



## ***BEST PRACTICES IN URBAN AGRICULTURE***

***A Background Report prepared for  
the City of Kamloops  
to support development of a  
Urban Agricultural Strategy***

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**1.1 Context**

In the spring of 2006, the Kamloops Food Policy Council, in partnership with the City of Kamloops and the Interior Health Authority, developed a Food Action Plan for the Kamloops area. The Plan, stemming from extensive consultation with local food producers and retailers, service providers, and government officials, provides action items for a variety of local stakeholders, including:

- City of Kamloops
- School District No. 73
- Interior Health Authority
- food service providers

The many recommendations of the Food Action Plan included a focus on Urban Agriculture and advancing opportunities for local food production. The urban agricultural focus is seen as being supportive of healthy, active lifestyles and in September 2006, a project to research Best Practices for Urban Agriculture was funded through an ActNow grant and a Community Food Action Initiative grant issued to the Kamloops Food Policy Council. The ActNow grant was directed through the Community Action for Health Fund – Thompson Region, and addresses the ActNow targets of: healthy eating; physical activity; and policy and environmental intervention.

The goals of the funded project are to:

- research Best Practices for Urban Agriculture from other communities.
- highlight Best Practices for Urban Agriculture relevant to Kamloops.
- provide a strategy to implement recommended Best Practices.

Best Practices for Urban Agriculture can involve many partners, however, the focus of this report is on municipal governments and activities associated with policy development, planning, development approvals and management of municipal land and infrastructure. Municipal governments are in a unique position to plan for and support development projects that incorporate local urban agriculture and to integrate direction for urban agriculture into a broad policy framework. Kamloops has an opportunity to

proactively plan for urban agriculture to realize some of the many economic, social, environmental, health, and social benefits attributed to urban agriculture.

## 1.2 **Definitions**

Urban agriculture encompasses a broad range of activities. The nature of these activities will vary according to that of the urban environment in which they are practiced. Each community, therefore, will develop its own interpretation of urban agriculture.

The City of Kamloops zoning bylaw defines “agricultural use” as, “A use provided for the growing, rearing, producing, harvesting, storage, processing and sale of agricultural products. Specifically excluded is the retail sale of garden or nursery stock and abattoirs”.

Standard definitions of urban agriculture are consistent with the zoning bylaw definition, with the added proviso that urban agriculture shall coexist compatibly with adjacent land uses by minimizing noise, chemical inputs, and other potentially disruptive byproducts of agricultural practices.

The following list of activities associated with urban agriculture is found on the website of City Farmer, Canada’s Office of Urban Agriculture (<http://www.cityfarmer.org>). Some of these terms are used interchangeably with urban agriculture. Urban agriculture therefore includes, but is not limited to these activities insofar as they take place within or surrounding urban boundaries:

- Allotment gardens
- Backyard gardens
- Beehives
- Berry patches
- Community gardens
- Community Supported Agriculture (CSA)
- Container gardens
- Edible landscapes (landscaping that incorporates food-producing plants)
- Greenbelt agriculture
- Greenhouse agriculture
- Hedgerows consisting of edible plants
- Herb gardens (culinary and medical)
- Kitchen gardens

- MetroFarms
- Micro-livestock
- Orchards
- Prison farms
- Rooftop gardens
- Schoolyard gardens
- Trellis/fence farms
- Vegetable gardens
- Vertical agriculture
- Vineyards

### 1.3 **Benefits of Urban Agriculture**

Urban agriculture has been found to benefit communities in a number of ways. Specifically, it is seen as a critical component of sustainable community development. In his 2006 book, Growing Better Cities: Urban Agriculture for Sustainable Development, Luc Mougeot urges municipalities to examine what urban agriculture can do for cities, rather than what cities can do for urban agriculture. Examples of the benefits of urban agriculture include:



#### ***Economic Benefits***

- utilization of vegetative wastes as compost by urban farms and gardens reduces waste volume directed towards landfills by as much as 40% (UBC Design Centre for Sustainability, 2005).
- public land dedicated to urban agriculture is maintained by farmers and gardeners, reducing maintenance costs for the City.
- reduced costs of transporting food.
- increased local employment, e.g., landscaping, design, green roof construction, urban farming, and retailing.
- capitalization of under-used resources (e.g., rooftops, roadsides, vacant land right-of-ways).
- in addition to providing space for food production, rooftop gardens increase roof durability and property values, reduce heating/cooling costs by up to 20% (Hobbs, 2002). Roof lifespan can be lengthened with vegetative cover,

which protects the roof membrane from UV rays and temperature fluctuations.

- opportunities for treating industrial wastes and wastewater through re-use in agriculture.
- Community Supported Agriculture (CSA) allows for broad participation in commercial agricultural ventures.
- multiplier effects, i.e., attracting new businesses such as agricultural equipment industries, processing facilities, restaurants, shops, and markets.
- showcasing innovative stormwater management and water conservation techniques.
- for-market urban farming contributes to neighborhood revitalization.
- the proceedings from the World Urban Forum, held this year in Vancouver, include the statistic that urban agriculture produces 15-20 percent of the world's food.

According to research conducted by UBC's Design Centre for Sustainability (2005), "Food is an untapped economic opportunity – it is the fastest growing resource-based sector in BC, employing more people than logging and more than mining and fishing combined, even when labor shortages are the biggest impediment to growth." This BC research states that the average BC household spends \$6,800 on food per year, and that money spent on locally produced food generates nearly twice as much local income as money spent on imported food. It has been estimated that a growing space of only 750 square metres could generate \$425,000 annually and provide employment for up to 8 people (Hobbs, 2002). Viljoen and Bohn (2005) of the University of Brighton's School of Architecture and Design demonstrate how full-cost accounting (which considers transport savings and environmental benefits) makes a strong case for the fiscal soundness of urban agriculture.



### ***Environmental Benefits***

- the City's ecological footprint (i.e., the area required to produce the food and energy consumed by the City and to manage the waste it produces) can be reduced by integrating urban agriculture into a multifunctional land use strategy and sustainable transport strategies.
- reduced urban heat island effect.

- rooftop gardens retain up to 100% of precipitation, which reduces stormwater runoff and minimizes irrigation requirements (Hobbs, 2002). Rooftop gardens also reduce glare, noise, and wind, absorb CO<sub>2</sub> emissions, increase bio-diversity, and can use sustainable technologies.
- reduced methane emission from compostable waste in landfills (UBC Design Centre for Sustainability, 2005).
- reduced transportation requirements, use of non-renewable energy, and greenhouse gas emissions, and improved air quality.
- organic agricultural and landscaping practices minimize introduction of harmful chemicals into city soil and water.

### ***Health and Social Benefits***

- increased opportunity to access healthy food for low-income people.
- heightened sense of community. Increased social opportunities in the form of community gardening, mentoring programs, shopping at farmer's markets, and harvest festivals. Surveillance and possible crime prevention associated with community gardening.
- improved health from eating locally grown produce.
- assistance in achieving UN Millennium Development Goals (Mendes, 2006).
- increased physical activity and recreational opportunities – in a 2001 study gardening was the fastest growing recreational activity among Canadian urban residents (Wekerle, 2001).
- food security in case of economic (i.e., import-related), or natural disaster.
- urban farms and gardens meet public open space requirements and preserve the community's natural heritage.
- rooftops are typically underutilized; they can, therefore, provide accessible land tenure for urban farmers/gardeners.
- urban farmers and gardeners can assist in protecting public spaces from unofficial uses and informal re-zoning.





## **1.4 Report Structure**

This report is organized to provide an overview of Canadian Best Practices in Urban Agriculture (Section 2), a summary of Best Practices (Section 3), and a set of recommendations for the City of Kamloops (Section 4). Appendices provide supporting documentation.

## 2.1 Examples from Vancouver

In 2003 Vancouver City Council approved a motion supporting the development of a “just and sustainable food system” for the City. Mendes (2004), defined a just and sustainable food system as “one in which food production, processing, distribution, consumption and recycling are integrated to enhance the environmental, economic, social and nutritional health of a particular place”. According to a 2002 Ipsos-Reid poll, 42% of Vancouverites grow some of their own food (Mendes, 2006).



The City’s commitment to food policy included approval of a Food Action Plan (<http://www.city.vancouver.bc.ca/ctyclerk/cclerk/20031209/rr1.htm>), which consists of two main strategies:

- integrating food into a broader sustainable urban development agenda; and
- promoting multi-actor involvement and collaboration in food security initiatives.

