Langley Urban Agriculture Demonstration Project

Final Project Report and Site Plan

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KPU Institute for Sustainable Food Systems

Project Partners:

Langley City

metro vancouver

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Acknowledgments

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The Langley Urban Agriculture Demonstration Project (LUADP) is a planning and design collaboration between the City of Langley, Metro Vancouver and the Institute for Sustainable Food Systems (ISFS) at Kwantlen Polytechnic University. The project aims to bring urban agriculture, and related elements to a 23 acre (9 ha) BC Hydro transmission right-of-way (ROW) in the City of Langley. The detailed planning phase has been funded by Metro Vancouver, through the Sustainability Innovation Fund.

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Project Partners:

The Institute for Sustainable Food Systems (ISFS) is an applied research and extension unit at Kwantlen Polytechnic University that investigates and supports regional food systems as key elements of sustainable communities. ISFS focuses predominantly on British Columbia but also works with research partners in other parts of Canada. ISFS provided technical expertise and led development of this plan.

Metro Vancouver is a federation of 21 municipalities, one Electoral Area and one Treaty First Nation that collaboratively plans for and delivers regional-scale services. Its core services are drinking water, wastewater treatment and solid waste management. Metro Vancouver also regulates air quality, plans for urban growth, manages a regional parks system and provides affordable housing. The regional district is governed by a Board of Directors of elected officials from each local authority. Metro Vancouver provided funding for the detailed planning phase, through the Sustainability Innovation Fund.

The City of Langley is located within Metro Vancouver, and is designated as a Regional City Centres. It is situated on the southwest mainland coast of British Columbia, Canada. The City of Langley is neighboured in the north, east and south, by the Township of Langley and the City of Surrey in the west.

The City of Langley is the municipal partner on this project, as well as the owner of the land where the LUADP is being proposed. The city recognizes the potential for urban agriculture to contribute to goals in the City’s sustainability framework, and be a show piece for the community.
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The Langley Urban Agriculture Demonstration Project (LUADP) is the detailed planning process and design for a municipally supported urban agriculture on a site within a BC Hydro transmission right-of-way (hydro ROW) in the City of Langley. The planning process was completed between January 2017 and February 2018. This report documents the planning process, outlines the integration of ecological, educational and agricultural amenities, and makes recommendations for implementation and long-term management.

The proposed site plan features small scale food production, and significant areas dedicated to ecological restoration, including native plantings, habitat areas, and a pollinator corridor. Education is supported by an outdoor classroom, micro-production plots, and a demonstration orchard.

The site plan aims to create a community space that maintains passive recreation functions, connects to the City’s existing network of parks and open space, and successfully integrates urban agriculture.

Traditional, community-driven urban agriculture projects have experienced success and failure worldwide. Growing interest and support from municipal partners will play a vital role in supporting these initiatives moving forward.
This report outlines considerations for a successful, municipally supported urban agriculture project in the City of Langley. The findings may also be a guide for other communities in Metro Vancouver undertaking similar projects.

A. Background

This report documents work to date on the Langley Urban Agriculture Demonstration Project (LUADP). The idea of urban agriculture was first proposed in 2010. The City of Langley, and academic partners recognized the potential of the project to achieve goals in the City’s Sustainability Framework to create more opportunities for urban farming in the City.

At that time an initial concept plan for the site was developed, and partners moved forward to seek funding to support further planning and development phases. The remainder of this report documents the detailed planning phase.

1. Introduction

Urban agriculture is the activity of producing, processing and distributing food and other agricultural products on land in urban areas. The concept is often employed to address social and environmental sustainability in cities.

Despite the growing popularity of urban agriculture, and the local food movement, there are fundamental challenges, such as access to land, that must be addressed to move urban agriculture projects forward.

The LUADP can help address these barriers by developing a model for the urban agriculture on publicly owned land. The land is also located within a BC Hydro transmission right-of-way which means that the project could become a model for similar projects in other Metro Vancouver municipalities.

2. Site Assessment

Site assessment focuses on three main areas, gathering information that will help determine if the site is suitable for urban agriculture.

- Soil Analysis
- Context Analysis
- Site Analysis

Soil testing revealed no significant pollutants or heavy metal contamination, and it was recommended that the project team proceed with developing a concept plan.

Context and site analysis revealed potential opportunities and challenges for developing urban agriculture in this location.

There are also opportunities for urban agriculture to align with goals in the City’s Sustainability Framework, as well as contributing to ongoing park enhancements, and social connectivity. There is also a commitments at the local government level to exploring new opportunities for urban agriculture in the City.

The project also aligns with the Metro 2040 Regional growth plan and with the Regional food System Strategy drafted by Metro Vancouver in 2011.

The site is well used for passive recreation, and valued by surrounding residents for the natural character, and wildlife habitat. Current use patterns will have a significant impact on how the site can be programmed for urban agriculture.

Assessment revealed challenges that could impact planning and implementation such as community buy in, soil quality and possible conflict with existing uses.

3. Urban Agriculture in Hydro Right-of-ways

Agriculture is considered a compatible use in hydro transmission right-of-ways. However, there are few examples of urban agriculture projects in these areas which means there is further investigation required to understand how urban
agriculture amenities can be designed and managed successfully within hydro ROWs.

Exposure to electric and magnetic fields (EMF) is often a concern when developing community amenities in, or near hydro transmission lines. Humans are exposed to EMF everywhere there is electrical current flowing. Research, conducted around the world, has not found significant cause and effect relationships between exposure to EMF. In most jurisdictions community amenity development in hydro ROWs proceeds, and the precautionary principle is employed.

This section summarizes the ongoing health related research into electric and magnetic field exposure and connects specifically to recommendations for public amenity design which include locating features away from overhead wires, and public education.

4. Planning and Design Process

Urban agriculture projects can involve lengthy consultation and public outreach processes, which are important in order to gain community support and identify strategic project partners.

Participants from local and regional agencies, with possible interests in an urban agriculture project were engaged by the project team. Participants recognized community buy-in would be a significant factor in project success. Additional issues that could face this type of project including regulatory challenges, funding, servicing and evaluation.

The City of Langley then hosted community open houses to reach out to the public, and specifically to those living in the surrounding neighbourhood. At the first of two open houses the focus was to introduce the project, provide background information about urban agriculture, and get initial feedback.

The majority of those who attended the open houses did not support the development of urban agriculture on this site. Concerns expressed by the public included:

- Why was this site chosen for urban agriculture?
- Use serves those not living in neighbourhood
- Increased traffic and non-resident parking in neighbourhood
- Disruption to neighbourhood peace and quiet
- Loss of privacy
- Increased potential for crime and homelessness
- Safety concerns around powerlines (particularly for children)
- Pest infestation, particularly rats
- Poor aesthetics (shabby structures and garden plots)
- Nuisance from agricultural operations – dust, odours, pesticide use
- Loss of wildlife habitat

Those who did provide feedback generally favoured:

- Limiting the scale of urban agriculture
- Education focused amenities
- Maintaining and enhancing the trail network
- Maintain emphasis on passive recreation
- Protecting and enhancing wildlife habitat
- Restoring riparian and other environmentally sensitive areas

5. Site Plan

The plan for the LUADP site takes a balanced approach to urban agriculture, education, environmental restoration, and passive recreation.

The plan outlines the details of the site design highlighting three primary components: servicing and infrastructure, non-production amenities and production amenities.

Non-Production Amenities:
- Buffer Planting Areas
- Habitat Areas
- Pollinator Corridor
Production Amenities:

- The Farm
- The Classroom
- The Orchard

6. Management

Managing programming and production on the site will involve a coordination between stakeholders including and newly created Non-Profit Society, the City of Langley (as land owner), and BC Hydro. Engagement with community partners, the public will also be necessary to support programming, and site activities.

Operations of the site primarily consider how the production amenities will function, successfully meeting project goals and the needs of the community. Food production will be small scale and encouraging the public to participate as much as possible. Fruits and vegetables grown on the site can be distributed into the community in a variety of ways. The following methods can be explored:

- Community cultivation
- Food banks and gleaning programs
- Institutional procurement
- Farm gate sales
- Farmer’s Markets

Both paid staff, and community volunteers will be required to support operations and programming on the site.

Coordination between stakeholders will be facilitated through the development of a site use agreement. The agreement will cover a number of topic and help to ensure that the expectations of all stakeholders are clear, and met.

Based on the type and scale of amenities, preliminary budgets have also been presented:

Total Capital Costs for LUADP:
$ 981,225.00

Total Annual Operating Costs for the LUADP:
$ 95,500.00

Operational expenses should be covered by a combination of grants, donations, and farm product sales.

7. Implementation

Developing a site for urban agriculture involves capital investments to develop the features and the infrastructure that supports urban agriculture. A phased approach is recommended that can be flexible to the availability of funding and resources. Beginning with a pre-development phase which involves establishing the management framework for the project and raising funds to begin development of the site. This is followed by four site development phases:

- **Phase 1**: Infrastructure and Site Servicing
- **Phase 2**: Amenity Development
- **Phase 3**: Habitat Restoration
- **Phase 4**: Naturalization

8. Conclusion

Urban agriculture is being embraced for the potential to address local level sustainability, and help build a more resilient food system. As land prices escalate, and available land for these project is increasingly scarce there is a need for creative and collaborative solutions for food production within urban boundaries.

The concept plan for the LUADP demonstrates a strategy for implementing urban agriculture on publicly owned land. It also provides an adaptable model for practicing urban agriculture in land located within hydro ROWs in other communities.

With the prepared concept plan, the next important steps include identifying community partners, and determining the level of volunteer support and community engagement. The concept plan will be presented to potential partners during recruitment.

Fundraising is also an important next step and a number of potential funding sources have been identified, including:
• Organizational grants
• Government grants
• Municipally supported grants
• Private sector partnerships
• Institutional partnerships

Both local and regional level partners recognized the potential for food production on currently unprogrammed public land. Hydro ROWs represent a type of available land where the potential for food production should be further explored through the LUADP. The plan represents a tangible plan for implementing urban agriculture in hydro transmission right-of-ways, and other publicly owned utility corridors.

Additionally, the learnings from this process can be applied to development of similar projects in other municipalities across Metro Vancouver.
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A. Project Background

a. Early Concept Development—2010

In 2010, the City of Langley (the City) initiated an exploratory project with academic partners to develop a detailed plan and cost structure of a Municipally Supported Urban Agriculture (MSUA) demonstration project. This project was supported by municipal leaders because of the potential to contribute to goals in the City’s Sustainability Framework. These contributions could include:

**Energy, Climate Change and Air Quality**
- Decrease greenhouse gas emissions by reducing transportation demands through providing local food provisions

**Health, Safety and Well-Being**
- Development of local food systems and support for local farmers and local food distribution
- Partnership opportunities for developing urban farms within the City

**Local Economy**
- Strengthening and diversifying the local economy and creating local jobs

**Natural Areas, Parks and Recreation**
- Establishing more community gardens
- Creating stewardship programs for parks and natural areas
- Developing and maintaining green ways

**Solid Waste**
- Developing composting programs

**Water**
- Reduce load on the storm water system through demonstration gardens, rain barrel programs, and education

With sustainability in mind the project moved forward with the Institute for Sustainable Horticulture, sustainable food systems working group (now the Institute for Sustainable Food Systems) at Kwantlen Polytechnic University and the Collaborative Applied Landscape Planning (CALP) team at the University of British Columbia as partners.

