sheridan.aspx	253.571.5900	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Stafford.aspx	Mr. Story, 253.571.4300	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Stanley.aspx	Laurie Root, 253.571.4500	SGN
3	1	http://www.tacoma.k12.wa.us/Schools/ms/Pages/Stewart.aspx	John Hoover and Kale Iverson, 253.571.4200, jhoover@tacoma.k12.wa.us	NGR
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Washington-Hoyt.aspx	Rosemary Ponnekanti, 253.571.5711	SGN
2	1	http://www.tacoma.k12.wa.us/Schools/es/Pages/Whitman.aspx	Ms. Rasmussen, 253.571.7272	SGN

APPENDIX UB-7 cont'd:
SCHOOL GARDEN DATABASE

SITE_ID	NAME	ADDRESS	CITY	ZIP	SIZE
24	Daniel Bagley Elementary School	7821 Stone Avenue North	Seattle	98103	--
25	Discovery Montessori School	2836 34th Avenue West	Seattle	98199	--
26	Fauntleroy Children's Center	9131 California Avenue Southwest	Seattle	98136	80
27	First Place	--	Seattle	--	--
28	Highpoint Elementary	6760 34th Ave SW	Seattle	98126	--
29	John Muir Elem	3301 S Horton St	Seattle	98144	--
30	LaurelHurst Elementary Garden	4530 46 Avenue NE	Seattle	98105	50
31	Martin Luther King Elementary	3201 E. Republican	Seattle	98112	600
32	Montlake School	2409 22nd Avenue East	Seattle	98112	--
33	Orca School Garden	3528 S. Ferdinand St.	Seattle	98118	12000
34	RoxHill elementary	9430 30th Ave SW	Seattle	98126	100
35	Sacajawea Elementary	9501 20th Avenue NE	Seattle	98115	200
36	Sanislo Elementary	1812 SW Myrtle St	Seattle	98106	400
37	Seattle Jewish Community School	12351 8th Avenue NE	Seattle	98125	--
38	The Islamic School of Seattle	720 25th Avenue	Seattle	98122	--
39	Villa Academy	5001 Northeast 50th Street	Seattle	98105	--
40	West Seattle Elem	6760 34 AV SW	Seattle	98126	--
41	White Center Heights Elementary	10015 6th Ave SW	Seattle	98146	--

SCH_TYPE	PUBLIC	URL	CONTACT	SOURCE
2	1	http://www.danielbagley.com/	Front Desk - 206.252.5110	WSS
6	0	http://www.discoverymontessorischool.org/	Front Desk - 206.282.3848	WSS/NGR
6	0	http://www.fauntleroychildrenscenter.org/index.cfm	Front Desk - 206.932.9590	NGR
6	0	http://www.firstplaceschool.org/	Front Desk - 206.323.6715	WSS
2	1	--	Acacia Larson - 206.252.9450	PSSG
2	1	http://www.seattleschools.org/schools/muir/	Front Desk - 206.252.7400	WSS
2	1	http://www.seattleschools.org/schools/laurelhurst/	Elise Hart - 206.252.5400	PSSG/WSS
2	1	--	Larry Grant - 206.329.1159 larrygrant1@yahoo.com	NGR
2	1	http://montlakeschool.org/CheriBloom.aspx	Cheri Bloom - cmblooms@comcast.net	PSSG
2/3	1	http://www.orcapta.org/	Jeff Freshley, 206.722.0049, jeff@freshleyhess.com	PSSG
2	1	http://www.seattleschools.org/schools/roxhill/index.htm	Front Desk - 206-252-9570	WSS
2/3	1	http://www.seattleschools.org/schools/sacajawea/	KateHohlbein, 206.252.5560, kahohlbein@seattleschools.com	PSSG
2	1	http://www.seattleschools.org/schools/sanislo/	Erin MacDougall - erin_macd@yahoo.com	PSSG
6	0	http://www.sjcs.net/	Front Desk - 206.525.9023	WSS
6	0	http://www.islamicschoolofseattle.com/	Front Desk - 206.329.5735	WSS
1/2/3	0	http://www.thevilla.org/	Front Desk - 206.524.8885	WSS
2	1	http://www.seattleschools.org/schools/wests	Front Desk - 206.252.9450	WSS
2	1	http://www.hsd401.org/ourschools/elementaryschools/whitecenter/	Front Desk - 206.631.5200	WSS