Key activities promoted in the Action Plan include:

- urban agriculture on under-utilized city land and in private developments;
- rooftop gardens;
- community gardens;
- farmers markets; and
- a food processing and distribution facility (Mendes, 2004).

Enhancement and support of urban agriculture is one component of Vancouver’s food-related policies. The City is also developing and implementing policies in partnership with community organizations and a citizen advisory group. Partnerships and collaborations among municipal departments within local government itself, along with the integration of urban agriculture into Vancouver’s broader sustainability policy, are also critical to the success of urban agriculture and food policy.

In 2002 the City created an Urban Agriculture Strategy for the development of Southeast False Creek. The Strategy and the Official Development Plan (ODP) for this community include grocery stores, on-site composting, a school garden, demonstration gardens, roof gardens, a farmer's market, community gardens, hydroponic greenhouses, market gardens, shared food processing facilities, community kitchens, soil remediation, and edible landscaping. Various City departments and Boards are in the process of developing a similar strategy for the whole of Vancouver. This process has included the following elements:

- assessing opportunities for new community gardens.
- introducing edible landscaping into private and public space
- including food policy in the proposed City-Wide Green Building Strategy.
- examining opportunities and capacity of under-utilized city-owned properties (other than Park space) to support food growth and community development.
- collaborating with the Park Board to increase the number of fruit trees planted on park property and review Park Board Community Garden policy.
- examining potential of planting fruit trees on Vancouver School Board property.
- hiring graduate student interns to complete reports detailing potential strategies for edible landscapes and urban agriculture.
- involving food policy staff in design strategies for new developments and rezonings to include urban agriculture (e.g., Southeast False Creek, East Fraserlands, and Langara College).
- creating and distributing edible landscape guidelines for developers (see *Appendix A* attached).

Vancouver has incorporated urban agriculture into several other policy and planning documents and bylaws:

- The Livable Region Strategic Plan (LRSP), Greater Vancouver's regional growth strategy, was adopted by the Board with support of all municipalities in 1996. The LRSP includes four fundamental strategies, two of which directly support the expansion and promotion of urban agriculture.
- The City's Policy Statement for the development of the East Fraserlands recognizes that "opportunities for edible landscaping should be pursued, on

both public and private lands, where appropriate.” (East Fraserlands Policy Statement, 2004).

- In 2005 City Council approved an amendment to the Health Bylaw to allow for hobby beekeeping and adopted guidelines describing good management practices for beekeeping in residential areas.
- In 2004, the Park Board passed a motion to examine opportunities for planting fruit trees in public spaces such as streets, community gardens, and parks. Potential strategies included: a trial period for selected fruit trees, a community orchard operated by a stewardship group, and educational workshops on fruit production (Mendes, 2004).
- The CityPlan Community Visions program provides directions for Vancouver’s neighbourhood planning. Most of the neighbourhoods that have completed this program have promoted community gardens as part of the greening of parks, streets, and public spaces (CityPlan, 2006).

Other urban agriculture activities in which the City of Vancouver has been involved include:

- creating a food producing and education garden near the City Hall Childcare Centre.
- 2006 Fruit Tree Giveaway.
- Council approval of a recommendation to apply an exception to the rezoning and removal of 1835 West 75th Avenue from the Agricultural Land Reserve in exchange for 100% of the Community Amenity Contribution being utilized for urban agriculture amenities across the city.
- partnering with residents to maintain edible landscapes by allowing people to plant and maintain traffic circles, boulevards, and neighbourhood greenways, e.g. Green Streets and Neighbourhood Greenways programs.
- installing green roofs on Vancouver Conference Centre and Vancouver Public Library.

Community-based and private urban agriculture initiatives in Vancouver include:

- garden plots in new developments:  
<http://www.freesialiving.com/terrace.html>
- the Fruit Tree Project connects people who have excess fruit on their backyard fruit trees with those who have the time and energy to harvest it. Most of the harvested fruit is donated to community organizations and individuals in need.
- the Renfrew Collingwood Food Security Institute is involved in: growing food plants on private land for donation to the food bank; a community roof top garden, and; planning to plant fruit trees in a neighbourhood park.
- the City Farmer Compost Demonstration Garden provides education in natural yard care and gardening, while showcasing an edible landscape.
- Mole Hill is an urban redevelopment project with 70 community garden plots. Parking and building access were reorganized so that edible and native plants could be planted in the lane behind the residences.
- gardens developing under the Skytrain rail in partnership with Translink.
- community garden plots along Arbutus Corridor, paralleling the railway tracks that stretch from False Creek to the Fraser River.



## 2.2 **Other Communities in BC**

The following items highlight actions and policies for urban agriculture from a variety of BC communities.

- Abbotsford maintains a vegetated buffer between agricultural areas and urban developments.
- Burnaby has implemented several strategies to sustain and expand urban agriculture ([www.burnaby.ca](http://www.burnaby.ca)):
  - ◆ community garden plots on 5 ha (12.5 acres) of ALR land within an agricultural and industrial area for over 25 years. Operated through partnership between Parks Department and a non-profit group
  - ◆ green roofs on buildings at SFU, GVRD, and BCIT

- ◆ maintains roughly 70 acres of urban farmland, and produces 10% of all Fraser Valley vegetables (FORC, 2005).
- Central Okanagan Regional District adopted an Agricultural Area Plan (2005) and has hired municipal staff to implement the plan and assist with economic development initiatives.
- The Capital Regional District is partnering with the Ministry of Agriculture and Lands (MAL) to conduct an agricultural land use inventory.
- The Township of Langley is partnering with MAL to create an edge-planning bylaw for compatible land use along the ALR boundary.
- New Westminster supports urban agriculture through its OCP. In 2005, Council approved a feasibility study for community gardens and an inventory of suitable sites.  
([www.city.newwestminster.bc.ca/cityhall/planning/10official%20community%20plan/pdf%201/2.04.pdf](http://www.city.newwestminster.bc.ca/cityhall/planning/10official%20community%20plan/pdf%201/2.04.pdf)).
- North Cowichan’s Agricultural Strategy is being revised for adoption as an amendment to their community plan.
- North Vancouver promotes urban agriculture in the following ways:
  - ◆ OCP cites the importance of community gardens, including a mandate to ensure community education, public access, and organic gardening methods ([www.cnv.org//server.aspx?c=2&i=107](http://www.cnv.org//server.aspx?c=2&i=107))
  - ◆ City has drafted Community Garden Location Criteria which identify high density areas as priorities
  - ◆ City employs a planner who focuses on urban agriculture and partners with non-profit groups to operate gardens
  - ◆ City partnered with local health authority to create Edible Garden Project which increases local food production and processing (<http://www.ediblegardenproject.com/>)
- Richmond’s urban agriculture initiatives include the following:
  - ◆ OCP statement promoting community gardens and farming heritage ([www.richmond.ca/services/planning/ocp/sched1.htm](http://www.richmond.ca/services/planning/ocp/sched1.htm), [www.richmond.ca/parksrec/ptc/parks/community.htm](http://www.richmond.ca/parksrec/ptc/parks/community.htm))
  - ◆ “Adopt-A-Garden” program enables citizens to develop gardens on vacant city land. The City provides garden space, training for volunteers, and other assistance
- The Township of Spallumcheen’s Agriculture Area Plan promotes long-term sustainable agriculture.



- White Rock’s municipal works yard has a green roof.

## **2.3 Other Areas Within Canada**

### **2.3.1 Montreal**

Montreal has used community gardening zoning since 1985 and has a designated Permanent Agricultural Zone (PAZ) which includes approximately 4% of the city’s land. Uses of this land include an experimental farm run by McGill University, an agricultural park, an ecomuseum, and an arboretum. The City also zones new community gardens as parkland in order to protect them. Montreal has over one hundred gardens with over 6500 plots; two-thirds of these are now zoned as parkland.

Montreal’s Master Plan supports urban agriculture by:

- recognizing community gardens as facilities that “contribute to neighbourhood community life and cultural development, reinforce residents’ sense of belonging and encourage participation in sports, recreation and outdoor living”;
- further development of the agricultural park;
- ensuring that new home development does not conflict with agriculture near the PAZ;
- studying ways to enhance the tourist appeal of the agricultural area; and,
- maintaining the PAZ boundaries.

### **2.3.2 Ottawa**

Ottawa’s *Community Garden Program Action Plan*, adopted by City Council in 2004, includes:

- modifying the zoning code to permit community gardens in all zones (except environmentally sensitive zones).
- identifying parcels of vacant land to create community gardens.
- providing free water access and covering liability insurance for community gardens.

Ottawa is also surrounded by a 20,000 hectare green belt.