In the initial concept for the site in 2010 the area divided into four distinct zones described below:

- **Zone 1**: The Entrance, is an area for public interaction and to host a farmers market, as well as for demonstration of sustainable accessibility features such as permeable parking areas, and bike parking.

- **Zone 2**: Demo and Research, will be an area dedicated to plots for research and demonstrations of organic gardening.

- **Zone 3**: Production, is where community gardens and market gardens will be located and incubator farm space made available.

- **Zone 4**: Natural Systems, will be an area that will increase the biodiversity of the local area and provide ecosystem services.
b. LUADP Detailed Planning-2017

Early concept development recommended a 12 month detailed project planning phase to develop a feasible concept plan for urban agriculture on this publicly owned site located within a hydro transmission right-of-way (hydro ROW).

The Langley Urban Agriculture Demonstration Project (LUADP) Detailed Planning Phase was initiated in 2016 with planning work beginning in January 2017. This phase was funded through Metro Vancouver’s Sustainability Innovation Fund. With support from both local and regional governments the LUADP aims to:

- Create a functional community space within and existing hydro ROW
- Be a pilot project for similar hydro ROW development project in the region
- Increase opportunities for urban food production
- Create educational opportunities for the community around agriculture
- Improve and enhance the utilization of publicly owned land

Principles

The project principles were developed collaboratively by project partners in consultation with key stakeholders. Guiding principles for this project include:

- Prioritize food production and education
- Ensure community fit and compatibility
- Educate the public about the integration of agriculture, energy, environment and community
- Develop a replicable process for planning and designing urban agriculture projects in hydro right-of-ways in the region.

Time Line

The original time line proposed 12 months for site assessment, consultation and outreach, planning and design, reporting on the projects findings.

The project time line was extended to accommodate additional consultation and a second Open House, held in September of 2017.

Figure 2: Time line for the LUADP Detailed Planning Phase, beginning in January 2017
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1. Introduction

1.1. Understanding Urban Agriculture

Urban agriculture (UA) is becoming a key strategy for addressing environmental and social sustainability in communities around the world. Producing food in urban communities is not a modern idea, however few cities have the necessary physical and social infrastructure to support agriculture, and other food system activities.

Urban agriculture requires access to biophysical resources (i.e. land, soil, water, nutrients) as well as socio-political resources (i.e. labour, financing, and community buy-in) some of which may not be readily available within cities.

What is Urban Agriculture?

Urban agriculture is the activity of producing, processing and distributing food and other agricultural products on land in urban areas. These systems are often closely connected to social, economic and ecological systems in cities.
urban boundaries. New creative solutions are therefore required that can create UA projects that are meaningful, and sustainable.

A scan of projects from around the world demonstrated a variety of positive outcomes, in addition to providing access to healthy, fresh food. UA projects are often described as occupying space at the nexus of farming and community development, integrating social, educational and environmental goals into productive landscapes.¹

Access to land is necessary for all UA projects, and can be a one of the most significant challenges for the development of community based and entrepreneurial farming initiatives in cities. In most jurisdictions, including Metro Vancouver, urban land is increasingly expensive meaning access to land for urban food production can be beyond the reach of those who are interested in initiating new projects.

Black Creek Community Farm is a community project that supports low income and immigrant populations in Toronto. Leveraging existing resources and knowledge the project was jointly founded by Everdale Environmental Learning Center, FoodShare and African Food Basket. They were able to access land through a lease agreement with the Toronto Region Conservation Authority (TRCA) for the 8 acre urban farm.²

Loutet Farm is a ½ acre market garden and ⅓ acre school garden located on publicly owned land, in a residential community in North Vancouver. Planning for the farm took two years and involved public consultation and was supported by UBC’s School of Architecture and Landscape Architecture’s. Funding was granted to support equipment, infrastructure, and wages for our staff. Donations from local businesses helped with the installation of fencing and irrigation. The project is now managed by the North Vancouver Neighbourhood House and the Edible Garden Project.³

In addition to the challenge of affordability, the amount of land available for food production is also decreasing in urban areas due to rapid urbanization, and the contamination of urban soils.

Land access and affordability continue to complicate efforts to initiate and sustain urban agriculture. As a result, food system and social development advocates are working to support creative approaches to land access, new strategic partnerships through precedent setting pilot projects.

Those advocating for urban agriculture recognize that it is not realistic to rely on urban agriculture to support the full range of food system activities (i.e. production, processing, distribution, and waste management) in every
community. It is also not a realistic expectation to assume that urban farms can fully support the food needs of urban populations. However, under the right environmental and social conditions UA projects provide a variety of benefits to urban communities and regions.

Urban agriculture can create employment opportunities, stimulate the local economy, create a sense of community, increase urban biodiversity, contribute to community food security and promote healthy lifestyles. Exploring new models for urban agriculture may also contribute to the development of resilient, local and regional food systems by providing public education opportunities and increasing access to fresh local produce for growing urban populations.

1.2. Municipally Supported Urban Agriculture

Those initiating and supporting urban agriculture projects can include individuals, environmental organizations, neighbourhood groups, faith based organizations, non-profits and private sector corporations. It is also becoming increasingly important for local governments to become involved in project development and management because they can draw on existing resources and institutional capacity. This has been shown to contribute to project resilience and sustainability. 4

Local governments can support UA projects by providing access to land, leveraging funding, creating enabling policy and zoning regulations, providing access to services (i.e. water and sewage), and identifying strategic locations for urban agriculture within communities. Involvement of local governments in UA projects can also help align project outcomes with the long and short term goals for municipalities around sustainability, economic development, and social development.

In recent North American history most urban agriculture initiatives have been started through community based, grassroots efforts to address issues at the neighbourhood scale. A deeper understanding of the factors that contribute to the success of UA projects shows that planning for food production in urban communities is most successful when incorporated into planning and policy making at the municipal scale. 5 While continuing to support the bottom up grassroots movements in urban agriculture it is recognized that institutionalization through local government support may improve coordination and lead to increased project resilience, and local level sustainability.

The McQuestion Urban Farm was built primarily to address food insecurity in a low income community. The project was municipally supported and involved collaboration with the McQuesten Neighbourhood group, the City of Hamilton, Social Policy and Research Council, academic institutions and private sector design companies. The farm now provides volunteer opportunities, and fosters strong bonds amongst residents. The farm will be run with significant input from the public on how to manage farm operations and programming. The City has provided access to land, made adjustments to their Official Community Plan, and providing staff support through the planning and development phases. 6
Despite the benefits for urban agriculture demonstrated when local government is supportive there may still be opposition from urban residents who think that municipal funding and capacity should not be directed towards supporting UA projects. Turning the tide of public perception will continue to be a significant challenge in moving these projects forward and could impact the availability of land, funding and other resources in the future.

Securing the necessary resources for urban agriculture in modern cities can be a challenge. Addressing this requires unique and creative approaches in planning, design and long-term management. Identifying opportunities to access land within urban boundaries, and establishing frameworks of support that include local government are both necessary in order to increase the available for urban agriculture.

The critical work of reconnecting urban communities with their food system is a complex undertaking. Innovative UA projects have demonstrated the transformative power of connecting urban populations with agriculture, and the local food system.

1.3. The Langley Urban Agriculture Demonstration Project

The Langley Urban Agriculture Demonstration Project (LUADP) is a unique project which aims to advance urban agriculture, through development of a concept plan for a site in the City of Langley. It is recognized that this project may be potential to advance goals in the City of Langley’s Sustainability Framework, in addition to other positive outcomes. The LUADP may also help to advance urban agriculture and local food programming in the City by creating awareness and building local capacity.

As a municipal partner, the City of Langley has been supportive of the project. Working with BC Hydro to create a model of urban agriculture that can work within the unique context of hydro ROWs also presents opportunities to explore new models for urban food production, and could also make more land available for urban agriculture across Metro Vancouver.
2. Site Assessment

The site chosen for the Langley Urban Agriculture Demonstration Project is located within a BC Hydro transmission right-of-way (hydro ROW). This is a statutory hydro ROW which means the land is owned by the City of Langley, and regulated by BC Hydro.

This hydro ROW occupies 23 acres (9 ha) of land, and is embedded within an established residential neighbourhood in the City of Langley. The following section outlines the unique biophysical, social, and cultural characteristics of the site. This analysis will help to determine if the site is suitable for urban agriculture, and what type of amenities would be best given the community context, and site characteristics. This site assessment includes three different areas of analysis:

**Soil Analysis**

Soil analysis and testing is a key first step in any UA project. This is necessary to determine if working on the site and consuming produce is safe. Soil tests can also provide baseline data about the physical and chemical properties of soil that impact food production, including pH levels and organic matter.

**Context Analysis**

Context analysis looks at the area surrounding a proposed project site considering how a project will fit into an existing neighbourhood. This also includes all relevant planning and policy contexts.

**Site Analysis**

Site analysis looks at the specific characteristics of the site that may or may not support urban agriculture. This includes biophysical, social and ecological characteristics, as well as current uses.

### 2.1. Soil Analysis

When UA projects are proposed there are frequent public concerns about health risks associated with consuming food produced in cities where there may be unknown contaminants in the soil. Land use history, as well as adjacent land uses can have an impact on the quality of the soil and should be considered in assessing the suitability of the urban sites for food production. Although contamination can sometimes be detected by a visual inspection of the site, soil tests are needed to ensure safety, and determine soil quality.
Toronto Public Health has developed a resource to help community groups, and others, to conduct and analyze soil tests in an effort to make more land available for food production within the City. This resource helps groups to: (1) assess the level of risk of contamination of a proposed urban agriculture site, (2) test the soil, and (3) determine strategies and protocol for addressing any concerns indicated from site assessment and soil testing.

Table one shows that there is a medium level of concern for sites located within hydro ROWs. Heavy metal contamination on these sites could come from construction and maintenance of transmission towers, or other infrastructure. There is also the risk of pollutants from the use of herbicides that may be used to manage vegetation within the hydro ROW. Although the use of chemical herbicides for vegetation management is not a common practice in all jurisdictions, it is important to test for chemical contamination for all proposed sites within hydro ROWs.

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<td>• Hydro corridor</td>
</tr>
<tr>
<td></td>
<td>• Commercial area</td>
</tr>
<tr>
<td></td>
<td>• Remediated industrial land</td>
</tr>
<tr>
<td></td>
<td>• Former landfill</td>
</tr>
<tr>
<td></td>
<td>• 30m from a rail line or major arterial road</td>
</tr>
<tr>
<td>High</td>
<td>• Gas station</td>
</tr>
<tr>
<td></td>
<td>• Dry cleaner</td>
</tr>
<tr>
<td></td>
<td>• Printing shop</td>
</tr>
<tr>
<td></td>
<td>• Auto body shop</td>
</tr>
<tr>
<td></td>
<td>• Industrial area</td>
</tr>
<tr>
<td></td>
<td>• Rail line of rail yard</td>
</tr>
</tbody>
</table>

Table 1: Risk Assessment Tool for Urban Agriculture. Adapted From City of Toronto Public Health.