APPENDIX UB-8:
NOTES FOR UNIVERSITY GARDEN DATABASE

The universities, colleges, and school on the list were found through at least two of the following sites:

http://www.localcollegeexplorer.com/Washington.html
http://u101.com
http://www.seattleschools.com
http://www.seattle.com/government/university
http://www.hecb.wa.gov/links/colleges/collegesindex.asp

APPENDIX UB-9
References for University Garden Database

1. "Bellevue College becomes more sustainable," Eileen Cho, The Jibsheet, April 20, 2011, Accessed May 10, 2011, http://www.thejibsheet.com/?p=5782

2. "Trinity Lutheran to celebrate its new rooftop gardens on Tuesday," Ray Marcham, Everett KOMO, May 1, 2011, Accessed May 13, 2011, http://everett.komonews.com/news/community-spirit/trinity-lutheran-celebrate-its-new-rooftop-gardens-tuesday/638455

3. "Sustainability," Seattle Community Colleges, Accessed May 16, 2011, http://www.seattlecolleges.edu/green/curriculum/food.aspx

4. Davis, June 30, 2010, "Where the Farm Meets the City," Sustainability at Facility Management, Accessed May 12, 2011, http://sustainabilityatspu.blogspot.com/2010/06/where-farm-meets-city.html

5. "Campus Gardens," Facilities Services, Seattle University, Accessed May 10, 2011, http://www.seattleu.edu/facilities/inner.aspx?id=35748

6. "The Medicinal Herb Garden of the University of Washington-Department of Biology," University of Washington, Acccessed May 12, 2011 http://www.biology.washington.edu/mhg/

7. "UW Tower goes green with edible Patio Demonstration Garden," Nancy Wick, University Week, March 4, 2010, Accessed May 8, 2011, http://www.washington.edu/news/archive/uweek/56124

8. "Our Greater Community," The UW Farm, Accessed May 14, 2011, http://students.washington.edu/uwfarm/community

9. "PLU's Community Garden," Pacific Lutheran University, May 6, 2011, https://sites.google.com/a/plu.edu/community_garden/

10. "University of Puget Sound Garden," Grow Local, Tacoma-Pierce County, Accessed May1, 2011, http://www.growlocaltacoma.com/gardens/29/university-of-puget-sound-garden

11. "UW Tacoma Giving Garden," Grow Local, Tacoma-Pierce County, Accessed April 30, 2011, http://www.growlocaltacoma.com/gardens/142/uw-tacoma-giving-garden

APPENDIX UB-10
UNIVERSITY GARDEN DATABASE

SITE_ ID	NAME	COLLEGE ADDRESS
1	Bellevue Community College	3000 Landerholm Circle Southeast
2	City University	11900 NE First Street, Bellevue
3	Devry University	600 108th Ave. NE, Ste. 230
4	Everest College - Bremerton Campus	155 Washington Avenue, Suite 200
5	Olympic College/ Old Dominion	1600 Chester Avenue
6	Embry-Riddle Aeronautical University - Everett Campus	2333 Seaway Boulevard #200
7	Everest College - Everett Campus	906 SE Everett Mall Way, Suite 600
8	Everett Community College	2000 Tower Street
9	ITT Technical Institute	1615 75th Street Southwest
10	Seattle Bible College - Everett Campus	13000 21st Drive Southeast
11	Trinity Lutheran College	2802 Wetmore Avenue
12	Antioch University - Seattle Branch	2326 6th Avenue
13	Argosy University - Seattle Campus	2601 Elliott Avenue
14	Art Institute of Seattle	2323 Elliott Avenue
15	Bakke Graduate University	1013 8th Ave # 401
16	Cornish College of the Arts	1000 Lenora St
17	Cortiva Institute -Brian Utting School of Massage	425 Pontius Avenue North
18	Divers Institute of Technology	1341 N. Northlake Way
19	Everest College - Seattle Campus	2111 N. Northgate Way, Suite 218
20	Fred Hutchinson Cancer Research Center	1100 Fairview Avenue North
21	Golden Gate University	1424 4th Ave # 400
22	International Academy of Design & Technology	645 Andover Park West
23	Le Cordon Bleu Schools of North America	360 Corporate Drive North
24	Pima Medical Institute	9709 Third Avenue NE Suite 400
25	School of Visual Concepts	500 Aurora Ave North
26	Seattle Bible College - Seattle Campus	2363 Nw 80th St