### 2.3.3 Toronto

Toronto supports urban agriculture in the following ways:

- In 2000 City Council adopted a report stating that nutritious and affordable food is essential to food security in all neighbourhoods.
- Food Charter (adopted 2001) recognizes public health principle of “environmental support”, i.e., environments should be planned to enhance the convenience of healthful food choices, and to decrease the accessibility of unhealthy choices (Roberts, 2001).
- density bonuses used as incentive for a community garden and a grocery store for seniors.
- City Plan encourages the creation of community gardens.
- Parks and Recreation department partners with a non-profit to operate an organic food production and environmental education initiative (<http://www.thestop.org/agriculture.php>).
- hosting Regional Green Building Festival for second year in fall 2006 (<http://www.greenbuildingfest.com/>).

### 2.3.4 Waterloo

Waterloo has over 25 community gardens, consisting of 679 plots. 38% of Waterloo residents grow some of their own food, and 70% stated that the ability to do so was important to them. Kitchener/Waterloo has at least six green roofs and/or rooftop gardens.

## 2.4 Outside Canada

Urban agriculture is increasingly prevalent in the United States, Europe, and developing countries. Appendix B provides an overview of urban agriculture best practices from outside Canada.



This section provides an overview of actions and policies that are considered Best Practices for urban agriculture in terms of their:

- application in a number of communities
- effectiveness in supporting urban agriculture

The Best Practices outlined in this section are summarized in four sections:

- infrastructure
- economic development
- coordination with other departments
- land use planning

### **3.1 Infrastructure**

- recognize urban food production as infrastructure contributing to clean air and water as well as food security.
- connect urban agriculture to recycled water and provide incentives (e.g. density bonusing, utility service fee discounts) for green infrastructure that reflect savings to City (e.g., rooftop gardens use stormwater and composted rooftop gardens absorb more stormwater than grass, reducing city's stormwater sewer management costs).
- consider opportunities to connect compost programs to urban agriculture.
- explore opportunities for rooftops gardens ranging from free-standing containers to technologically advanced layering systems (i.e., green roofs) that accommodate drainage and protect the roof from roots and greenhouse or glass cold frames.
- consider alternatives to drinking water for agricultural irrigation.
- explore opportunities available through the \$150 million Canada-British Columbia Municipal Rural Infrastructure Fund (CBCMRIF) for communities with populations under 250,000. CBCMRIF targets green municipal infrastructure such as water and waste-water systems, public transit, and environmental energy improvements, as well as cultural and recreational

facilities and infrastructure to support tourism.  
<http://www.canadabcmrif.ca/en/about.htm>.

- incorporate urban gardens and rooftop gardens into integrated stormwater management plans and liquid waste management plans.
- incorporate new green roof standards into bylaws and building codes.
- consider options for collection of compost city-wide to complement recycling
- establish low cost facilities for “close to source” collection and sorting of organic wastes.
- utilize *Environmental Planning and Management Process* (EPM) from United Nations’ Sustainable Cities Programme.
- encourage investments in systems for rainwater collection and storage and for small-scale water saving irrigation systems (e.g. drip irrigation) in order to reduce the demand for treated water.

### 3.2 **Economic Development**

- support commercialization of food produced in cities to enhance gardens’ self-sufficiency (e.g. farmers market, on-site sales, value added processing opportunities).
- examine opportunities for industrial ecology (e.g., eco-industrial parks).
- support (e.g. provide credit or make space available) to small enterprises (e.g., composting, processing, and vending of locally-grown food) on condition that ecological modes of production are used along with adherence to food safety regulations.
- support locally-owned stores and sale of local products; link to existing Buy-Local campaigns.
- create permanent sites for farmers markets throughout the city; incorporate necessary utilities, parking, and loading areas into the design and provide these facilities at minimal cost.
- support social enterprise initiatives involving urban agriculture through social marketing and leveraging existing resources.
- support farmers needing new business plans to expand opportunities.



### **3.3 Coordination with other Departments and Sectors**

- support public-private partnerships between businesses, city councils, provincial initiatives, and urban and rural farmers to establish stable agricultural activities in and near cities.
- encourage the collaboration of churches, community centres, housing centres, and non-profit agencies.
- work with private landowners and other levels of government to identify where additional farmers markets and community gardens might be established on land or adjacent to facilities not owned by the city.
- support or provide incentives to schools, hospitals, military centres, and other landowners to promote food production on their grounds.
- integrate urban agriculture into a broader sustainability strategy which includes economic and social aspects.
- link food production to other municipal/regional responsibilities such as recreation, water storage, nature conservation, firebreak zones, and zones with high flooding risk; provide economic incentives to encourage farmers' participation in the management of such areas.
- support applied research on composting and digesting technologies, biogas production, and waste water re-use.



### **3.4 Land Use Planning**

#### **Policy Development**

- designate areas and strategies for urban agriculture in Official Community Plan.
- consider community gardens as a priority use when evaluating uses for city-owned land.
- review city bylaws governing the keeping of livestock and other animals within the City.
- establish land trusts and conservation covenants for private or public lands to provide long-term security for urban agriculture sites.

- establish a municipal agricultural land bank to link available land with people wishing to farm/garden; regulate by municipal ordinance, issuance of temporary licenses to users.
- apply Smart Growth and other principles that manage urban and suburban sprawl without loss of critical open space and farmland.
- include urban agriculture in City’s managed open space strategy.
- utilize buffering techniques such as ‘edge’ planning, vegetated or constructed barriers, natural corridor edges, building setbacks, adjacent land use compatibility, and reduced densities near productive agricultural areas to anticipate and reduce urban/agricultural conflicts.



### **Resource / Soil Management**

- conduct a survey assessment of brownfield sites that have potential for short- or long-term urban agriculture, including techniques that do not depend on soil quality, such as raised beds and soil amendments (e.g., compost) over top of questionable soils, aquaculture, hydroponics, aeroponics, and greenhouse production.
- support “recycle” farms that incorporate waste products at the dump/landfill and below the sewage treatment plant.
- establish natural resource conservation farms on steep slopes, floodplains or over aquifers.



### **Multi-Use Site Development**

- support use of buildings (roofs, walls, balconies, rooms), home gardens, backyards etc., for food production.
- support use of institutional and public lands for farming/gardening (e.g., along railways, under power lines, in parks, military bases, schools, golf course fairways, or airport-approach areas).
- develop urban agriculture pilot projects on institutional property.

## Community Development

- identify grocery stores and access to food as important considerations for developing and redeveloping neighborhoods.
- consider land swaps, long-term leasing arrangements, and community ownership as means of providing land for urban agriculture.
- lease under-utilized or vacant city-owned land to growers; provide incentive for cleaning up vacant spaces.
- consider social values of urban agriculture when defining appropriate land uses.



## Development Standards

- include land for food production in environmental impact review criteria for new developments and businesses.
- incorporate urban agriculture into new developments by increasing the availability of garden, greenhouse, and rooftop garden space, and create a package of incentives such as density bonuses and tax credits for developers who incorporate urban agriculture into their designs.
- recognize gardens as a landscape amenity.
- create urban agriculture guidelines, other educational tools for landscapers and developers.
- incorporate communal gardening space and edible plant material into multifamily developments.



## Zoning

- define urban agriculture within the zoning by-law as a distinct form of use that is permitted in all zones and includes community gardens and retail sales of agricultural products.
- consider options for community gardens in the planning and redesign of facilities such as community centres and leisure areas.
- ensure farmer's markets are in locations offering access to large markets,

product comparison shopping, and other factors contributing to effective business development.

- designate periurban agricultural zones in city development plans as parts of “green belts” or “green corridors”.





### 4.1 Urban Agriculture in Kamloops

Kamloops has a strong agricultural history with the earliest settlers attracted to the open grassland landscape that supported a viable farm and ranching industry. Orchards and market gardens were also successful businesses in the 1930 – 50's in north and south Kamloops.



Currently, the ranching industry dominates the agricultural sector. There is also a trend towards rural settlement of small hobby farms and rural residences. The urban agricultural land base has been gradually eroded by urban infill development and there are few remnants of historical farms (e.g. Brocklehurst and Valleyview orchards). Despite the loss of traditional farm units, Kamloops has

made significant gains in supporting urban agriculture. In particular, Kamloops has been successful in developing the following components of urban agriculture:

- farmers market (Saturday and Wednesday)
- community garden program
- community kitchen program
- backyard gleaning program
- FoodShare program
- food policies in the Kamloops Social Plan
- OCP policies in support of agriculture

The review of best practices presented in the previous sections and the appendices has indicated that throughout the world there is recognition of an important role for urban agriculture. In British Columbia, urban agriculture is further supported as an activity enabling the simultaneous achievement of provincial targets of increasing healthy active lifestyles and improving environmental conditions. Urban agriculture provides opportunities for healthy local food production and is also regarded as a catalyst for achieving social, health, economic and environmental benefits.