<table>
<thead>
<tr>
<th>BATCH #</th>
<th>COMPOSITE BATCH SAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LH 1 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 2 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 3 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 4 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 5 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 6 (20-30cm)</td>
</tr>
<tr>
<td>2</td>
<td>LH 7 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 8 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 9 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 10 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 11 (20-30cm)</td>
</tr>
<tr>
<td>3</td>
<td>LH 12 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 13 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 14 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 15 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 16 (20-30cm)</td>
</tr>
<tr>
<td>4</td>
<td>LH 17 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 18 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 19 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 20 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 21 (20-30cm)</td>
</tr>
<tr>
<td>5</td>
<td>LH 22 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 23 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 24 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 25 (20-30cm)</td>
</tr>
<tr>
<td>6</td>
<td>LH 26 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 27 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 28 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 29 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 30 (20-30cm)</td>
</tr>
<tr>
<td></td>
<td>LH 31 (20-30cm)</td>
</tr>
<tr>
<td>7</td>
<td>LH 1 (deep)</td>
</tr>
<tr>
<td></td>
<td>LH 2 (deep)</td>
</tr>
<tr>
<td></td>
<td>LH 3 (deep)</td>
</tr>
<tr>
<td></td>
<td>LH 4 (deep)</td>
</tr>
<tr>
<td></td>
<td>LH 5 (deep)</td>
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<td>LH 6 (deep)</td>
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<td>8</td>
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<td>LH 25 (deep)</td>
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<td>LH 26 (deep)</td>
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<td>LH 27 (deep)</td>
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<td></td>
<td>LH 29 (deep)</td>
</tr>
<tr>
<td></td>
<td>LH 30 (deep)</td>
</tr>
<tr>
<td></td>
<td>LH 31 (deep)</td>
</tr>
</tbody>
</table>

Table 2: Composite Batches Submitted for Soil Testing.
2.1.1. Soil Sampling Protocol

A soil sampling protocol was developed by a soil scientist from Kwantlen Polytechnic University. In total, 31 sample sites were chosen within the ROW area. All sampling was conducted by Kwantlen Polytechnic University Sustainable Agriculture students under the supervision of staff at the Institute for Sustainable Food Systems and KPU Faculty.

Samples were taken between 20 and 30 centimeters below the surface at all of the 31 sites. Samples were also taken between 60 and 70 centimeters (deep) below the surface at sites where there was increased concern of possible contamination, such as areas adjacent to the capped land fill (now Uplands off Leash Dog Park) and in areas where dumping and excavation has occurred. 44 samples were collected and then grouped into composite batches to be submitted to a commercial laboratory for analysis. Table 2 shows how soil samples were grouped in order to create composite batches. Map 1 (above) shows the approximate location of each sample site and how samples were grouped into batches.

2.1.2. Soil Test Results

Soil tests will determine if there are any possible chemical or heavy metal contaminants on the site. They also provide information about the physical and chemical properties of the soil that impact food production.

Testing for soil properties including: soil carbon, organic matter, and pH levels will establish a baseline for amendments. However, these
properties are not a primary consideration in determining if the site can be used for urban agriculture.

Soil samples were analyzed by CARO Analytical Services in Richmond, British Columbia. An analysis of any possible chemical and heavy metal contamination was the focus of testing. Most labs testing is conducted based on a detectable threshold for both pollutants and heavy metal contaminants, which is directly related to impacts on human health.

The results of soil tests can then be compared to acceptable levels for agricultural production based on Canadian Environmental Quality Guidelines available from the Canadian Council of Ministers of the Environment (CCME). The CCME also has guidelines for other land uses such as recreation or residential. These are both understandably higher than the limits for food production.

**Pollutants**

No detrimental pollutants were found in the soil samples from the site. This is promising because chemical contaminants can be more challenging to remove from the soil, which may limit the opportunities for food production.

**Heavy Metal Contaminants**

Heavy metals naturally occur in soils, however in urban environments heavy metals have the potential to reach elevated levels from increased urban and industrial activity. The Canadian Environmental Quality Guidelines from the CCME were consulted to determine if heavy metals in the soil exceeded the safe thresholds for agriculture. Table 3 compares heavy metals that are of concern for agricultural sites with the results from LUADP samples. The heavy metal levels are relatively consistent across the site and with the exception of Cobalt detected in Batch 4, do not exceed the allowable limits for agriculture. However, this slight elevation detected does not pose a significant concern.

**Soil Properties**

Soil properties such as organic matter and pH are variable across the site. Based on the development of the site as a hydro ROW it is also likely that there is significant compaction of soil from construction and maintenance.

<table>
<thead>
<tr>
<th>Metals of Concern for Agriculture</th>
<th>Acceptable for Agriculture (mg/kg)</th>
<th>Batch 1 (mg/kg)</th>
<th>Batch 2 (mg/kg)</th>
<th>Batch 3 (mg/kg)</th>
<th>Batch 4 (mg/kg)</th>
<th>Batch 5 (mg/kg)</th>
<th>Batch 6 (mg/kg)</th>
<th>Batch 7 (mg/kg)</th>
<th>Batch 8 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>12</td>
<td>4.6</td>
<td>4.6</td>
<td>4.7</td>
<td>6.9</td>
<td>5.2</td>
<td>6.3</td>
<td>4.1</td>
<td>5.5</td>
</tr>
<tr>
<td>Cadmium</td>
<td>14.</td>
<td>0.21</td>
<td>0.14</td>
<td>0.16</td>
<td>0.38</td>
<td>0.13</td>
<td>0.17</td>
<td>0.12</td>
<td>0.16</td>
</tr>
<tr>
<td>Cobalt</td>
<td>40</td>
<td>36</td>
<td>36.5</td>
<td>32.1</td>
<td>43.5</td>
<td>38.1</td>
<td>34.4</td>
<td>31.6</td>
<td>37.8</td>
</tr>
<tr>
<td>Chromium</td>
<td>64</td>
<td>9.2</td>
<td>9.4</td>
<td>8.9</td>
<td>10.8</td>
<td>9.7</td>
<td>8.7</td>
<td>8.2</td>
<td>9.4</td>
</tr>
<tr>
<td>Copper</td>
<td>63</td>
<td>23.4</td>
<td>25.3</td>
<td>23.6</td>
<td>41.6</td>
<td>27.3</td>
<td>27.4</td>
<td>22.3</td>
<td>28.5</td>
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<tr>
<td>Mercury</td>
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<td>0.05</td>
<td>0.05</td>
<td>0.08</td>
<td>0.07</td>
<td>0.04</td>
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<td>&lt;0.04</td>
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</tr>
<tr>
<td>Molybdenum</td>
<td>5</td>
<td>1.1</td>
<td>1</td>
<td>0.7</td>
<td>2</td>
<td>1.3</td>
<td>1.3</td>
<td>0.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Nickel</td>
<td>45</td>
<td>32.6</td>
<td>33.7</td>
<td>29.3</td>
<td>32.6</td>
<td>30.8</td>
<td>30.6</td>
<td>28.5</td>
<td>30.9</td>
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<tr>
<td>Lead</td>
<td>70</td>
<td>13.7</td>
<td>13.3</td>
<td>16.9</td>
<td>46.6</td>
<td>14.9</td>
<td>11.4</td>
<td>9.6</td>
<td>13.2</td>
</tr>
<tr>
<td>Selenium</td>
<td>1</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>Vanadium</td>
<td>130</td>
<td>56.2</td>
<td>55.6</td>
<td>50.3</td>
<td>58.6</td>
<td>50.4</td>
<td>50.4</td>
<td>49.6</td>
<td>53.6</td>
</tr>
<tr>
<td>Zinc</td>
<td>200</td>
<td>70</td>
<td>52</td>
<td>59</td>
<td>123</td>
<td>59</td>
<td>52</td>
<td>45</td>
<td>59</td>
</tr>
</tbody>
</table>

Table 3: Heavy metal contaminants and acceptable levels for agricultural sites compared to LUADP Results.
activities. For urban agriculture projects soil properties can be improved though a variety of practices, such as adding compost, mulch and incorporating cover crops.

2.1.3. Recommendations for Healthy Soils

Based on the findings from soil testing it was determined that there is no significant chemical or heavy metal contamination, and that site will support urban agriculture. These recommendations have been made to ensure that there are no risks to public safety and so that crop production can be successful.

- Conduct additional soil tests where in-ground food production is planned, particularly in areas where annual vegetables will be cultivated
- Support ongoing soil testing (every 3 years) of soil to monitor soil quality and health
- Use organic farming methods to build soil fertility over time
- Rotate crops annually, and throughout the season
- Include nitrogen fixing legumes in crop rotations
- Compost crop residue on site and apply to production areas as required
- Incorporate compost from trusted organic sources on a regular basis (if not made)
- Choose plants and crop varieties suited to the climatic and soil conditions of the site
- Consult with a soil expert to determine what amendments may be required to improve the fertility in cropping areas
- Plant a diversity of crops in both annual and perennial production areas
- Protect and enhance wildlife habitat by including naturalized plantings both around and within production areas

Image Source: Adobe Stock Images, tanacha
2.2. Context Analysis

The City of Langley is a rapidly growing, urban municipality located in the Metro Vancouver Region. The community is divided into six established residential neighbourhoods based around existing elementary school catchment areas, including: Douglas, Nicomekl, Blacklock, Uplands, Simmonds, and Alice Brown.

As a member government of the Metro Vancouver Regional District, most of the City of Langley is designated as a Regional City Centre in Metro Vancouver 2040: Shaping Our Future (Metro 2040). The City is growing at around 16% per year, and forecasted to double its population by 2026. With this growth on the horizon, the City’s Sustainability Framework aims to create complete, compact communities that incorporate parks and green spaces, good transit and a walkable urban environment. In the City centre, development will focus on multi-family residential, commercial and industrial buildings to accommodate residential and business growth. This goal is balanced with an equal priority on maintaining quality of life, and managing improvements to parks, roads and infrastructure.

Given the proximity of the project site to the Township of Langley and the City of Surrey, it is anticipated there could be opportunities for potential municipal and community partnerships between these communities.

The project site is also located near several schools including; Alice Brown Elementary, Simmonds Elementary, Uplands Elementary, and H.D Stafford Middle School. This presents opportunities to create dedicated space within the project site to support education, and engagement with the different schools.

Metro Vancouver Context

Metro Vancouver contains a significant amount of land in the Agricultural Land Reserve (ALR), located outside the Metro 2040 Urban Containment Boundary.

Although urban municipalities, like the City of Langley, have little ALR land they can be ideal locations to explore the opportunities of urban agriculture addressing urban food security, and contributing to building sustainable communities in the region.
Map 3: City of Langley Context.
2.2.1. Policy Context

Compared to other municipalities in the Metro Vancouver region, as well as in the Fraser Valley, the City of Langley has limited land area within the Agricultural Land Reserve (ALR) (approx. 16 ha) with the majority of it used for recreation at the Newlands Golf and Country Club. The 10 year Parks, Recreation and Culture Master Plan for the City of Langley identifies a variety of strategies for increased accessibility, sustainability and usability for parks and recreational programming. The plan indicates goals of more urban agriculture projects as well as, planting more trees and native plants while supporting community groups and environmental education. The Parks and Recreation Master Plan also recognizes the potential to support ongoing volunteerism by improving coordination systems through improved software.