CITY	ZIP	PUBLIC	TYPE	PROFIT	GARDEN	NOTES
Bellevue	98007	1	2	0	1	Greenhouse and Garden[1]
Bellevue	98005	0	3	0	0	
Bellevue	98004	0	3	1	0	
Bremerton	98337	1	2	1	0	
Bremerton	98337	1	2	0	0	
Everett	98203	0	3	1	0	
Everett	98208	1	2	1	0	
Everett	98201	1	2	0	0	
Everett	98203	0	3	1	0	
Everett	98208	0	3	0	0	
Everett	98201	1	3	0	1	rooftop garden - parking garage[2]
Seattle	98121	0	3	0	0	
Seattle	98121	0	3	1	0	
Seattle	98121	0	3	1	0	
Seattle	98104	0	3	0	0	
Seattle	98121	0	3	0	0	
Seattle	98109	0	1	1	0	
Seattle	98103	0	1	1	0	
Seattle	98133	1	2	1	0	
Seattle	98109	0	3	0	0	
Seattle	98101	0	3	0	0	
Seattle	98188	0	3	1	0	
Seattle	98108	0	1	1	0	
Seattle	98115	0	2	1	0	
Seattle	98109	1	2	0	0	
Seattle	98117	0	3	0	0	

APPENDIX UB-10 cont'd
UNIVERSITY GARDEN DATABASE

SITE_ ID	NAME	COLLEGE ADDRESS
27	Seattle Community College - Central Campus	1701 Broadway, Seattle
28	Seattle Community College - North Campus	9600 College Way N
29	Seattle Community College - South Campus	6000 16th Avenue Southwest
30	Seattle Institute of Oriental Medicine	916 Northeast 65th Street
31	Seattle Pacific University	3307 3rd Avenue West
32	The Seattle School of Theology and Psychology	2501 Elliott Avenue
33	Seattle University	901 12th Avenue
34	University of Washington-Seattle Campus	1410 NE Campus Pkwy
35	Bates Technical College	1101 I Saint Trans
36	Everest College - Tacoma Campus	2156 Pacific Ave
37	Faith Evangelical Lutheran Seminary	3504 N Pearl St
38	Pacific Lutheran University	12180, Park Avenue
39	Tacoma Community College	6501 South 19th Street
40	University of Puget Sound	1500 North Warner Street
41	University of Washington - Tacoma Campus	1900 Commerce Street

CITY	ZIP	PUBLIC	TYPE	PROFIT	GARDEN	NOTES
Seattle	98122	1	2	0	1	Greenhouse
Seattle	98103	1	2	0	0	P-Patch proposed for campus
Seattle	98106	1	2	0	0	
Seattle	98115	0	3	1	0	
Seattle	98119	0	3	0	1	P-Patch style community garden[4]
Seattle	98121	0	3	0	0	
Seattle	98104	0	3	0	1	P-Patch and Fruit Garden[5]
Seattle	98195	1	3	0	1	Medicinal Garden[6], Demo Garden[7], and UW Farm[8]
Tacoma	98405	1	2	0	0	
Tacoma	98402	1	2	1	0	
Tacoma	98407	0	3	0	0	
Tacoma	98447	0	3	0	1	Garden[9]
Tacoma	98466	1	2	0	0	
Tacoma	98416	0	3	0	1	Garden at N 17th St & Alder[10]
Tacoma	98402	1	3	0	1	All Food is donated to food bank, about 400SF. At 1700 block of S. Court D[11]

APPENDIX UB-11
NOTES FOR PRISON DATABASE

These prison locations were found through Google searches.