There are many challenges facing a future role for urban agriculture, particularly as development densities and land values increase. Under these conditions integration and prioritization of urban agriculture requires creative strategies and multiple partnerships. The best practices discussion has provided many useful strategies including roof top gardens, land reclamation, and gardening in utility corridor rights-of-ways. Five evaluative measures were used to identify the best practices most suitable to Kamloops.

Evaluation Measures:

1. consistent with current direction of the Official Community Plan.
2. recognizes seasonal and topographic variations in Kamloops growing conditions.
3. time-sensitive – implementable over a 5-10 year period.
4. builds upon existing and historic community activities and resources.
5. contributes to the social, economic, health and environmental conditions in Kamloops.

Municipal strategies to support urban agriculture in the City of Kamloops are presented in the following areas:

- community gardens
- landscaping for urban food
- establishing a strong policy framework
- support for urban agriculture

## **4.2 Community Gardens**

Community gardens are an important ingredient of urban agricultural programs throughout the world and Kamloops has been a leader in the province with its community garden program.

Community gardens have been successfully integrated into existing neighbourhoods such as the North Shore and Brocklehurst, however, as neighbourhoods are developed with higher densities and infill it will be important to plan for future urban





agriculture and community garden opportunities. A strategy to ensure that community gardens are considered in community and neighbourhood planning exercises includes the following actions.

Recommended Actions:

- 4.2.1 It is recommended that the Official Community Plan be amended to formally state that opportunities for community gardens are considered as part of the planning process; particularly where new development is achieving higher densities and is located within favourable agricultural areas (e.g. lower river valley ecosystems).
- 4.2.2 It is recommended that the City of Kamloops explore avenues for ensuring that urban agriculture is taxed as agriculture. Implementation of this action will require working with the B.C. Assessment Authority to recognize agricultural areas in new development projects (including community or rooftop gardens) as unique assessment values that can be taxed independently.
- 4.2.3 It is recommended that the City continue to explore funding and partnership opportunities to ensure the sustainability of the existing community garden program.
- 4.2.4 It is recommended that community gardens utilize and promote organic practices, and that pesticide use be prohibited in community gardens.
- 4.2.5 It is recommended that the City of Kamloops undertake a community garden inventory of existing and potential community garden resources and opportunities. The proposed inventory should consider opportunities for new partners (e.g. School District No. 73) and may provide recommendations for ideal targets. The University of British Columbia, Design Centre for Sustainability, for example, suggests municipalities target 100 – 500 sq.m. of community gardens for 1000 persons (see Table 4.1).

The proposed inventory should consider the evaluative measures presented in Section 4.1. For example, a new community garden opportunity on the City parkland acquired as part of the Valleyview Orchard Walk development could meet the following evaluation targets:

- consistent with existing official community plan policies for complete neighbourhoods and sustainable development.
- recognizes historic farm use and agricultural suitability.
- time sensitive – can be developed to support needs of new Orchard Walk community now under construction.
- builds upon existing commitment to public use of land.
- contributes to social, economic, health and environmental conditions of neighbourhood population.
- can be serviced with river intake and avoid use of domestic water for irrigation.
- accessible via proposed pedestrian bridge as “green” alternative transportation option.

### **4.3 Landscaping for Urban Food (Edible Landscapes)**

The City of Kamloops has longstanding policies and standards for landscaping. Required landscaping is typically ornamental in nature and contributes to community social, aesthetic and environmental values. It is recommended that the City continue to emphasize quality ornamental landscaping while integrating opportunities for food-producing landscapes. Social housing projects with supportive services and common kitchen facilities, for example, provide excellent opportunities to incorporate urban gardens (agriculture) as part of overall site development requirements.

Recommended Actions:

- 4.3.1 It is recommended that the City recognize urban gardens as a defined and approved use in all zones, including residential, institutional, utility and commercial zones. The definition of urban gardens would include roof top gardens and all areas with food-producing plant materials.
- 4.3.2 It is recommended that the City amend the zoning regulations for the Central Business District zone to include roof top food gardens and greenhouses as amenities eligible for increasing the floor area ratio for new developments in the Central Business District.

The City Centre (Central Business District) is an area where policies support infill development and densification. Roof top gardens can contribute to the social,

economic, and environmental conditions of these areas. Guidelines and regulations for roof top gardens will specify non-toxic practices, support public and private commitments to the addition of food gardening in new development projects, and make efficient use of limited land resources.

The National Research Council of Canada conducted a 2-year study of green roof technologies in partnership with a Rooftop Garden Consortium. In 2001, the Council's Institute for Research in Construction (IRC) held a workshop with construction industry professionals to identify public policy and research directions. The workshop proceedings, along with current research developments in green roof technology, can be found on the IRC's website: [http://irc.nrc-cnrc.gc.ca/pubs/index\\_e.html](http://irc.nrc-cnrc.gc.ca/pubs/index_e.html).

The Canadian Standards Association and the BC Association of Landscape Architects are also in the process of drafting green roof technical standards that may be integrated into a Kamloops approach for roof top gardens.

4.3.3 It is recommended that the City continue to encourage any construction of or renovations to public buildings to incorporate roof top gardens into the overall development (e.g. Kamloops Centre for Water Quality). A public project of this nature also serves as a pilot project to demonstrate the benefits of roof top gardens in improving social, economic and environmental well being. Benefits include:

- active lifestyles for building residents and employees.
- energy efficiencies through alternative forms of insulation.
- minimal irrigation costs and reduced stormwater management costs through absorption of stormwater by plants and soils.

4.3.4 It is recommended that the City amend either the Zoning By-law landscape standards for multi-family zones or the Development Permit Area Guidelines for multi-family projects to require new multi-family projects to integrate food producing areas into the overall development project as part of the required landscape area.

The City of Vancouver has developed guidelines for edible landscapes that can be adapted to the Kamloops context. As part of this process it will be important to develop guidelines that are appropriate for Kamloops including, for example,

plants that are hardy to Kamloops, require minimal maintenance, and are suitable to the needs of the residents of the proposed development. The Vancouver edible landscape guidelines are presented in Appendix A as a potential template for Kamloops.

As part of this process it will be useful to have a pilot project that will demonstrate the successes of planning for urban food production through the addition of edible landscapes. A number of currently proposed housing projects in Kamloops present opportunities for edible landscape projects (e.g. the Tranquille Resort development and the Fortune Drive social housing project).

#### **4.4 Policy Framework**

Urban agriculture is supported in the current Official Community Plan, however existing policies tend to be directed specifically at lands within the ALR. There are several opportunities to expand upon the current policies to identify a broader context for urban agriculture including economic and social planning perspectives.

Recommended Actions:



4.4.1 It is recommended that policies supporting local food security continue to be addressed in the Kamloops Social Plan. It is recommended that these policies be both broad and specific.

4.4.2 It is recommended that the City of Kamloops continue its commitment to supporting the Kamloops Food Policy Council (KFPC) in meeting the following KFPC objectives:

- increasing food production employment in the region;
- encouraging systems of production, processing, distribution, consumption and recycling that protect our natural resources;
- supporting local and regional agriculture and food production systems which supply wholesome food to the region's residents on a sustainable basis, balancing fair international agricultural trade and diverse vibrant production for the local market;

- providing safe, sufficient, and nutritious food to all residents;
- respecting food as a basic human right where access to safe and nutritious food is not limited by economic status, location or other factors beyond a resident’s control; and
- ensuring all residents have the information and skills necessary to achieve nutritional well-being.

4.4.3 It is recommended that the City encourage and promote organic agricultural practices wherever possible.

4.4.4 Best Practices standards have been developed to scale appropriately sized food-producing facilities in municipalities as outlined in Table 4.1. It is recommended that the City of Kamloops reference these standards when undertaking community planning projects or evaluating new development initiatives.