The City of Langley’s Social Plan, prepared in 2007, recognized a number of priorities where the City should take action on social service issues in the community. The LUADP has the potential to address identified social service gaps related to green space, community based health services, and connecting diverse communities. The plan also contains specific recommendations for identifying sites for community gardens, better utilize existing parks, providing healthy meals in schools, and integration of diverse communities through volunteerism. Regionally, the LUADP is aligned with Metro Vancouver’s regional growth strategy (Metro 2040) goals to develop complete communities. The project could also concretely help advance some of the strategies and initiatives identified in Metro Vancouver’s Regional Food System Strategy and Action Plan related to food literacy, helping new farmers gain access to land, direct marketing opportunities, supporting k-12 education and broad support for urban agriculture.

2.2.2. Parks and Open Space

The City of Langley is a small municipality, but despite its size and urban character one that boast over 300 acres of parks and open space (a total of 12% of the municipalities land area). These parks support a wide range of recreational and cultural activities that contribute significantly to livability and quality of life for residents.

Recent upgrades to the City’s downtown core demonstrate a priority to improve accessibility and social connection through public realm improvements. Recent proposals for park enhancements demonstrate the City’s commitment to developing high quality parks with amenities to serve a variety of users. Penzer and Buckley Parks (located within the same hydro ROW area west of 200 St.) incorporate a dynamic range of program elements and aim to create a defining feature in the community. Currently these parks feature a bike park, newly installed “action park”, and passive recreation areas. The approved plan would also add community gardens, sports fields, public art, trails and enhanced open space. Development of the LUADP site is an opportunity to connect with this existing community amenity space within the BC Hydro Right-of-Way West of the LUADP site. The park has been successful and is well used by residents. Image Source: City of Langley
ROW creating a public amenity corridor to serve a diverse community of users from across the City.

To the east of the site is the Uplands Off-Leash Dog Park which was established on the site of a capped landfill.

In partnership with the Langley Environmental Partners Society, the City of Langley currently supports two community gardens at Linwood Park and Nicomekl Elementary School. There is a waiting list for participation in community gardening at Linwood Park, which is located in close proximity to higher density residential developments including townhouses and condominiums.

The network of parks and open space in the City of Langley represents creates community wide connectivity through recreational trails and natural corridors. The LUADP is ideally situated to become part of this green corridor network and to enhance urban agriculture programming in the City. The site is connected to the Nicomekl River through natural corridors and walking trails along Pleasantdale and Muckle Creeks and to existing parkland to the east and west along the hydro ROW. Maintaining pedestrian connectivity while enhancing the natural corridors that support wildlife and biodiversity will be high priorities for the project.

2.3. Site Analysis

The hydro ROW at the proposed location contains two 500 kV transmission lines and one 230 kV line. These bulk transmission lines bring power from the Columbia and Peace generating stations to the main load centers in the Lower Mainland and Vancouver Island.

In addition to hydro transmission infrastructure, there are also City assets on and adjacent to the site, including a water reservoir, stockpile area and pump station for the capped landfill located to the east. As the site is developed it is important to maintain access to all infrastructure elements for maintenance crews.

Currently, vegetation on the site includes shrubs and turf areas with limited biodiversity. Himalayan Blackberry (*Rubus armeniacus*) and Scotch Broom (*Cytisus scoparius*), both invasive species in the region are spread throughout the site. These species are commonly found in areas disturbed by development including; roadsides, right-of-ways, and pastures. BC Hydro has worked with local conservation groups including the Langley Environmental Partners Society to manage invasive plant species in hydro ROWs in order to enhance habitat and wild biodiversity and reduce the use of herbicides for weed and invasive plant control.

2.3.1. Current Uses

Community feedback received during Community Open Houses provided information about how the site is currently used. According to residents the site is well-used for passive recreation, and valued for its “undeveloped” and “natural” character.

Current uses include walking, dog walking, cycling, nature viewing, and some sledding in the winter. Residents indicated that they used the site regularly, even daily for these activities. They also value the site as a natural area providing local residents and surrounding property owners with a variety of benefits. These include peace and quiet, sense of privacy in backyards, habitat for wildlife, and a feeling of being close to nature. Some residents also forage for blackberries.

The site is accessible to pedestrians at many points in the surrounding neighbourhood and through the nature trails that run along Muckle and Pleasantdale Creeks North of the site. There are also direct pedestrian connection to the site from the grounds of Simmonds Elementary.

There is currently one vehicle access point off 200 St. used by maintenance vehicles only.
Map 4: Langley Urban Agriculture Demonstration Project Site Context

LEGEND

- Existing Parks
- Educational Institutions
- LUADP Site Boundary
- Municipal Boundary
- Existing Pathways
- Current Pedestrian Access Points
- Current Vehicle Access Point
- Hydro Transmission Wires
- Hydro Transmission Towers

Map Detail Area

Scale 1:6600

NORTH
existing right-of-way for 202 St. crosses the site but is not currently open to through traffic. It was communicated strongly by neighbourhood residents that this ROW should remain a pedestrian access point only, and not be opened to vehicles.

A City of Langley stockpile area is located inside the gate off 200 St. A City owned reservoir is also located in this area and is accessed by Engineering crews when required. BC Hydro vehicles have access to the site for infrastructure maintenance when necessary.

2.4. Opportunities and Challenges

Based on assessment of the site and surrounding context in the City of Langley opportunities and challenges have been identified for the LUADP. The City is motivated by directives in their Sustainability Framework which called for further examination of the potential of urban farming in BC Hydro ROWs.

Opportunities:

• Urban agriculture aligns with City of Langley Sustainability Framework, and other municipal policies

• Local policy is supportive of urban agriculture and environmental restoration on public land

• Regional policies support local governments in the pursuit of urban agriculture initiatives

• Soil test revealed no significant concern of contamination on the site

• Soil quality is adequate for agricultural production, with the potential to improve

• Land is publicly owned

• Site is located near schools & could provide educational benefits to local students

Challenges:

• Site is a key link to the existing parks and open space network in the City

• Site is connected to other community amenities by walking trails

• BC Hydro support development of compatible uses in hydro ROW areas

• Plans for amenity development in Penzer and Buckley Parks have recently been approved

• The project could enhance the existing green corridor network
Accessing land within urban boundaries that is appropriate for food production and related activities is one of the most significant hurdles for urban agriculture. Land in and around urban areas is becoming more expensive and food production is often seen as low value land use when compared to the economic returns from residential or commercial development. In response to this fundamental challenge facing urban agriculture, there is a need for creative solutions that can contribute to urban food security, education and community development.

Utility right-of-way (ROW) areas (including Hydro transmission ROW and road easements) represent an opportunity for food production that is yet to be fully explored in urban areas. More specifically hydro ROWs present a unique opportunity for urban farming. However, there is a need to more carefully consider the unique design and management strategies for creating effective UA projects that are compatible with existing hydro ROW uses.

In rural areas agriculture is routinely practiced within hydro ROWs. This includes livestock grazing and crop production, and most regular farming practices such as the use of heavy machinery and mechanical irrigation. In an urban context farming in hydro ROWs is less common. However, these areas are increasingly supporting for community amenity development, which includes small scale food production. Urban hydro ROWs present opportunities for the development of amenities, including: community farms, community orchards, school farms, demonstration gardens, or incubator farms. Community gardens, and pollinator pastures have already shown to be successful in hydro ROWs in many communities.

**Hydro ROW Urban Agriculture Examples**

Urban agriculture is a compatible use in hydro ROWs, however there are few projects to draw inspiration from. Project precedents can offer some insight into how urban agriculture can be designed to be compatible with hydro ROWs.

Image Source: Los Angeles Times

*Stanford Avalon Community Garden, Los Angeles CA*

This garden occupies is a 30 km corridor in South LA and contains 206 garden plots. Opening in 2006, Stanford Avalon has provided community members with access to healthy food, and community development opportunities. In addition to being located within a hydro ROW the site is bisected by a freeway, and a railway line. The project has made positive contributions to health and social connectivity. There have also been studies showing that the gardens have contributed positively to ecosystem health in the dense urban community.
The Flemingdon Park Market Garden is a proposed project on land within a Hydro One ROW. The City of Toronto Parks and Recreation Department is arranging to sign a lease with a community organization and will be permitting farming on the site. While the project is still per-construction, the space offers a lot of potential. The land is an open field where the soil has been tested and deemed healthy for agriculture. The project will be co-managed by FoodShare, a reputable non-profit focused on promoting healthy food and social equity. The plans have been prepared through community consultation by SHIFT Landscape Architecture.

3.1. BC Hydro Compatible Use Guidelines

Compatible use guidelines are created by utility companies, including BC Hydro to guide the development and maintenance of projects within or adjacent to hydro ROWs. Determining how hydro ROWs can be developed requires review of these guidelines as well as the statutory right of way agreement registered against the specific property. In British Columbia, all compatible uses in hydro ROWs are subject to final approval from BC Hydro Properties Division.

Based on available information and initial consultation with BC Hydro there are a number of physical and programmatic elements related to urban agriculture that could be restricted, or subject to alternative design based on safety requirements. These elements include:

- Construction of temporary structures
- Fencing
- Significant changes to grade and drainage
- Type and layout of irrigation systems
- Type of equipment and machinery used on site
- Height of vegetation
- Type of building materials used
- Type and location of electrical servicing
- Public access and programming

When planning for any community amenity development in a hydro ROW there are two primary considerations for site design and use. The first is clearance from utility works and infrastructure. This refers to the horizontal distance from utility infrastructure on a site such as towers or cables.

The second is line clearance which refers to the vertical distance from overhead wires of any infrastructure or vegetation within the ROW. Clearance from overhead wires must also consider the potential for wires to sag in hot weather, and any changes in grade across the site. It is recommended that all vegetation and structures adhere to specific height requirements, and additional clearance be given where wires may sag and a decrease of this clearance may occur.

3.2. Electric and Magnetic Fields and Human Health

Electric and magnetic fields (EMF) are invisible fields of energy that are present anywhere electricity flows. Since the 20th century there has been a steady increase in man-made
sources of EMF. They are emitted from a variety of sources, including hydro transmission lines, cell phones, telecommunications infrastructure, building wiring, and household appliances.  

Although often named together as EMF, electric and magnetic fields represent two distinct components of electricity. Most of the studies that examine the human health impacts focus on magnetic field exposure (measured in milligauss mG). The strength of magnetic fields can fluctuate throughout the day as energy demand shifts. Table 4, adapted from a BC Hydro online publication “Understanding Electromagnetic Fields” gives the magnetic field strength of the two different transmission line types that are located on the LUADP site. This also demonstrate the rapid decrease in field strength when moving away from overhead wires.

Table 5 offers additional information about the magnetic field strengths from common household sources demonstrating the pervasiveness of EMF in the everyday environment.