APPENDIX UB-12
PRISON GARDEN DATABASE

ID	NAME	ADDRESS	CITY	ZIP
1	Snohomish County Main Jail	3025 Oakes Ave	Everett	98201
2	King County Jail	500 5th Ave	Seattle	98104
3	King County Juvenile Detention Center	122 East Alder St	Seattle	98122
4	Juvenile Rehabilitation	2121 South State Street	Tacoma	98405
5	Pierce County New Jail	Nollmeyer and Yakima	Tacoma	98405
6	Pierce County Main Jail	910 Tacoma Ave S	Tacoma	98405
7	Remann Hall Juvenile Detention	5501 6th Avenue	Tacoma	98406

APPENDIX UB-13:
NOTES FOR HOSPITAL GARDEN DATABASE

The sites on the list were determined through Google searches and the Hospital shapefile for the City of Seattle:

"Hospitals," City of Seattle GIS Data, Washington State Geospatial Data Archive, Accessed April 25, 2011 https://wagda.lib.washington.edu/data/geography/wa_cities/seattle/index.html

Information regarding the signing of the Healthy Food in Healthcare Pledge was from: http://www.noharm.org/us_canada/issues/food/signers.php

APPENDIX UB-14
HOSPITAL GARDEN DATABASE

SITE_ID	FACILITY	ADDRESS
1	Group Health	11511 NE 10th St
2	Overlake Hospital and Medical Center	1035 116th Ave NE
3	Virginia Mason Hospital	222 112th Ave NE
4	Harrison Medical Center	2520 Cherry Ave
5	VA Bremerton Clinic	925 Adela Ave
6	Group Health Medical Center	2930 Maple St
7	Providence Regional Medical Center	1321 Colby Ave
8	Ballard Community Hospital (Swedish)	2309 NW Market St
9	Children's Hospital and Regional Medical Center	4800 Sand Point Way NE
10	Group Health	201 16th Ave E
11	Harborview Hospital and Campus	325 9thAve
12	Kindred Hospital	10560 5th Ave NE
13	Northwest Hospital	1550 N 115th St
14	Pacific Medical Center	1200 12th Ave S
15	Providence Medical Center	500 17th Ave
16	Swedish Medical Center	747 Summit Ave
17	Univerisity of Washington Medical Center	1959 NE Pacific St
18	Vetern's Administration - Seattle	4435 Beacon Ave S
19	Virginia Mason Hospital	925 Seneca St
20	Washington Center/KCDASA	1421 Minor Ave
21	Allenmore Hospital	1901 South Union Avenue
22	Fairfax Hospital	1305 Tacoma Ave S
23	Group Health	209 South K Street
24	Mary Bridge's Childrens Hospital	315 South K Street
25	Mom & Womens Recovery Center	3629 S D St
26	Multicare Clinics	7041 Pacific Ave
27	St. Joseph Medical Center	1717 S J St
28	Tacoma General Hospital	315 Martin Luther King Jr Way

FACZIP	CITY	SOURCE	GARDEN	HEALTHY FOODS IN HEALTHCARE PLEDGE[1]
	Bellevue	Internet	0	0
98004	Bellevue	Internet	0	1
	Bellevue	Internet	0	0
98310	Bremerton	Internet	0	0
98311	Bremerton	Internet	0	0
	Everett	Internet	0	0
	Everett	Internet	0	0
98107	Seattle	From GIS data	0	1
98105	Seattle	From GIS data	0	1
98112	Seattle	From GIS data	0	0
98104	Seattle	From GIS data	0	0
98125	Seattle	From GIS data	0	0
98133	Seattle	From GIS data	0	1
98144	Seattle	From GIS data	0	0
98122	Seattle	From GIS data	0	0
98104	Seattle	From GIS data	0	1
98105	Seattle	From GIS data	1	1
98108	Seattle	From GIS data	0	0
98101	Seattle	From GIS data	0	0
98101	Seattle	From GIS data	0	1
98405	Tacoma	Internet	0	1
98402	Tacoma	Internet	0	0
98409	Tacoma	Internet	0	0
98405	Tacoma	Internet	0	1
98418	Tacoma	Internet	0	0
98408	Tacoma	Internet	0	0
98405	Tacoma	Internet	0	0
98405	Tacoma	Internet	0	1