**Table 4.1: Designing Community Food Systems – Metrics**

SYSTEM	SYSTEM ELEMENT	RATIOS PER 1000 POP.	SIZES (TYP. OR MIN.)
PRODUCTION	edible landscaping	--	linear (within right-of-ways)
	community gardens	1/1000	100-500 sq.m. (1000-5400 sq.ft)
	community garden plot	6.5 (Montreal)-22.2 (Berlin)	2-9 sq.m. (20-100 sq.ft)
	allotment gardens	--	5 ha (12.5 acres)
	allotment garden plot	--	18 sq.m. (200 sq.ft)
	community greenhouse	--	4.88 x 7.32 m (16 x 24 ft)
	aquaponics	--	1860 sq.m. (20,000 sq.ft)
	hydroponics	--	930 sq.m. (10,000 sq.ft)
PROCESSING	microfarm / market garden	--	0.5 ha (1.25 acres)
	agriculture eco-park	--	4 ha (10 acres)
	community kitchen	--	37.5 sq.m. (400 sq.ft)
PROCESSING	commercial kitchen	--	4320 sq.m. (4500 sq.ft)
	catering/processing kitchen	--	93 sq.m. (1000 sq.ft)
	DISTRIBUTION	grocery store	--
		--	2250 sq.m. (24,000 sq.ft) medium
outdoor/covered marketplace		--	370-750 sq.m. (4000-8000 sq.ft)
marketplace vendor stalls		--	3 x 3 m (10 x 10 ft)
clubs/food banks/etc.		--	46-93 sq.m. (500-1000 sq.ft)
RECOVERY	cafeteria	--	93-372 sq.m. (1000-4000 sq.ft)
	solar aquatic waste treatment	200-1000 sq.m. (2500-10,500 sq.ft) [a 730 sq.m (7800 sq.ft) system can serve up to 2000 homes]	1500 sq.m. (16,000 sq.ft)
RECOVERY	in vessel composting	a 2 ha (5 acres) site serves 15,000 people	1300 sq.m. (14,300 sq.ft)

Source: UBC Design Centre for Sustainability

4.4.5 The implementation of policies supporting agriculture will ultimately result in specialized urban areas devoted to agriculture. The City may have an interest in

the long term protection and enhancement of these areas, and should consider application of land trusts and conservation covenants for private and public lands as tools for providing long-term security and support for investment in agricultural lands.

- 4.4.6 The City of Kamloops is committed to working with senior governments on the future of public lands. It is recommended that the City of Kamloops support agricultural initiatives wherever possible in joint land use planning processes.

The City and the Provincial Government are, for example, currently planning for the future of the former Rayleigh Correctional Centre. This site is located in the ALR in rural area between the neighbourhoods of Rayleigh and Heffley Creek. The future of the former Rayleigh Correctional Centre site is an example of a current planning partnership for public lands where this policy provides an opportunity to:

- protect lands in the ALR.
- provide long term soil reclamation of a brownfield site.
- integrate agriculture with other non-farm uses on brownfield areas.
- improve conditions for agriculture in Kamloops.

## **4.5 Support for Urban Agriculture**

The City of Kamloops has several avenues of service delivery that can contribute to the enhancement of conditions for an urban agricultural economy.



- 4.5.1 It is recommended that the City of Kamloops work with the local Farmers' Market to foster the Market's growth and continued success, and to support opportunities for additional Farmers' Market locations. Public spaces in private commercial developments are encouraged to support farmers markets, making it easier and more convenient for purchasers to choose between local and non-local products.

- 4.5.2 It is recommended that the City of Kamloops partner with local gardening organizations to promote urban agriculture demonstration gardens and education gardens. A demonstration food garden, similar to the demonstration xeriscape

garden, can become an effective education tool for homeowners, students, etc. and has the added benefit of producing local produce that can be integrated with the food distribution system (e.g., FoodShare and backyard gleaning programs).

- 4.5.3 It is recommended that the City of Kamloops continue to recognize and support the role of agriculture in the local economy. Further development of the agricultural economy may be supported through either designating a position on the Board of Directors of Venture Kamloops for a member of the local agricultural community, or regularly involving Venture Kamloops staff in the activities and meetings of the local Agriculture Awareness Group.

The Agriculture Awareness Group is currently co-facilitated by the BC Ministry of Agriculture and Lands and the Interior Health Authority, and is committed to supporting and enhancing opportunities for local food production, distribution, and marketing. The Group has recently met to discuss the following projects designed to stimulate the local agricultural economy:

- a local food producers' association that will work collaboratively to distribute, process, and educate the public about local food products, and;
- a Grower's Guide that will provide information about food produced by vendors from the local Farmers' Market.

***APPENDIX 'A'***

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*City of Vancouver Edible Landscaping Guidelines*



## ...more benefits...

**Recreation:** Edible plants engage people as they grow, harvest, and eat them. Whether in a private garden or a public space, people become more involved and connected to the land and the food that they grow.



*The Fruit Tree Project brings together a range of community members to harvest and share fruit.*

**Environment:** Using edible plants to replace common ornamental plants or to fill unplanted areas enhances biodiversity. Many edible plants are also a part of local ecosystems and are food for birds and beneficial insects.

**Economic:** In Vancouver the average family spends almost \$4500 per year on groceries. Growing and harvesting food right from your yard or a shared space will help reduce your grocery bill.

*Mt. Pleasant Community Garden: A garden plot can produce vegetables all season long in Vancouver.*



**Health:** Edible plants are nutritious and delicious. By participating in growing and harvesting your own food you can also ensure that no chemicals are used on them.

**Sustainability:** Edible landscaping is another component of urban agriculture. By growing more food in our city we enhance access to local food. At the same time, this has the potential to decrease fossil fuel emissions by reducing our dependence on food that is shipped from far away places.



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## Where to find more information

### Web resources:

City Farmer [cityfarmer.org](http://cityfarmer.org)  
The Fruit Tree Project [vcn.bc.ca/fruit](http://vcn.bc.ca/fruit)  
Environmental Youth Alliance [eya.ca](http://eya.ca)

### Books:

*The Complete Book of Edible Landscaping*  
by Rosalind Creasy  
*The Edible Container Garden*  
by Michael Guerra  
*Urban Eden*  
by Adam and James Caplin  
*Food Plants of Coastal First Peoples*  
by Nancy J. Turner

### Phone numbers:

City Farmer's Compost Hotline 604-736-2250  
UBC Hortline 604-822-5858

### Gardens:

**Compost Demonstration Garden** at City Farmer on Maple St. & 6th Ave. has tips on composting and organic yard maintenance and there is a beautiful garden with an excellent display of food plants year round.

**UBC Botanical Garden** at 6804 SW Marine Dr. includes food, medicinal herb, and native plant gardens as well as fruit trees that grow well in Vancouver.

**Vandusen Botanical Garden** at 37th Ave. & Oak has a bountiful summer food garden provides fresh produce for the restaurant.

**Strathcona Community Garden** at Prior St. & Hawks Ave. provides an excellent example of a wide range of edible plants and trellised fruit trees. A lists of other community gardens in Vancouver can be found at:

[vancouver.ca/parks](http://vancouver.ca/parks)  
(search word "community gardens").



# Edible Landscaping

## Inside...

What is edible landscaping?

What are the benefits?

What edible plants grow here?

Where to find edible plants?

**The Vancouver Food Policy Council** supports the development of a just and sustainable food system that fosters equitable and culturally appropriate food production, distribution and consumption, nutrition, community development, and environmental health.



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## What is edible landscaping?

Edible landscaping is the use of plants that produce food in place of more commonly used ornamental plants. Many of these plants are beautiful and still provide ornamental quality while also producing edible leaves, flowers, nuts, and berries. In this way, edible plants serve "double duty" by creating the outdoor spaces and gardens we love to be in and by giving us local, healthy, and delicious food.

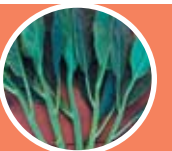
## What are the benefits?

In an urban environment edible plants give more benefits than just food...

**Education:** The use of food plants in the landscape allows people to see how different foods grow and learn about new food plants.

**Culture:** There are many food plants that have important uses in different cultures. Edible landscaping provides the opportunity to grow plants that might not be readily available in grocery stores and the chance for others to learn about new foods they may have never seen before.

*Gai lan is an important vegetable for cooking in many Asian cultures, but is not always sold in grocery stores.*



**Community:** Educational and cultural benefits lead to community building as people learn about different food plants. People often work together to plant, maintain, and harvest their own produce (not to mention sharing the food at a potluck or community dinner).