<table>
<thead>
<tr>
<th>Transmission Line Voltage</th>
<th>Under Transmission Lines</th>
<th>Edge of Right-of-Way (~20m)</th>
<th>Outside Right-of-Way (30m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>230kv</td>
<td>38mG</td>
<td>28mG</td>
<td>8mG</td>
</tr>
<tr>
<td>500kv</td>
<td>81mG</td>
<td>51mG</td>
<td>33mG</td>
</tr>
</tbody>
</table>

**Table 4:** Transmission Tower Voltage and Associated EMF Levels.

<table>
<thead>
<tr>
<th>Household Sources of EMF</th>
<th>At the Source (5-10cm)</th>
<th>~1m from Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hair Dryer</td>
<td>300mG</td>
<td>0.1-6mG</td>
</tr>
<tr>
<td>Dish Washer</td>
<td>20mG</td>
<td>1mG</td>
</tr>
<tr>
<td>Washing Machine</td>
<td>20mG</td>
<td>0.1-2mG</td>
</tr>
<tr>
<td>Power Saw</td>
<td>200mG</td>
<td>4mG</td>
</tr>
<tr>
<td>Vacuum</td>
<td>300mG</td>
<td>1-10mG</td>
</tr>
</tbody>
</table>

**Table 5:** EMF Levels of Common Household Appliances. Source: United States Environmental Protection Agency.

Scientific research about the health impacts of EMF exposure is ongoing and a variety of health outcomes have been examined. Health authorities such as the World Health Organization (WHO) and Health Canada review this research and have concluded that there is no cause – effect relationship between exposure to magnetic fields and impacts to human health. The research into health effects from EMF exposure mostly surround long term and occupational exposure with a focus on studying the effects on people who work in environments where exposure is extremely high.

The World Health Organization is responsible for aggregating research on the health effects of EMF exposure and have concluded that there are no substantive health concerns related to EMF at levels generally encountered in the public domain. Additional conclusions of research to date has led to the classification of EMF by the International Agency for Research on Cancer (IARC) as a “possible carcinogen to humans” the weakest of three categories used to assess potential carcinogens. This classification is due to a lack of concrete evidence about how EMF could cause cancer and the type of exposure that would be considered harmful.

BC Hydro also recognizes that despite conclusions made by these organizations, there are some member of the public who remain concerned about the health implications of EMF exposure. BC Hydro, along with other health authorities, continue to monitor and review the scientific developments related to EMF.

### 3.2.1. EMF Exposure in Public Amenity Design

With an increasing scarcity of open space in urban areas there are a growing number of examples of the use of hydro ROW as community spaces, both formally and informally. These developments include: urban allotment gardens, playgrounds, sports fields, recreational trails and wildlife habitat. With these projects there are often additional measures taken to protect the health and safety...
of the public due to the close proximity of hydro transmission lines and infrastructure, and concerns about exposure to EMF.

When hydro ROW areas are considered for community amenity development, utility companies work closely with municipalities and developers to protect public safety. This includes ensuring that designs adhere to compatible use guidelines, and that information is available to the public addressing EMF exposure and public safety.

Guidelines for mitigating exposure to EMF in public spaces are set and monitored nationally, however Health Canada does not consider any precautionary measures to be necessary with regard to daily EMF exposure. In other countries, and some local Canadian jurisdictions, prudent avoidance as a variation on the precautionary principle has been adopted to limit exposure to EMF when establishing community amenities in hydro ROWs. This means taking low or no-cost actions to reduce exposure such as public education, EMF monitoring, and increasing ground clearance between amenities areas and overhead wires with the right-of-way. In the absence of national guidelines in Canada, local level policies may be developed, and adopted to help guide amenity development in hydro ROWs.

Health and public safety are a primary concern when working in and around hydro right-of-ways and is an important consideration when designing community amenities in these locations. Adhering to all safety guidelines developed by hydro companies, and supporting ongoing public education regarding the safety of working in and around hydro transmission infrastructure will be important in the development of urban agriculture project in hydro ROW sites.

3.3. Developing a Model for Urban Agriculture in Hydro Right-of-Ways

BC Hydro, and other utility companies, are supportive of compatible uses in hydro right-of-ways and have approved a variety of different community amenities in other areas. Agriculture is one of a variety of compatible uses for hydro transmission right-of-ways, but is subject to a variety of design and programmatic restrictions in order to protect public safety, and maintain access to utility infrastructure. Hydro ROWs occupy significant tracts of land in communities. In proposing the LUADP it was recognized that accessing this land for urban agriculture could help make significant contributions to advancing urban agriculture in the City of Langley, and across the Metro Vancouver region.

Urban agriculture can be more intensive than agriculture practiced in rural areas because of the integration of educational activities and other community programming. Creating a model that is compatible with hydro right-of-way restrictions is possible, but will require cooperation from a variety of stakeholders, including utility companies and local governments.
4. Planning & Design Process

4.1. Consultation & Public Outreach

Urban agriculture must be designed to be integrated into existing communities. If done effectively, there is significant potential for these projects to have a positive impact on factors, such as: social cohesion, environmental sustainability, health and livability. However, when the concept is unfamiliar, projects may be perceived to negatively impact those who are living in close proximity to a proposed site, or because they appear to be costly or unsightly.

Ensuring that a project fits in well with the community, and that it provides the amenities needed in that community requires open dialogue with stakeholders and the public throughout the planning process.

The primary aim for consultation and public outreach during the LUADP was to share information with stakeholder, members of the public, and potential project partners.

4.1.1. Inter-agency Meeting

Prior to conducting public open houses, an inter-agency meeting was convened by Metro Vancouver. The purpose of this meeting was to engage with local and regional stakeholders to discuss potential synergies, and redundancies, as well as some anticipated challenges and opportunities for the LUADP. This meeting included participants from within the City of Langley, from neighbouring municipalities and from agencies with possible interests in urban agriculture.

The participants at this meeting reviewed the work done so far and made suggestions about what some of the key considerations may be going forward. One of the main takeaways from this meeting is that there is potential for the LUADP to act as a model, informing similar projects in the region. Many participants also agreed that community buy in would likely be a key factor for success, and that the response from the community should be carefully considered in planning for the LUADP.

Participants also shared experiences identifying additional challenges that could impact the success of the LUADP, and other similar projects in Metro Vancouver. These challenges are:

- Zoning, bylaws and local land use policies
- Agricultural land reserve policy
- Public safety
- Site aesthetics and cleanliness
- Access to funding for planning, implementation and management
- Access to water, and other servicing
- Project evaluation

Inter-agency Meeting Attendees:

Heather McNell  Metro Vancouver
Jaspal Marwah  Metro Vancouver
Roy Beddow  City of Langley
Kim Hilton  City of Langley
Kent Mullinix  Institute for Sustainable Food Systems
Emily Hansen  Institute for Sustainable Food Systems
Rasadi Cortes  BC Hydro
Carla Stewart  City of Surrey
Teresa Kaszony  Township of Langley
Michelle Truong  Fraser Health
Kamelli Mark  Agricultural Land Commission
Kelsey-Rae Russell  Agricultural Land Commission
Lenny Yun  Langley School District
4.1.2. Community Open Houses

Outreach with the public, especially resident living in close proximity to the project site was a priority. Community Open Houses were held to communicate the progress of the planning process with the public. These events focused on sharing information and collecting feedback from frequent users and those living in the neighbourhood.

Community Open House #1

The first Community Open House was held in Langley on May 10th, 2017 from 6-8pm at Alice Brown Elementary School. The majority of participants who attended were residents living nearby the proposed project site, who received notification by mail from the City. It is estimated that 80 people visited the open house and 54 solicited, written responses were collected at the event. Additional feedback was submitted to the City via email from those unable to attend the open house.

The initial public meeting had three primary objectives, which were to:

1. Introduce the project to the public
2. Explain urban agriculture and the wide variety of amenities and project types, and
3. Get feedback from the public about what type of urban agriculture would fit on this site.

A summary of this feedback was prepared and released after the open house. This feedback is summarized below:

- The site is well used as is by neighbours
- Existing values include community safety, natural space, privacy, and recreation
- Increased traffic in the neighbourhood and access to the site are major concerns
- Open and unprogrammed space is considered an asset in the neighbourhood
- Increased pest infestation, particular rats, in homes and private yards could be an outcome
- Activity on this site will disrupt rather than enhance the neighbourhood
- Urban Agriculture will primarily benefit those not living in the immediate area

Community Open House #2

A second community open house was added to the detailed planning phase after significant opposition to the project was expressed by those who attended the first open house. The event was held on September 19th, 2017, at Alice Brown Elementary School. Representatives from the City of Langley and the Institute for Sustainable Food Systems at KPU were in attendance.

The purpose was to present the public with three possible high level design options for implementing urban agriculture. Feedback collected from this event directly informed the development of a final site plan. It is estimated that 80 people attended the open house and 66 feedback forms were collected during the event. A summary of the responses below:

- 69% of respondents were not in favour of development of the site for urban agriculture
- 12% of this group would be in favour of environmental restoration or parkland development on this site, but not urban agriculture
- 29% of respondents provided feedback on the three conceptual urban agriculture options. Amenities that focused on education and building supportive relationships with neighbourhood schools were preferred.
- 12% of respondents indicated they would be in favour of urban agriculture in a different location.
4.1.3. Consultation & Public Outreach Summary

Planning for urban agriculture can be a lengthy process, involving consultation with stakeholders, special interest groups as well as members of the public. Engaging with potential stakeholders prior to the development of UA projects is a critical step because their success relies on community buy in, and capacity building at the local level.

Public outreach for the LUADP focused on sharing information with the public through community open houses, and direct email communications with members of the public. All supporting information and feedback summaries were made available on the City’s website.

The LUADP faced a number of challenges in engaging with the public with two issues having significant impacts on the outcomes of the planning process. The first issue was around the general understanding of urban agriculture and what it would mean to bring it to this hydro ROW.

A second issue was the rationale behind choosing this particular site for the implementation of a UA project in the City of Langley. Much of the concern from the public appeared to stem from preconceptions about urban agriculture, with a focus on the potential negative impacts on residents in the surrounding neighbourhood.

Challenges around communicating how UA amenities could be designed to fit into an established residential neighbourhood, and the rationale for why a UA plan was being developed for this site both impacted the perceptions of the project in the public sphere. Although the project team held open houses and made efforts to keep the public up to date throughout the planning process it was difficult to collect feedback about an urban agriculture plan. The majority of residents who attended community open houses and provided feedback via email wished to see the site left in its current state, and did not support urban agriculture in this location.

Members of the public who provided feedback about urban agriculture generally favoured:

- Limiting the scale of urban agriculture
- Education focused amenities
- Maintaining and enhancing the trail network
- Maintain emphasis on passive recreation
- Protecting and enhancing wildlife habitat
- Restoring riparian and other environmentally sensitive areas
4.2. Amenity Selection

Choosing appropriate amenities for the LUADP site involved assessment of site characteristics and current uses, listening to the community, and consultation with stakeholders. Ad hoc conversations with potential community partners also informed amenity selection.

The amenity selection process involved 3 steps, each of which employed a unique set of criteria in order to develop a list of appropriate amenities, from a large pool of possible site features. Figure 3 illustrates the three steps in the amenity selection process, the process, the criteria for each and the outcomes.

**Step 1: Project Scan & Compatibility Assessment**

The first step examined a list of UA amenities that was created by scanning existing projects from around the world, and looking at the different components. This included amenities that focused on food production, distribution, education, environmental restoration, and community development. This “amenity long list” was then assessed based on community fit and hydro right-of-way compatibility. The following guiding questions helped in this assessment:

- What amenities are not compatible with Hydro ROW compatibility restrictions?
- What amenities may not fit, considering: site accessibility, soil characteristics, natural features, existing infrastructure?
- What amenities may create conflicts with the surrounding community and current site uses, which can’t be mitigated through amenity design?

![Figure 3: Amenity Selection Process Flow Chart.](image-url)
Table 6: Amenities Eliminated from Consideration After Step 1 in the Amenity Selection Process

Table 7: Amenities Eliminated from Consideration after Step 2 in the Amenity Selection Process.
Step 3: Design Options

Design options were developed to show how amenities could be scaled to fit the site demonstrating alternative visions for urban agriculture. Design options were presented to the public at Community Open House #2.