APPENDIX UB-15
METHODOLOGY DETAILS AND NOTES

Step 3a Details

General Notes on Standardization

Before the scores can be weighted and combined into a final rating, they must be standardized to be comparable, as the scores are measured on different scales. For example, Criterion 1 is binary and therefore receives a score of 1 or 0 while Criterion 3 could receive a score of any integer from one to ten. If these are not standardized prior to being combined into a final score, Criterion 3 will almost always skew the results. The general formula below can be used in all cases to standardize scores and/or raw measures (when appropriate) of the criteria in Step 3a:

$$\frac{\text{Score} - \text{Min Score}}{\text{Max Score} - \text{Min Score}} = \text{Standardized Score}$$

Private Vacant Lands Details

This type of land, utilized through purchase, lease, or donation, uses all of the criteria possible for this step. Using precedent of Growing Green, the minimum size required for a community garden is approximately 2,000 square feet. Therefore, a site under 2,000 square feet in size is given a score of 0 and above 2,000 SF is scored with a value of 1. The raw measure of size can also be used to determine what scale of intervention would be possible on the site as well as to later sorting and analyzing of the potential sites. Therefore, each site would be given two attributes as follows:

Is a garden possible?
0 = No garden possible (<2,000 SF)
1 = Garden possible (>2,000 SF)

What size garden is possible?
C = Small garden possible (2,000 SF – 5,000 SF)
D = Moderate garden possible (5,000 SF – 10,000 SF)
E = Large Scale Garden (10,000 SF – 20,000 SF)
F = Urban Farm (>20,000 SF)

The categories above can be used for further analysis and are generalized into easily understandable measures.

For Criterion 4, the values are calculated per SF of land using tax values from the Assessors department for a given jurisdiction. No overall rating can be given to this criterion since land values differ between cities, therefore, the values should be quantified, for each separate municipality's analysis, into nine equal interval categories with the cheapest land receiving the highest value (9) and the most expensive land rated the lowest (1).

Weighting
For this track of analysis, Criteria 1 and 4 receive higher weighting for the final rated score, because Criterion 1 is a basic factor for the suitability of a garden and Criterion 4 indicates land value. This is

important for private land where a high value of land is a discouraging factor to the development of a garden. This will by nature weight downtown lands lower, however, it is in these scenarios that other spatial applications, such as public or institutional land, might be more well-suited for a garden. An appropriate weighting scheme for private vacant lands would be:

Criterion 1 – 40%
Criterion 2 – 15%
Criterion 3 – 15%
Criterion 4 – 30%

Public Vacant Land Details

This analysis track would use similar criteria as for private lands, with the main difference constituting the weighting between the four criteria. This is due to the fact that the land value is not as critical as the land, defined by its analysis track, is already owned by a public entity. Therefore, while the value is still important because it could denote earlier redevelopment of the parcel for a higher and better use, this specific criteria receives a lower weight in this track. Therefore the weighting for public vacant lands is as follows:

Criterion 1 – 40%
Criterion 2 – 25%
Criterion 3 – 25%
Criterion 4 – 10%

Public Park Land Details

This analysis also builds on the previous track with minor changes. First, the size of undeveloped area on the site is rated differently. This is due to the fact that by definition, a park is generally undeveloped and intended to stay as such. This open space could be dedicated to sports fields or other recreation activities or multi-use activities. Users of this space could oppose its conversion to a garden. Therefore, while a park size might be above the minimum garden size of 2000SF established for other tracks, not all of that land could or should be devoted to a garden. Therefore, the minimum size is marked up by 33% percent (33percent of the park can be converted to garden) to allow for the maintenance of open dedicated park space on the site. This changes the rating system as follows:

Is a garden possible?
0 = No garden possible (<6,000 SF)
1 = Garden possible (6,000 SF – 15,000 SF)

What size garden is possible?
C = Small garden possible (6,000 SF – 15,000 SF)
D = Moderate garden possible (15,000 SF – 30,000 SF)
E = Large Scale Garden (30,000 SF – 60,000 SF)
F = Urban Farm (>60,000 SF)

This analysis is altered from that of Growing Green, which uses a visual analysis to determine what area within the park is “unused”. The technique here is meant to be less work intensive and does not attempt to determine what is “unused” for all parks due to difficulties of measuring this. Also, since the

rating system does not rule out parks under the minimum size, if other factors seem promising, a site could still be included visually analysis in Step 4.

In regards to Criterion 4, since parkland is already dedicated to the purpose of open space, land value is no longer an issue as a higher and better use is not possible. Therefore, the weighting of the first three criteria are:

Criterion 1 – 40%
Criterion 2 – 30%
Criterion 3 – 30%

Public Land (developed)
This is the track applied to publicly owned properties that already contain some form of development. Therefore, to calculate a measure for Criterion 1, the building footprint on the site has to be subtracted from the site area. The areas can then be rated similarly to those of other tracks. Since the site is developed, it is more likely that an urban agriculture intervention could be much smaller. Therefore, the minimum size requirement is reduced as follows:

Is a garden possible?
0 = No garden possible (<1,000 SF)
1 = Micro-Garden possible (1,000 SF – 2,000 SF)
2 = Optimal garden possible (>2,000SF)

What size garden is possible?
B = Micro public Garden (500 SF – 2,000 SF)
C = Small public garden (2,000 SF – 5,000 SF)
D = Moderate public garden (5,000 SF – 10,000 SF)
E = Large public garden (10,000 SF – 20,000 SF)
F = Urban Farm (>20,000 SF)

In regards to Criterion 4, since the land has already been developed and there is no potential for redevelopment, land value does not have to be considered. Therefore, the weighting of the first three criteria are:

Criterion 1 – 40%
Criterion 2 – 30%
Criterion 3 – 30%

Public Land Right of Way
The use of the first criterion for this track is generally only used to categorize the possible scales of intervention since even the smallest area of right of ways could be used through a private or neighborhood level implementation. Therefore, categories would be created as follows:

A = Personal Garden (0 SF – 500 SF)
B = Micro public Garden (500 SF – 2,000 SF)
C = Small public garden (2,000 SF – 5,000 SF)

D = Moderate public garden (5,000 SF – 10,000 SF)
E = Large public garden (10,000 SF – 20,000 SF)
F = Urban Farm (>20,000 SF)

However, if the analysis was to be tailored to look for community garden interventions, a cut off point similar to that of the Vacant Public Lands track as follows:

0 = No garden possible (<2,000 SF)
1 = Garden possible (>2,000 SF)

The sites that fall in categories A and B have built in consumer bases nearby as they are at a scale that would be privately managed by an individual or community. Therefore, only sites in categories C through F would need further analysis using Criteria 2 and 3. For these categories the following weighting would be used.

Criterion 1 – 40%
Criterion 2 – 30%
Criterion 3 – 30%

School Gardens

School gardens, similar to right-of-ways, have many scales at which a food production garden can be implemented. Furthermore, as with developed public lands, there can be a smaller cut-off point at which a micro-garden is possible. While the garden would have less flexibility and yield, it would have great demonstration potential. Therefore, the application of Criterion 1 for this track is similar to that of the public developed land as follows:

Is a garden possible?
0 = No garden possible (<1,000 SF)
1 = Micro-Garden possible (1,000 SF – 2,000 SF)
2 = Optimal garden possible (>2,000SF)

What size garden is possible?
B = Micro-Garden (500 SF – 2,000 SF)
C = Small public garden (2,000 SF – 5,000 SF)
D = Moderate public garden (5,000 SF – 10,000 SF)
E = Large public garden (10,000 SF – 20,000 SF)
F = Urban Farm (>20,000 SF)