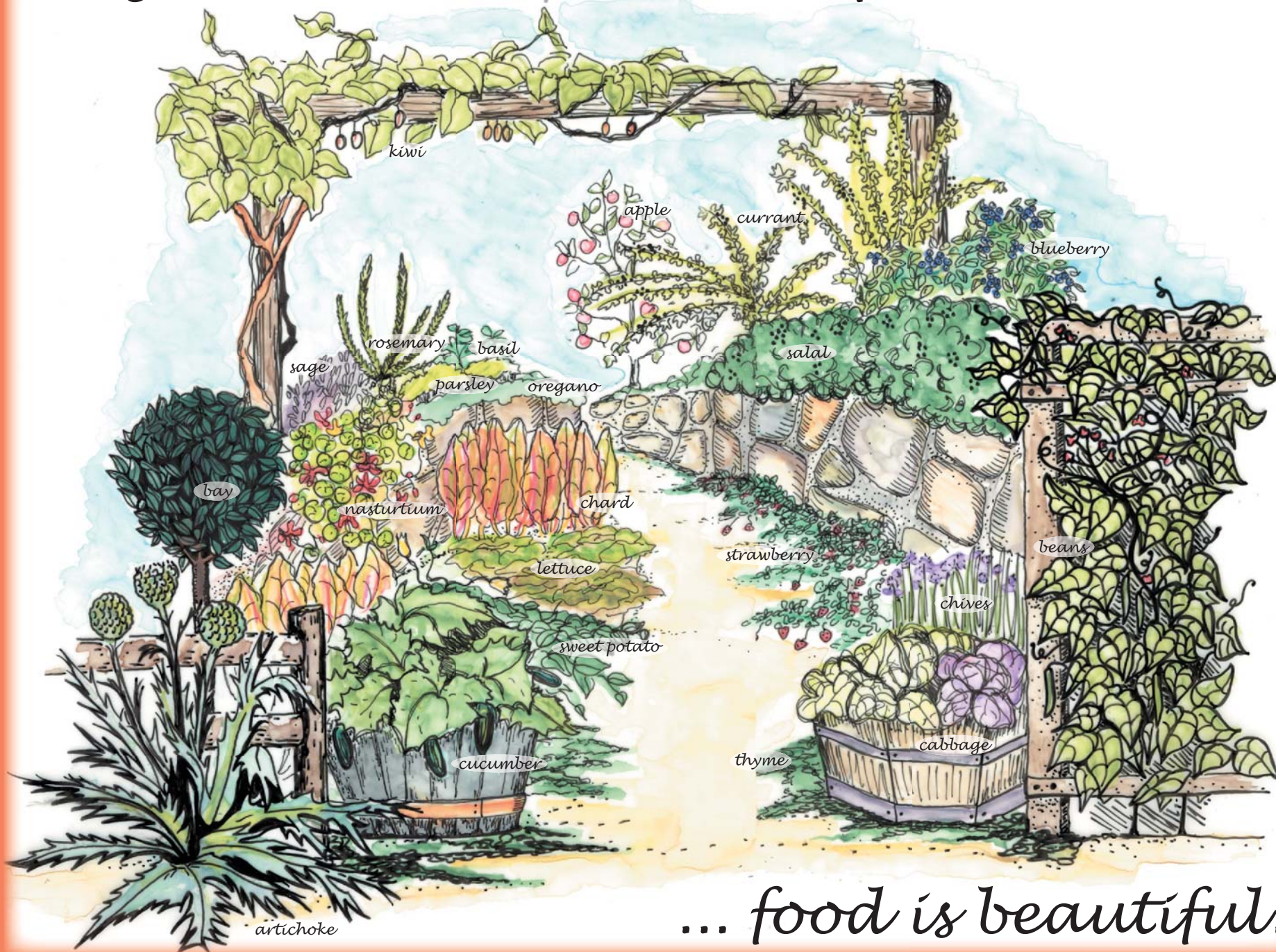


*Working and eating bring a community together at the UBC Farm.*





# Imagine an edible landscape...



... food is beautiful!

## What edible plants grow here?

This illustration is just an example of some of the many edible plants that can be grown in Vancouver.

Contact the City of Vancouver for more information on edible landscaping and a detailed list of edible plant species that grow well in Vancouver:

website: [vancouver.ca/foodpolicy](http://vancouver.ca/foodpolicy)

email: [foodpolicy@vancouver.ca](mailto:foodpolicy@vancouver.ca)

## Where to find edible plants

Local nurseries and garden stores sell a range of edible plants that are suitable for the Vancouver area. Speak with a local grower about what species are available and what edible plants are most suitable for a specific location. Growers are knowledgeable about disease and pest resistance, soil conditions, sunlight, and watering requirements.

To find a specific plant or grower go to the Canadian Nursery Landscape Association web site and click on the "plant finder" or "find members" tabs at the top of the page:

[canadanursery.com](http://canadanursery.com)

Or call the BC Landscape & Nursery Assoc. to request a Buyer's Guide:

604-574-7772 or 1-800-421-7963

Ask a nursery about local seed catalogues.

When in doubt call ahead to a nursery to see if the plant you are looking for is available.



CITY OF VANCOUVER





CITY OF VANCOUVER, FOOD POLICY  
Community Services  
453 W. 12<sup>th</sup> Avenue Vancouver BC, V5Y 1V4  
Ph: 604.873-7487 Fax: (604) 871-6048  
[foodpolicy@vancouver.ca](mailto:foodpolicy@vancouver.ca)

## EDIBLE LANDSCAPING

This bulletin defines “edible landscaping” and outlines considerations for developers and contractors responsible for installing or replacing landscape plants. Edible landscaping is the term used to “describe the practices of using food-bearing plants for landscaping purposes in place of more commonly used ornamental plants” (Southeast False Creek Urban Agriculture Strategy, Final Report, 2002). In 2003 the City of Vancouver adopted policy supporting the development of a sustainable food system for the city. As part of this Food Policy mandate, the City of Vancouver recognizes that connection between the urban environment and the growth of food (urban agriculture) offers a number of creative solutions to move towards a more sustainable population. Growing food in the city increases the understanding the natural processes of food growth and can provide greater local control of the food system. Edible landscaping supports these goals. Incorporating edible plants such as fruit and nut trees, berry bushes, vegetables, herbs, and edible flowers into urban landscapes maintains aesthetic values, while also providing many other benefits such as:

- **Environment:** Using edible plants to replace common ornamental plants or to fill unplanted areas enhances biodiversity. Many edible plants are native and part of local ecosystems, they are adapted to the local climate and provide habitat for urban wildlife. Edible plants are also food for birds, animals, and beneficial insects.
- **Education:** The use of food plants in the landscape has the potential to connect people with where their food comes from and how it grows. For example, people might not know that kiwis grow on a vine or that they can eat salal fruit, an important food plant for coastal First Nations people.
- **Culture:** There are many food plants that have important uses in different cultures. Edible landscaping provides the opportunity to grow plants that are not readily available in grocery stores or the natural landscape. This also allows for others to learn about new foods they may have never seen before.
- **Recreation:** Edible plants provide people with the opportunity to interact with the landscape by engaging them in growing, harvesting, and eating edible plants. Such interactions can also foster a sense of landscape stewardship among people.
- **Community:** Educational, cultural, and recreational benefits all lead to community building. Desirable communities include opportunities for social interaction and environmental connections.
- **Economic:** Edible plants add value to conventional landscaping. In addition to their aesthetic quality and habitat value, the fruits produced can supplement people’s diets and grocery budgets. In Vancouver the average family spends almost \$4500 per year on groceries. Growing and harvesting food right outside people’s doors could supplement grocery bills as well as healthy diets.
- **Health:** In addition to the recreational health benefits, participating in growing and harvesting edible plants can also allow people to have more control over how their food is grown.
- **Sustainability:** Edible landscaping is another component of urban agriculture. By enabling the growth of more food in the city, access to food is increased. At the same time, growing food locally has the potential to reduce fossil-fuel emissions as less food is shipped from far off places.
- **Aesthetics:** Combining edible plants- including annual vegetables, perennial herbs, berry bushes, and fruit trees- with conventional landscaping can be very beautiful. As these plants are recognized as edible they help create a stronger sense of place and a more memorable experience in yards, plazas, gardens, and parks.