Option #1: THE CLASSROOM

This design option focuses on education with a school garden and outdoor classroom as core amenities. This option would provide opportunities to link curriculum activities in local schools with the real life experiences in food production. There would also be an emphasis on community education with learning about the food system and related environmental issues. Close partnerships with local schools would be necessary to make this option successful.

Option #2: THE ORCHARD

This design option would develop a perennial food producing landscape that is seamlessly integrated with community use and habitat creation. The orchard would feature three distinct production areas including a tree fruit orchard, berry patch, and a food forest. These three areas are connected to naturalized areas on the site and intertwine with new and existing pathways. The perennial landscape would be designed to be productive while also enhancing the atmosphere and quality of the space as a community amenity.

Option #3: THE FARM

This design option would aim to maximize the potential for food production on the site while maintaining current uses and limiting impacts on the surrounding neighbourhood. Production areas would focus on human scale agriculture and feature both perennial and annual cropping systems. This design option would be modeled to mimic small scale, diversified farming systems and be managed through community cooperation, and an managing organization dedicated to urban agriculture.
4.3. Designing the LUADP

After completing consultation, public outreach and the various amenity selection steps the project team was able to determine the amenities that would best fit the site and community context.

Based on community feedback and internal amenity selections steps priorities were identified that would guide final concept design for the LUADP.

Recreation & Access

The site is currently well used for passive recreation. It is a priority to allow these uses to continue as the site is developed to support urban agriculture. Maintaining all existing paths and access points creates a framework for building new urban agriculture amenities on the site.

Small Scale Organic Food Production

Limiting the scale of urban agriculture in order to limit disruption in the neighbourhood, and encourage engagement and participation from the public. This was considered the best option for exploring food production on the site because of the potential for community participation, and enhancing the environment as a byproduct of food production. There is potential for this model to better respond to, and grow with the community.

Education & Demonstration

The potential to provide community education and teach people about small scale agriculture and the food system will add significant value to the community. Since many people living nearby the site have private yard space that may be suitable for producing food supporting these efforts is a priority.

Wildlife Habitat

The site currently supports a variety of wildlife species and acts as a link to the City’s green corridor network. It is a priority to maintain this function while also enhancing the quality of the habitat areas on site.

Community Connections

The potential for supporting existing community programming and activities was also considered in preparation of the final plan. Drawing on existing resources, and addressing gaps in programming could lead to greater community integration and success of the project over the long term.

Developing a Model

Finally, it was important to create a plan that fully explored the potential for urban agriculture on this site, while working within the design constraints of hydro ROW compatibility and community fit. This plan may now serve as a model for other communities who are interested in moving urban agriculture forward in their communities in a meaningful way.

With these guiding principles in mind, and the outcomes from consultation and amenity selection, the final design was prepared for the LUADP site. The resulting plan aims to strike a balance between small scale food production and the protection and enhancement of environmental assets. This maintains the activities already enjoyed by residents such as walking, cycling, and wildlife viewing. It will also create new, unique opportunities for active participation with small scale food production in public space.
5. Site Plan

The site plan developed for the Langley Urban Agriculture Demonstration Project provides a design and management strategy that would bring agriculture to the City of Langley. The plan takes a balanced approach to urban agriculture, education, environmental restoration, and passive recreation.

LUADP Vision

The vision for the LUADP is to create a functional community amenity with a shared focus on **food production, education and environmental restoration**. The plan is motivated by a commitment to small scale, organic, community based food production and demonstration. The LUADP aims to integrate farming, community life and the environment, through an innovative approach to urban agriculture in an existing residential neighbourhood.

LUADP Goals

The goals of the LUADP represent specific outcomes of the project, and where possible contribute to community development and sustainability in the City of Langley:

- Increase the production of local, healthy food
- Demonstrate small scale, organic food production
- Educate people of all ages
- Improve food literacy
- Increase biodiversity and have positive impact on the environment
- Utilize publicly owned land for community development and social innovation
- Support community connection through engagement with food production and environmental restoration

### Total Site Area

**23 Acres**

### Area Breakdown by Amenity

- **The Farm**
- **The Classroom**
- **The Orchard**
- **Entrance & Parking**
- **Pollinator Corridor**
- **Habitat Areas**
- **Buffer Planting Areas**

### Pathways & Trails

**2.5 km**

*Figure 4: Langley Urban Agriculture Demonstration Project amenity area breakdown*
5.1. Site Servicing & Infrastructure

Proposing UA amenities on vacant land can pose challenges when it comes to providing the resources and infrastructure needed to grow food successfully. Within hydro ROWs there are additional challenges to navigate in order to support urban agriculture due to possible conflicts with hydro utility equipment.

This section outlines the components that will support agricultural activities and programming. This includes adding new infrastructure, creating access to water and hydro, as well as maintaining and enhancing existing pathways.

5.1.1. Parking

Parking is required for those regularly working on the site throughout the growing season as well as for visitors and volunteers who come to the site more occasionally. A gravel parking area will be located just off the 200 St. entrance and will be designed to accommodate no more than 15 vehicles. A locked gate will restrict vehicles from entering the site during “off hours”. No private vehicles will be permitted in the site beyond the parking area. Access to these areas will remain restricted to site maintenance and BC Hydro vehicles.

Bike parking should also be provided near the site entry and parking area as well as in locations close to amenity areas.

5.1.2. Electricity Hook Up and Lighting

Creating a viable community amenity with a significant food production component may also require connection to the electrical grid. Electrical servicing at the Farm Hub may be needed to power lights, tools and possible cold storage facilities. A detailed electrical plan and cost of servicing should be prepared through a collaboration between BC Hydro and the City of Langley.

As a site that is accessible to the public for passive recreation lighting may also need to be installed along pathways and in parking areas as a public safety measure.

5.1.3. Toilets

Toilets must be provided on the site for those who are working in production areas or visiting the site for education or recreational activities.

A pit toilet design, commonly used in parks, is the most appropriate for this site to avoid the additional costs of establishing a sewer connection. A pit toilet consists of a dug, and lined pit, typically 1-2m deep, with a shelter constructed above. In British Columbia Leko Precast Ltd. is a supplier of pit toilets, including shelter, vault (pit) and all interior fixtures. The pit toilet will be located in an area where it can be easily accessible and does not conflict with other uses or the surrounding neighbourhood. A handwashing station should also be provided at in the pit toilet area.

5.1.4. Pathways

The LUADP site in embedded in a residential neighbourhood and facilitates passive recreation as a primary use. Users are able to access the site through the surrounding neighbourhood and from nature trails along Muckle and Pleasantdale Creeks. Maintaining existing access, connectivity and circulation on the site are both high priority.

All existing pathways will be maintained including the main pathway running the length of the site that is used by BC Hydro maintenance vehicles, including full sized line trucks. In addition to the existing pathways new pathways will be created connecting new amenities.

5.1.5. Water Access

Access to a clean and abundant source of water is necessary for urban agriculture projects. In many cases connecting to municipal water sources is ideal because it provides a source of potable water that can be used to irrigate crops, clean produce, and for sanitation (i.e. hand washing). For the LUADP a connection to
municipal water will be made at the 202 St. ROW. It is recommended that the City of Langley install a 50 mm central water hook up at this point for the LUADP at an estimated cost of $10,000.00.

Overhead irrigation is restricted in hydro ROWs. Additionally, metal pipes and fixtures can create potential induction and shock risks. The LUADP should install drip irrigation. These systems are commonly used for small scale, farming operations because of their relatively low cost, and efficiency. Components of these systems are primarily made of plastic, and are therefore compatible for use in a hydro ROWs.

The intensity of irrigation will vary depending on weather conditions, and the types of crops grown. There must be a clear agreement with the City of Langley regarding water use and any possible restrictions that might impact agricultural operations.

Once production areas are established an evaluation of water use should be conducted to better understand how much water is required for food production and other uses. Installing water meters for various production areas will provide the necessary information for drafting this agreement.

5.1.6. Signage

Incorporating unique and effective signage will provide information for visitors about the agricultural and ecological systems at work on the site. Signage is also a key component in establishing a unique identity for the project as a hub for urban agriculture, and education in the community and the region. There are three types of signage that should be incorporated to enhance the experience of the LUADP and ensure the safety and security of visitors. These signage types include wayfinding, amenity identification, and educational.

Designing and creating signage for the site can present a unique opportunity for engaging with community partners and with the public, and to foster community identity. The need for multilingual signage should be assessed as signage should design to be accessible to all those living in the community.

Wayfinding Signage is primarily directional, indicating where different amenities are located. It can also show visitors how the site fits into the broader community context.

Amenity Identification Signage can show the unique features of the site as well as their function (education, production, environmental) and the connection to other site amenities.

Educational Signage provides in depth information about the systems at work on the site, and highlights unique features.
5.2. Non-Production Amenities

Non-Production amenities include all those amenity areas that support but do not directly contribute to food production, or education. These areas feature habitat enhancement, native plantings and are advancing the vision and goals of the project.

**Non-Production Amenities:**
- Buffer Planting Areas
- Habitat Areas
- Pollinator Corridor

**Opportunities:**
- Increased biodiversity
- Enhanced wildlife habitat
- Provisioning ecosystem services
- Maintaining privacy for surrounding properties
- Maintaining natural character of the site
- Providing pollinator habitat and facilitating pollinator education
- Removing and reducing the spread of invasive species

5.2.1. Buffer Planting Areas

Buffer planting areas perform important functions for the site and for the surrounding community. They maintain the “naturalized” character of the site, and create physical buffers between active and passive areas of the site and between public space and private space.

Once buffer plantings are established the most intense maintenance will be required in the first 2-3 years to irrigate new plantings and control weeds. Overtime these areas will naturalize and require less maintenance. Controlling invasive species on the site will be an ongoing task.

Plant material for buffer planting areas, and all non-production amenity, is available through a local sources including NATS Nursery Ltd. and Cedar Rim Nursery Ltd.

5.2.2. Habitat Areas

With an extensive network of parks and open space in the City there is an abundance of wildlife, many of which can be seen on the site. This includes: birds, rabbits, mice, coyotes, and deer. Community members value this space as a natural refuge within the city and cited “wildlife viewing” as an important activity to support.

Riparian areas and a wetland area will be incorporated into the design of the LUADP to enhance the habitat value of the site and support local wildlife populations. Habitat areas will feature native plants and be developed to mimic native habitat that may have been lost in development of the hydro ROW, and control the spread of invasive species. They will also contribute a variety of ecosystem services that contribute to agricultural productivity, and to human health.

On the LUADP site areas designated for habitat enhancement may not be suitable for urban agriculture due to slope, proximity to ecologically sensitive areas, and poor drainage.

Existing Muckle and Pleasantdale Creek riparian areas that connect to the north edge of the site are recognized ecologically sensitive. These waterways connect the site to the Nicomekl River greenway that bisects the City. Riparian areas are transition areas between land and rivers or streams. The vegetation in these areas usually grows well in wet conditions and is critical for protecting water quality by reducing erosion, and filtering pollutants.

Wetland areas are also can also provide increase infiltration of rainwater, reducing runoff in addition to providing refuge for birds and insects.