Schools have a built in customer base as the school children, faculty, and staff would be the primary users of the garden. Therefore, the weighting considers the results of criterion 2 and 3 less as follows:

Criterion 1 – 70%
Criterion 2 – 15%
Criterion 3 – 15%

University Gardens

School gardens, similar to right-of-ways, have many scales at which a food production garden can be implemented. Therefore, the application of Criterion 1 for this track is similar to that of the right-of-ways where categorization occurs. The categories are similar to above, but combined for simplicity:

Is a garden possible?

0 = No garden possible (<1,000 SF)
1 = Micro-Garden possible (1,000 SF – 2,000 SF)
2 = Optimal garden possible (>2,000SF)

What size garden is possible?

B = Micro public Garden (500 SF – 2,000 SF)
C = Small public garden (2,000 SF – 5,000 SF)
D = Moderate public garden (5,000 SF – 10,000 SF)
E = Large public garden (10,000 SF – 20,000 SF)
F = Urban Farm (>20,000 SF)

Universities, similar to schools, also have a built in customer base with the students, faculty, and staff as the primary users of the garden. There is also the possibility of working with community members to help maintain the gardens in the summer. Therefore, this analysis track reduces the weighting of the results of Criterion 2 and 3. However, as a university can also serve as a community leader and has greater possibilities for larger scale interventions, the weighting differs from schools as follows:

Criterion 1 – 50%
Criterion 2 – 25%
Criterion 3 – 25%

Step 4 Details

Tree Coverage

A similar ranking system is used as that in the precedents of Growing Green and Diggable Cities. This criterion uses some subjective analysis in comparing the site tree coverage; Growing Green provides guidance for determining this.

Pervious and Impervious Open Space

Visual analyses or more detailed size calculations are used in this step to estimate the size of unused, full sun, open space that is both pervious and impervious. There are three substeps within this analysis.

1. The first involves the determination of what portions of the site have full sun exposure. This differs from the tree coverage calculation in that it concerns mostly built features instead of natural features. Therefore, using the building siting and height information, sun angles and shaded areas can be determined. These areas are preliminarily discarded from the analysis. However, as mentioned above, if necessary, a more creative solution for utilizing the space could be found. For vacant parcels or parks, this analysis could involve buildings from adjacent parcels.

2. Determine if the area is currently in use. This would mean excluding areas currently dedicated to sports fields, playground, and other recreational areas. This could require more detailed investigation as the use of the area might not be apparent to a person not affiliated with the property and its daily use
3. Determine whether the open space is made of pervious or impervious materials. This splits the already determined full sun, unused open space between Criteria 2 and 3.

Access

It is the goal of this criterion to analyze the ease with which the site or open space within the site, is conveniently accessed by the public. This is a subjective judgment made by the person performing that analysis.

NOTES

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5. Hodgson, Campbell and Bailkey, 16.
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7. "Mission and History," City Slicker Farms, accessed May 14, 2001, http://www.cityslickerfarms.org mission-and-history.
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10. "Alemany Farm Claims to Reduce San Francisco's Crime By Growing Organic Food," Huffington Post, July 29, 2010, accessed May 15, 2011, http://www.huffingtonpost.com/2010/07/29 alemany-farm-reducing-san_n_638053.html.
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12. Holland Barrs Planning Group and Lees and Associates, "Southeast False Creek Urban Agriculture Strategy," City of Vancouver, November 2002.
13. Reimer, Susan, "Baltimore City Hall garden plot to be planted in veggies. Crops will help to feed the poor at Our Daily Bread," Baltimore Sun, April 2, 2009. Accessed May 14, 2011.
14. Reimer, Susan, "More greens for Baltimore City Hall vegetable garden," Baltimore Sun, March 11, 2010. Accessed May 14, 2011, http://articles.baltimoresun.com/2010-03-11/news/bal-md garden11mar11_1_chard-greens-year-s-garden.
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