The following table includes examples of edible plants that are suitable for the Vancouver area:

Common Name	Latin Name	Edible Part	Form	Landscape Value	Maintenance
<b>Ground Covers:</b>					
• Cloudberry	<i>Rubus chamaemorus</i>	Sweet orange berries	Mat-forming, semi-evergreen	Excellent under shrubs, along edges, or trailing over walls	Native; hardy; sun or part shade
• Bunchberry	<i>Cornus Canadensis</i>	Sweet red berries	Mat-forming perennial	Beautiful in shady areas	Native; damp areas; shade
• Woodland strawberry	<i>Fragaria vesca</i>	Small sweet strawberries	Mat-forming perennial	Attractive under shrubs and along edges	Native; hardy; sun or part shade
<b>Vines:</b>					
• Chinese gooseberry	<i>Actinidia arguta</i>	Bite-size kiwi fruit	Woody, deciduous vine	Over sturdy arbors and up trellises	Well drained soil; sun or part shade
• Grapes	<i>Vitis labrusca</i>	Sweet eating grapes	Vigorous, woody, deciduous vine	Over sturdy arbors and up trellises	Well drained soil; sun or part shade
<b>Evergreen Shrubs:</b>					
• Evergreen huckleberry	<i>Vaccinium ovatum</i>	Sweet black berries	1-3 m rounded shrub with glossy leaves	In borders or as a hedge	Native; hardy; sun or part shade
• Sage	<i>Salvia officinalis</i>	Fresh or dried leaves season food	0.5 m mounding shrub with grey-purple leaves	In borders or containers	Drought tolerant; full sun
<b>Deciduous Shrubs:</b>					
• Wild black currant	<i>Ribes laxiflorum</i>	Round black berries	1-2 m open shrub with nice fall colour and spring flowers	In borders or as a hedge	Native; hardy; sun or part shade
• Blueberries	<i>Vaccinium corymbosum</i>	Commercial blueberry	2-3 m upright shrub with nice fall colour and spring flowers	In borders, as a hedge, or in containers	Well drained soil; sun or part shade
• Hazelnut	<i>Corylus cornuta</i> var. <i>californica</i>	Hazelnuts	1-5 m shrubby tree with great fall colour	In borders or as a hedge	Native; hardy; sun or part shade
<b>Evergreen Trees:</b>					
• Sweet bay	<i>Laurus nobilis</i>	Dried leaves season cooking	8-12 m multi-stem tree with glossy leaves	In borders and containers or as a screen	Well drained soil; sun or part shade
<b>Deciduous Trees:</b>					
• Wild crabapple	<i>Malus fusca</i>	Crabapples	2-10 m open tree with beautiful spring blossoms	In borders or trained along fences and walls	Native; hardy; tolerates damp soil and shade
• Apple	<i>Malus speciosa</i> Var. <i>belle de boskoop</i>	Apples	3-6 m tree depending on rootstock	In parks, borders, or trained along fences and walls	Well drained soil; full sun
• Pear	<i>Pyrus communis</i>	Pears	10-20 m tree with glossy dark green leaves	Shade tree or dwarf varieties in borders and containers	Hardy; full sun
• Indian plum	<i>Oemlaria cerasiformis</i>	Small plum-like fruit	2-5 m shrubby tree with early white blossoms	Attract many birds in parks, borders, or as a hedge	Native; hardy; well drained soil; sun or part shade

This table is **just a sample** of the many edible plants that will grow beautifully in the Vancouver landscape. For a more comprehensive list of edible species including annuals, perennials, woody shrubs, trees, and native plants, please visit the City of Vancouver Food Policy website at:

Website: [www.vancouver.ca/foodpolicy](http://www.vancouver.ca/foodpolicy)

Email: [foodpolicy@vancouver.ca](mailto:foodpolicy@vancouver.ca)

Additional reference material that is online includes:

- Brochure: Edible Landscaping
- Report: Southeast False Creek Urban Agriculture Strategy, 2002

## ***APPENDIX 'B'***

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*Best Practices from Outside Canada*

## BEST PRACTICES FROM OUTSIDE CANADA

### United States

Green Roofs for Healthy Cities (GRHC) is a non-profit industry association working to “increase awareness of the economic, social, and environmental benefits of green roof infrastructure across North America and advance the development of the market for green roof products and services.” The GRHC website reports over 80% growth in green roof square footage in the United States and 72% growth in North America between 2004 and 2005 (<http://www.greenroofs.net/index.php>).

### Davis, California

- home to a residential development that incorporates the following urban agriculture features (<http://www.villagehomesdavis.org/>):
  - ◆ community gardens as edge space
  - ◆ orchards and edible landscaping as green corridors
  - ◆ 30 percent of the land designated for food production
  - ◆ houses share common outdoor spaces available for food production
  - ◆ streets run east/west and lots are oriented north/south to provide maximum solar exposure
  - ◆ residents of the development grow 24% of their annual fruit and vegetable needs

### Burlington, Vermont

- an Eco-Park Food Enterprise Center which produces fish, shrimp, mushrooms, salad greens, and compost using byproducts from local food manufacturers and farms in year-round greenhouses fueled by waste heat from the local wood-fired power plant.
- in 1991 the City approved the *Burlington Area Community Gardens Master Plan* which is being revised and updated.

## Chicago

- City has transferred city-owned and tax-delinquent lots to community groups as a means of creating new neighborhood spaces.
- City has contracted with a non-profit corporation to provide maintenance of vacant land including community gardens; non-profit owned or leased 48 sites in 31 City wards in 2004.
- City permits animal husbandry in certain zoning districts.
- greenhouses for urban agriculture.
- top city in North America for green roof implementation in 2005.
- 1998 plan, *Cityspace: An Open Space Plan for Chicago*, includes development of community gardens in every neighborhood.

## Philadelphia

- water department partnered with a non-profit institute to create a half acre farm which grossed \$25,000 in first season, over \$50,000 by third.
- created a farm on an abandoned brownfield site in an economically disadvantaged neighbourhood.
- permits animal husbandry in certain zoning districts.

## Madison, Wisconsin

- City has approved changes to the zoning ordinance to encourage community gardens as part of its land use plan.
- City's Common Council has passed resolutions for the creation of permanent community gardens on city-owned property, and for the establishment of a Community Gardens Advisory Council to research ways the City could support community gardens.

## Seattle

- approved resolution making community gardens part of city's Comprehensive Plan (1992).
- Comprehensive Plan (1995) set target of at least one community garden for every 2,500 households in each urban village.

- through a neighbourhood planning process, 22 neighbourhoods identified community gardens as an essential feature.
- community gardens identified as third highest priority for neighbourhood improvement.
- Department of Parks and Recreation policy allows community gardens without a permit in all zoning districts, as long as they do not displace existing recreational activities.
- currently 12 gardens on parkland; these include public amenities such as demonstration sites and seating areas.
- community design processes utilized to enable all park users to provide input
- community gardens partner with Seattle Housing Authority to work with recent immigrants living in public housing; project enables participants to grow food for personal use and sale:  
[www.cityofseattle.net/neighborhoods/ppatch](http://www.cityofseattle.net/neighborhoods/ppatch).
- in 1992 City Council passed resolution to include community gardens in the evaluation of priority use of city surplus property.

### Portland, Oregon

- supports community gardens in its City Plan.
- calculates density bonuses based on ratio of green roof coverage to building's footprint.
- In 2004 City Council requested an inventory of city-owned lands suitable for agricultural uses; inventory and report completed by graduate students and accepted by Council in 2005:  
<http://www.portlandonline.com/osd/index.cfm?c=42793>
- Food Policy Council formed an Urban Agriculture Subcommittee and six Technical Advisory Committees (TACs) to explore impediments to and potential management plans for urban agricultural on city-owned properties .
- offers an increase in floor area ratio for buildings utilizing rooftop gardens.

### Boston

- has zoning provisions for community gardens.
- City, state, and private land is managed by public and private organizations and land trusts for urban agriculture.
- uses food as a basis for economic development.



- has a farmer training program for Eastern Massachusetts: (<http://www.thefoodproject.org/>)
- zoning code includes nine Open Space Subdistricts, each of which is available for specific activities; one of these is a *Community Garden Open Space Subdistrict* that can include vacant public lands.

### Buffalo, NY

- has a greenhouse operation that:
  - ◆ uses hydroponic and aquaculture techniques to produce fish and vegetables
  - ◆ has created one hundred full time jobs and thirty-five part time jobs, many of which are filled by former welfare recipients
  - ◆ is located on a remediated brownfield site

### New York State

- Office of Community Gardens:
  - ◆ provides information on available vacant lands suitable for community gardens
  - ◆ assists community groups in accessing land by coordinating with other State departments

### New Britain, Connecticut

- partnered with a community based development organization to develop an organic farm from 5.5 acres of land requiring rehabilitation. The area included 40,000 square feet of greenhouse and 10,000 square feet of retail space, and is located in one of the poorest and densest neighborhoods in the city. ([http://epa.gov/Region1/brownfields/success/urban\\_oaks\\_ct\\_agp.htm](http://epa.gov/Region1/brownfields/success/urban_oaks_ct_agp.htm)).