Urban agriculture sites, especially those developed in dense urban areas, have demonstrated the potential for achieving a number of positive ecological outcomes. With a focus on small scale food production, and both annual and perennial crops these sites can support a wide variety of local wildlife.
5.2.3. Pollinator Corridor

The pollinator corridor is specifically designed to attract and support a diversity of wild pollinators including; bees, butterflies, birds, and insects. These garden areas would be planted with native and non-native species. The first year of maintenance is critical when establishing the pollinator corridor. Regular irrigation and hand weeding will be required to ensure that plants are successfully established and not out competed by invasive species. Once established, maintenance will be relatively low and the corridor will contribute ecosystem services, while also being aesthetically pleasing.

The Langley Environmental Partners Society (LEPS) have worked with the City of Langley on “pollinator pastures” and corridors in other areas. This type of work is also ongoing in other Metro Vancouver municipalities. Existing projects and resources could provide support in the development of a corridor, or “pollinator pasture” within a hydro ROWs.

Pollinator hedgerows will also be integrated into crop production areas to encourage pollination of crops. This will also help to create an extensive network of pollinator and wildlife habitat across the site.

Table 8 shows a sample of native and non-native plants that could be incorporated into the pollinator corridor and hedgerows. These plants have a diversity of flowering times and colours, and will be easily maintained with the vegetation height restrictions of hydro ROWs.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Native Plants</strong></td>
<td></td>
</tr>
<tr>
<td>Red Columbine (<em>Aquilegia canadensis</em>)</td>
<td>0.6m</td>
</tr>
<tr>
<td>Pacific Bleeding Heart (<em>Decenter Formosa</em>)</td>
<td>0.4-0.6m</td>
</tr>
<tr>
<td>Pacific Aster (<em>Symphyotrichum chilense</em>)</td>
<td>1.5m</td>
</tr>
<tr>
<td>Fireweed (<em>Chamaenerion angustifolium</em>)</td>
<td>0.5-2.5m</td>
</tr>
<tr>
<td>Nootka Rose (<em>Rosa nutkana</em>)</td>
<td>0.6-3m</td>
</tr>
<tr>
<td>Wild Strawberry (<em>Fragaria vesca</em>)</td>
<td>0.2m</td>
</tr>
<tr>
<td>Western Yarrow (<em>Achillea millefolium</em>)</td>
<td>1m</td>
</tr>
<tr>
<td>Little Larkspur (<em>Delphinium bicolor</em>)</td>
<td>1m</td>
</tr>
<tr>
<td><strong>Non-Native Plants</strong></td>
<td></td>
</tr>
<tr>
<td>Dwarf Wild Rose (<em>Rosa acicularis</em>)</td>
<td>0.5m</td>
</tr>
<tr>
<td>Dwarf Sunflower (<em>Helianthus annuus</em>)</td>
<td>0.6-1m</td>
</tr>
<tr>
<td>Butterfly Bush Milkweed (<em>Asclepias tuberosa</em>)</td>
<td>0.7m</td>
</tr>
<tr>
<td>Black Eyed Susan (<em>Rudbeckia hirta</em>)</td>
<td>0.1-0.4m</td>
</tr>
<tr>
<td>Miniature Lupine (<em>Lupinus bicolor</em>)</td>
<td>0.0.4m</td>
</tr>
<tr>
<td>Wild Bergamont (<em>Monarda fistulosa</em>)</td>
<td>1-2m</td>
</tr>
</tbody>
</table>

Table 8: Pollinator Corridor and Hedgerow Sample Plant List.

This pollinator habitat was created on a 2.6 acre park beneath hydro transmission lines in the City of Richmond. Researchers and students from Emily Carr University of Art + Design collaborated on the project as did local seed house West Coast Seeds. Emily Carr contributed public art and site features including a “bee hotel”. Local schools also contributed by growing 600 sunflower seed that were planted in the pasture in 2015. The pollinator pasture replaced 120 pine trees planted in the ROW years earlier and has become a low-maintenance landscape treatment. 38
5.3. Production Amenities

Production amenities include all those amenity areas that contribute directly to food production and education on the LUADP site.

Production Amenities:
- The Farm
- The Classroom
- The Orchard

5.3.1. The Farm

The Farm is a proposed production amenity with systems and infrastructure that supports other food production and educational amenities on the site. Production will be small scale with about 1 acre in annual vegetable production using organic methods.\(^9\)

Production elements include, annual cropping areas, public produce gardens, and cut flower gardens. The Farm will also features infrastructure including irrigation, equipment storage, composting, and a produce washing area.

Opportunities:
- Demonstrating small scale, organic vegetable production for urban areas
- Demonstrating the potential for food production on similar sites
- Improving access to healthy, fresh, local food
- Improving food literacy by connecting urban residents to agriculture and food systems
- Facilitating community education
- Volunteer opportunities for youth and community members
- Employment in the local food and community development sectors
- Social capital building
- Enhancing soil fertility and ecological health

Illustration 4: View of Farm Hub, walking trails and habitat area.
The Farm Hub

The Farm Hub will focus around a small, non-permanent building used to store tools, equipment, and produce. An outdoor produce washing area will be located adjacent to the building. Based on restrictions for non-permanent structures within hydro ROWs the building should not exceed 3.6m in height and have a floor area no larger than 36m². Construction should not use of metallic materials. Water access will be required at this location for sanitation and produce washing.

Space for meetings and other site planning activities off site may occasionally be needed. Schools, community centres or municipally owned building are all possible locations.

Produce storage needs will depend on what types of crops are grown and how they are distributed into the community. The space required should be determined when a more detailed crop plan, and distribution plan has been finalized. Some cold storage may be needed.

Illustration 5: Elevation of Farm Hub.
**Annual Cropping Areas**

Annual cropping areas are dedicated to growing annual vegetables, using organic production methods. These areas will be designed with the infrastructure necessary to grow a variety of annual crops. This plan does not include recommendations on the types of crops that should be cultivated as this will be determined by the farm manager based on site conditions and community need. The amount of food produced on the site annually will also be dependent on a variety of factors such as the crops that are grown and the intensity of cultivation.

Production beds will be standardized as much as possible measuring 1m (3.2 ft.) in width with 0.5m (1.6 ft.) pathways between each bed. There will be some flexibility in this configuration as it may be necessary to provide wider pathways in areas where children or volunteers are gardening.

**Public Produce Gardens**

To maximize community engagement public produce gardens will be designed to be cultivated by the public. These areas will be distinct from annual cropping areas, feature additional signage instructing people on what, when and how to harvest. The types of crops planted here may also be different. Some considerations for public produce gardens include:

- Plant short season crops that are easy to harvest such as: lettuce, radishes, kale
- Plant crops in succession to there is continual harvest throughout the growing season
- Create trellises for climbing crops (i.e. beans and pea) to make harvest easier
- Avoid crops that are highly susceptible to pests and disease
- Avoid crops that take up a lot of space and are challenging to harvest (i.e. winter squash, tomatoes)
- Create wider paths between production beds

**Illustration 6:** View of Annual cropping areas and pathways
Cut Flower Gardens
Cut Flower Gardens will increase the biodiversity on the site while also adding aesthetic value for to the farm area and to the site overall. Cut flowers can also provide an additional source of revenue for urban farms, while also being a crop that can be easily harvested by the public. Cut flower beds will vary in size and can be integrated into food crop production areas.

Tools and Equipment
Production areas on the LUADP can be primarily managed using hand tools with limited mechanization. Focusing on hand tools for field work will also increase the accessibility for volunteers, especially children, to participate in farming activities.

A walk behind tractor with various implements (rototiller, bed shaper, mower etc.) will be appropriate for the scale of production but should only be operated by individuals who are properly trained. In some special cases a tractor may be required for larger scale field work or site maintenance. Agreements for equipment sharing or rental should be arranged in cases where large machinery is required.

Staff and volunteers can easily move between production areas on foot, using wheelbarrows to carry tools and produce.

Composting
A compost area should be located near the Farm Hub so it can be more easily accessed and maintained. A three compartment composting system is recommended based on the scale and restrictions on the LUADP. This type of composting system is commonly used for small scale urban farming. It is estimated that with three composting compartments each 3m x 3m this system will be able to process 3000-4000kg of garden waste every 6 months, producing about 3000 kg of finished compost per year. 41 Composting is an important consideration for farming at any scale. Composting garden waste limits the loss of nutrients and adds organic matter, micro-nutrients and beneficial microorganisms to the soil. Urban Agriculture faces unique challenges when it comes to effectively managing waste and making compost. UA sites may not have space to make enough compost to meet their needs. Unpleasant odours are often of concern, however if managed properly, a compost pile, especially one that does not contain any fatty material (i.e. oils) or animal products (i.e. animal manure, meat products, or dairy) should not smell.
5.3.2. The Classroom

The Classroom will an area dedicated to educational programming. There are different elements that will have the flexibility to serve a variety of user groups. Micro-production plots, and raised beds provide dedicated garden space for learning and demonstration. Connecting directly to curriculum programming through local schools, will animate this amenity and support ongoing programming and maintenance.

The LUADP site is located in close proximity (walking distance) to several schools such as Simmonds Elementary, Alice Brown Elementary and H.D Stafford Middle School. This presents an opportunity to link to existing outdoor education, and sustainability curriculum, and to develop additional farm based programming in partnership with local students and teachers. Local schools, and the school board should be approached as potential strategic partners for the LUADP.

Opportunities:

- Hands on learning for students of all ages
- Support existing outdoor education and sustainability programs in local schools
- Improve food literacy amongst students, and in the community
- Collaboration between schools and students of different ages
- Summer programming including camps and youth internships
- Increase access to healthy, local food to be consumed in schools
- Facilitating community education
Micro Production Plots

Micro production plots will provide space for students to engage in crop production at a scale that is more conducive to experimentation and learning. These garden areas would be planned and cultivated by students. A separate tool shed should be located close to these beds to keep tools and equipment separate from the other production areas.

These plots will be used regularly by students during the school year, from September – June. It will be important to design and plan with this consideration in mind. Some strategies for establishing micro-production plots that can support classroom curriculum include:

- Provide classes or student groups with 3.5-4m² of garden space each
- Allow classes to personalize their garden space
- Plant long season crops in spring that will be ready for harvest in the fall
- Plant spring crops early (and indoors) so they can be planted and harvested early

Located in Birmingham Alabama, Jones Valley Teaching farm now operates 7 teaching farm sites. Instructors align programming with curriculum in math, science, social studies and English. With a variety of school yard sites students have the opportunity to engage with farm based learning through high school in some cases. The sites feature a variety of amenities, including: annual vegetable production, raised beds, outdoor classrooms, tool storage and sensory gardens. 42
Raised Beds

Raised beds serve a variety of purposes in UA projects. They can increase accessibility, provide areas for teaching and demonstration, increase drainage, or deal with contaminated/marginal soils.

Raised beds can be made using a variety of materials, many of which are inexpensive and easily accessible. Commonly used materials include: metal, concrete blocks, bricks, and naturally rot resistant woods like cedar or redwood. In the context of the LUADP, non-pressure treated cedar is an ideal choice for the construction of raised beds.

When constructing raised beds on top of existing soil the ideal depth of the bed is between 0.2 m and 0.3 m. The distance to the center of the bed should be no more than 0.4 m, and this distance may need to be slightly smaller if the beds are primarily being used by children. The distance between the raised beds should be between 0.6 m and 1 m to accommodate groups of students.