### Berkeley, CA

- *Planning Commission General Plan* includes the following recommendations for community gardens:
  - ◆ partnerships with community groups and local school system
  - ◆ ongoing public access

- ◆ creating gardens in dense residential areas with few other opportunities for food production
- ◆ food production training and organic agriculture education by the public school and university systems
- ◆ rooftop gardens

### District of Columbia

- Food Production and Urban Gardens Program:
  - ◆ legislated through Comprehensive Plan Act in 1984, established in 1987
  - ◆ maintains a vacant lands inventory
  - ◆ provides technical assistance to community gardeners
  - ◆ supports educational gardens

### San Francisco, CA

- Sustainability Strategy  
 (<http://www.sfenvironment.com/aboutus/policy/sustain/food.htm>) includes the following urban agriculture policies:
  - ◆ Allow a sustainability tax reduction on sales and property taxes for sustainable practices described by the City's Department of the Environment.
  - ◆ Explore incentives for growers to sell seasonal foods locally.
  - ◆ Grant permits for produce street-brokers to sell produce at locations in addition to farmers' markets.
  - ◆ Explore mini-food markets in certain districts of the city; develop various market models of providing food.
  - ◆ Maximize food and agricultural production within the City itself.
  - ◆ Community and rooftop gardens exist in every neighborhood and business district, allowing sufficient access for all residents.
  - ◆ Double the number of community, school and residential edible-garden training projects.
  - ◆ Establish demonstration farms on available public land in San Francisco (with sensitivity to the needs of native plants and wildlife).
  - ◆ All new publicly-funded construction has rooftop and/or ground-level gardening space.
  - ◆ All new private multi-unit residential construction has gardening space.

- ◆ All new housing projects have a dedicated amount of edible-garden space.
- ◆ Modify city regulations to require green spaces in housing projects.
- ◆ Tax and other economic incentives have been established for businesses and home-owners growing food using sustainable practices.
- ◆ Update city laws and regulations to allow for small-scale animal production.
- ◆ Initiate a "fruit-tree in every yard" campaign for San Francisco backyards.
- ◆ Initiate a city orchard program with non-profit organizations and schools, which will include the use of appropriate space in public parks and other public land.
- ◆ Identify appropriate locations and promote beekeeping in large parks and public open-space areas, including San Francisco watershed lands.
- ◆ Ensure greater populations of pollinators by planting appropriate larvae food vegetation where possible and in harmony with the needs of natural areas (in home gardens, public parks, public land).
- ◆ All vacant land has become utilized for appropriate ecological purposes, including food production
- ◆ 50% of all vacant land not appropriate for biodiversity refuge has become utilized for productive purposes.
- ◆ Identify and make available for edible gardens appropriate vacant space (temporary or permanent).
- ◆ Identify and catalogue all public vacant properties for ecological purposes, including greenhouse and food producing activities.
- ◆ Donate vacant land to non-profit organizations for gardening projects. *(Suggested for corporations)*
- ◆ Amend the City Charter to allow for the discounted sale of unused or other city properties to non-profit organizations for community-based food-related projects.
- ◆ Dynamic public/private partnerships are operating to maintain all public land areas dedicated to food production.
- ◆ Establish an infrastructure that allows and encourages all residential, commercial and public organic residual producers to recycle their residuals.
- ◆ Establish a city-wide collection program for food and agricultural residuals and process them into compost or other agricultural products.

- ◆ Enact and enforce building code regulations that require food recycling facilities in all San Francisco food-related establishments.
- ◆ Provide city-generated compost and other organic soil amendments to all city schools and community gardens for food production and garden projects (and to general public if supplies are sufficient).
- ◆ All agricultural and food production and landscaping only use organic amendments.
- ◆ All city departments use organic amendments in landscaping projects.
- ◆ Evaluate and develop markets for compost and other organic residual products, with a priority of in-city markets.
- ◆ Develop or modify policies, laws and regulations to encourage or require the use of compost and other organic amendments in all public agencies and publicly-financed projects.
- ◆ Develop and implement economic and/or tax incentives for the commercial and residential sectors which recycle food residue and/or use compost and other organic amendments.
- ◆ Create a training program assisting food-related establishments in recycling food residue.
- ◆ Establish a tax incentive for businesses that reduce their waste generation by 50%.
- ◆ The use of synthetic chemicals from non-renewable resources has been reduced in all city departments and city-funded projects, substituting sustainable practices that enhance natural biological systems.

Much of San Francisco's farmland is managed by one of two non-profit organizations: the Garden Project and the San Francisco League of Urban Gardeners. San Francisco citizens have passed bond measures on the local ballot to support these agencies in their work.

The City of Trenton, New Jersey is supporting a non-profit group in developing a 5-acre community farm that provides employment training to residents of inner city neighbourhoods.

Some American municipalities contract with private companies to compost the landscaping residues from city parks and provide home collection services for vegetative household wastes. Collected waste in the form of compost is made available to city agencies and urban farmers, and the excess is sold to rural farmers and private

landscaping companies. Animal farmers have marketed manure in areas where demand is high. In areas of lower demand, farmers may give away their manure in order to avoid paying for waste removal. By assisting farmers with transportation, cities can prevent illegal dumping and subsequent water contamination while providing farmers with organic fertilizers. Organic urban agriculture can be enhanced through the use of biological pest controls, which can also be locally produced.

Source: <http://www.ruaf.org/node/60>

### **Examples from Outside North America**

- Street trees provide food and medicinal products in cities and countries including:
  - ◆ Thies, Senegal
  - ◆ Port au Prince, Haiti
  - ◆ Argentina
  - ◆ Chile
  
- Roadsides, railroad verges, and/or utility right-of-ways are farmed in the following cities:
  - ◆ Oslo, Norway
  - ◆ Winhoek, Namibia
  - ◆ Rio de Janeiro, Brazil
  
- Poland's 8000 council gardens produced one sixth of the amount of fruits and vegetables (500 000 tonnes) consumed nationally in 1997 (Pederson & Robertson, 2001).
  
- London, UK has roughly 17 city farms, 3 of which are owned and managed by the local authority, who can also provide long term leases (Mbiba, 2003).
  
- CPULs (continuous productive urban landscapes) integrate recreational and agricultural functions, contributing to citywide landscape strategies (Viljoen & Bohn, 2005).
  
- Green roofs account for 15% of all roofs in Germany (Buholzer & Wark, 2006). The German green roof industry is supported through government policies and financial incentives.

- An initiative in Brisbane, Australia realizes a 20% return on investment from collecting compost from restaurants and using it for aquaculture and growing vegetables for sale. ([www.ruaf.org](http://www.ruaf.org)).
- Denmark:
  - ◆ Copenhagen has community gardens on municipally-owned property, such as railway property, as well as former landfills and industrial sites.
  - ◆ a private organization organizes two-thirds of the country's approximately 60,000 plots, which are leased from the municipality or private landowners.
  - ◆ as in other European countries, local, state, and federal laws regulate how garden associations are run, and how much they can charge for the sub-leasing of spaces.
  - ◆ in 2001, a nationwide "colony garden" law was passed that effectively made all community gardens on public land and all spaces located on the Danish railway system land permanent
  - ◆ remaining gardens can be dismantled only for reasons of substantial social importance, in which case the gardening association is entitled to replacement space.
  - ◆ colony garden law also includes provisions aimed at increasing the number of plots

Source: <http://www.portlandonline.com/shared/cfm/image.cfm?id=122588>

- Stockholm, Sweden
  - ◆ In 1975, the City Estate Office of Stockholm, Sweden adopted the following guidelines for allotment areas:
    - leisure gardens will be included in urban plans;
    - all new residential area plans will include space for gardening;
    - allotment environment will be improved by planting bushes and trees, such areas will also get improved street furniture (entrances, signs, notice boards);
    - gardens will be made more accessible to the general public;
    - design will be more viable and pleasant, less rectangular;
    - gardeners' needs for information and education will be met.

- In 1993 over 8,000 allotments had been provided by the local authorities in greater Stockholm, and the wait list consisted of over 7,000 names.

Source: Timothy Greenhow, Urban Agriculture: Can Planners Make a Difference, Cities Feeding People, CFP Report Series Report 12, [www.idrc.ca/cfp/rep12\\_e.html](http://www.idrc.ca/cfp/rep12_e.html)

- Many cities collect and compost organic materials for re-use in urban agriculture. For example, Västerås, Sweden has a residential complex that supports urban agriculture in the following ways:
  - ◆ kitchens designed to make room for waste separation; all biological waste is composted in thermally insulated containers
  - ◆ a composting room is located alongside every street entranceway
  - ◆ courtyard includes a compost corner, where composted material ages before being used in the development's garden plots
  - ◆ produces 60% less waste than other developments of similar size

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