Flexible Seating

A limited amount of flexible seating should be provided to accommodate groups of up to 15-20 students. In addition to fixed seating open spaces can also provide opportunities for group instruction and hands on learning.

The most appropriate material for seating and other site furnishings for the LUADP is wood. Tree stumps and logs that are embedded in the ground, so they can not be moved are ideal in this case.
5.3.3. The Orchard

The Orchard is all areas for the production of locally suited perennial crop varieties. This includes tree fruits, nuts and small fruits (i.e. berries). In order to adhere to BC Hydro compatibility restrictions perennial crops, like all other vegetation, should be maintained at a maximum height of 3m. Tree crops should be purchased on dwarf root stock to make pruning and management easier.

The Orchard areas will be carefully managed for production but also have the potential to support high levels of biodiversity, create wildlife habitat and enhance community amenity space. The community orchard model has been implemented in different communities as a way to connect efforts to improve and animate public space while also addressing food security and other sustainability challenges. On the LUADP site orchard areas are open and accessible to the public for walking, and harvesting.

Opportunities:

- Demonstrating perennial crop production for urban areas
- Facilitating community education in perennial crop production, and orcharding
- Increased biodiversity
- Enhanced wildlife habitat
- Gleaning of fruit, nuts and berries
- Increasing the availability of locally suited orchard stock

Illustration 9: View of Production Orchard, pollinator corridor, and existing pathway.
Demonstration Orchard

The demonstration orchard is an area for education and experimentation in perennial crop production at the small, urban scale. This area differs from the block planting scheme in the production orchards and features a more diverse mix of perennial crop varieties. This area will also be a place to experiment with unusual varieties and to test the hardiness of varieties for the climate and site conditions.

Production Orchards

The production orchard areas located around the site contribute to production diversity, and facilitate community cultivation. Fruit trees should be on dwarf root stock to make it easier to maintain the mature trees in accordance with the maximum height requirements within the hydro ROW. Small fruit varieties will also be incorporated and should also be maintained to a maximum height of 3m.

Tree and small fruit crops will come into full production in 3-5 years with some production as the orchard is being established. In addition to the production of perennial food crops the orchard can host workshops to educate the public on how to care for a variety of edible trees and shrubs.

These production areas will be managed by production staff and community volunteers. Local schools could also be recruited to volunteer in perennial production areas.

Table 9 provides a list of different perennial crops that could be grown on the site. Based on the space allocated for perennial crops, numbers represent the maximum number of plants that could be cultivated on the site.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Number of Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit Trees</td>
<td></td>
</tr>
<tr>
<td>Apples</td>
<td>60</td>
</tr>
<tr>
<td>Apricots</td>
<td>20</td>
</tr>
<tr>
<td>Cherries</td>
<td>45</td>
</tr>
<tr>
<td>Peaches</td>
<td>10</td>
</tr>
<tr>
<td>Pears</td>
<td>20</td>
</tr>
<tr>
<td>Plums</td>
<td>25</td>
</tr>
<tr>
<td>Nut Trees</td>
<td></td>
</tr>
<tr>
<td>Hazelnuts</td>
<td>10</td>
</tr>
<tr>
<td>Heartnuts</td>
<td>5</td>
</tr>
<tr>
<td>Walnuts</td>
<td>5</td>
</tr>
<tr>
<td>Total Number of Trees</td>
<td>200</td>
</tr>
<tr>
<td>Small Fruits</td>
<td></td>
</tr>
<tr>
<td>Blackberries</td>
<td>80</td>
</tr>
<tr>
<td>Blueberries</td>
<td>60</td>
</tr>
<tr>
<td>Currants</td>
<td>18</td>
</tr>
<tr>
<td>Gooseberries</td>
<td>18</td>
</tr>
<tr>
<td>Haskaps</td>
<td>40</td>
</tr>
<tr>
<td>Raspberries</td>
<td>80</td>
</tr>
<tr>
<td>Salmon Berries</td>
<td>40</td>
</tr>
<tr>
<td>Saskatoon Berries</td>
<td>40</td>
</tr>
<tr>
<td>Total Number of Small Fruits</td>
<td>376</td>
</tr>
</tbody>
</table>

Table 9: Perennial crop varieties for the LUADP site.

Copley Community Orchard is an urban orchard located in Vancouver, British Columbia. It is a place to celebrate the benefits of growing fruit trees, berry bushes and other perennial plants, educating people on their cultivation, and creating a beautiful and productive space accessible to all. In June, city council approved a $15,000 grant to EYA for the project, as part of $110,000 in community urban agriculture and neighbourhood food security grants.

Image Source: Copley Community Orchard, Vancouver BC
6. Management Plan

For UA projects, consideration of day to day operations, and long term management is critical. A management plan for urban agriculture should acknowledge input from multiple stakeholders, and draw on existing community capacity and directly addressing local needs.

Management Questions to Consider:
- Who will be the primary stakeholders involved in management of the project?
- How will these stakeholders work together to manage the project over the long term?
- What resources (biological, physical, social, etc.) are required to support the project?
- How will site elements interact with existing community programming and activities?

6.1. Stakeholders

UA projects are managed by individuals, non-profit organizations, or a combination of stakeholders. Given this diversity, the governance structure of UA projects varies based on the stakeholders involved, and on the amount of community capacity available.

For the LUADP, main project stakeholders include: Non-Profit Society (operations and amenity management), the City of Langley (land owner), and BC Hydro (utility manager). The governance model proposed focuses on building a supportive relationship between these groups, and creating additional capacity within the community.
6.1.1. Non-Profit Society

A new Non-Profit Society (the Society) should be created to manage and coordinate day to day operations on the site including all food production components. Managing a site with productive agriculture elements requires skilled individuals with knowledge about small scale food production, and the capacity to engage with the community around agricultural and environmental issues.

The Society must also have strong ties to the community, and will be governed by a volunteer steering committee. This committee will have representation from the agricultural sector, from government, and from the community.

**The Non-Profit Society will be responsible for:**

- Developing a Site Use Agreement in collaboration with other management stakeholders
- Ensuring conditions of the site agreement are adhered to by all visitors and community partners
- Hiring farming and programming staff
- Managing all agricultural components
- Creating annual reports that include reporting on public engagement, financing, production and community impact
- Maintain open channels of communication with the public about farming activities and programming on the site
- Allocating space to local schools or community groups for production and ensuring that these areas are well maintained
- Recruiting and managing volunteers
- Coordinating programming on site with individuals and community groups, including local schools
- Offering educational tours of the site for community members, groups and visitors from across Metro Vancouver

The Beacon Food Forest is located in the Beacon Hill Neighbourhood of Seattle. The goal of the Beacon Food Forest is to bring the diverse community together through a permaculture approach to urban farming. The approach to management is also unique. The project sits on land that is publicly owned, and a volunteer group that has now become a registered non-profit society. Some administration support is also provided by City of Seattle staff through the P-Patch Community Garden Program.

**Non-Profit Society Steering Committee**

The Steering Committee should meet regularly to discuss the project, make decisions about operations and programming and address any challenges or grievances from the community. The Committee will also develop an action driven charter which outlines the Steering Committee’s mission, responsibilities, scope of influence, and deliverables.

**Steering Committee Membership include:**

- 1 Local government representative
- 1 Farm Manager
- 2 Community representatives
- 1 BC Hydro representative
- Community partner representatives
6.1.2. City of Langley

The City of Langley will continue to work closely with other management stakeholders offering servicing, and programming support. In addition to a dedicated City liaison on the Steering Committee, various municipal departments could also be engaged management and operations of the LUADP, depending on the nature of the support work needed.

The City of Langley will be responsible for:

- Develop a Site Use Agreement in collaboration with other management stakeholders
- Provide non-agricultural site maintenance support (i.e. pathway maintenance, mowing)
- Install and maintain water servicing
- Assist in dealing with site use or community conflicts
- Review operational budgets
- Assist in securing financing to support ongoing work when possible
- Provide support for programming including; advertising, staff and resources
- Help recruit and coordinate volunteers through established community networks
- Help promote events and activities taking place in the site

6.1.3. BC Hydro

BC Hydro participates in the development of compatible uses for hydro ROWs in order to maintain access to utility work, and protect public safety. The role of the BC Hydro will be an advisory one, consulting on all operational decisions and long term management.

BC Hydro will be responsible for:

- Review and approve final detailed plans for site development with conditions as required
- Provide a compatible use agreement consenting to uses within the ROW area
- Review and approve any proposed changes to the approved plans (new programming and activities)
- Consult with the Society on proposed changes or major works on the site

6.1.4. Community Partnerships

UA projects are strongly focused on community development and public education requiring significant human resources often drawing on existing community capacity. The likelihood for success can be increased in many cases by leveraging existing community resources in a variety of forms, including: financing, knowledge, and labour. It can also be advantageous to connect to ongoing work in the community, to ensure that the project can be impactful and not take away from the impact of other initiatives.

The City of Langley is a small municipality with an active citizenry. Ongoing social programs, public education efforts and sustainability initiatives all present opportunities for integration with the LUADP. This section outlines ongoing work that could support development of the LUADP, and recognizes potential community partners.

**Langley Environmental Partners Society (LEPS)**

With a mandate to support environmental sustainability through public education and partnerships, LEPS should be approached as potential partners for the LUADP both in implementation phases and long term management. 46

In the City of Langley there are existing community garden projects managed in partnership with the City, Langley Environmental Partners Society (LEPS), and by local schools. LEPS also manages a Demonstration Garden at the Derek Doubleday Arboretum nearby in Langley Township where educational programs focus on backyard gardening and environmental sustainability. 47 Assets that LEPS could bring to the LUADP include:

- Experience doing restoration work in riparian areas and hydro ROWs
- Ongoing work engaging the public, and youth in environmental work
- Experience managing community gardens in the City and Langley Township
• Experience establishing pollinator gardens with the City, and BC Hydro
• Ongoing work and active programming throughout the community

Local Schools and School District (SD35)

Local schools present another potential resource for collaboration on the LUADP. Connecting with schools could expand educational programming as well as providing additional volunteer labour to support food production. The project site is located within walking distance of local schools, including: Simmonds Elementary, Alice Brown Elementary and H.D. Stafford Middle School. It is also accessible to other SD 35 schools in both the City and Township of Langley. Assets that local school could bring to the LUADP include:

• Existing outdoor education programming
• Access and coordinate youth volunteers for implementation and maintenance
• Connect to sustainability and health related initiatives in Langley Schools i.e. Healthy Schools Program, Green Team

6.1.5. Engaging the Public

The public also has an important role to play in supporting the development and management of the LUADP. Active and ongoing public engagement is critical to ensure that the project continues to fit the community context and meet local needs.

Members of the Public will be able to engage with the LUADP through:

• Ongoing volunteer opportunities
• Sitting on the project Steering Committee
• Purchasing food grown on the site from the farm gate or the farmers’ market
• Participating in “workbees” and community cultivation events
• Harvesting from public produce gardens
• Passive recreation on the LUADP site

Other potential project partners:

Environmental:
• Evergreen BC
• Environmental Youth Alliance
• Langley Field Naturalists
• Pollinator Partnership Canada
• Pollination Ecology Lab at SFU
• Nickomekl Enhancement Society
• Local First Nations

Education:
• Farm to School BC
• Fresh Roots Urban Farm

Health and Nutrition:
• Fraser Health
• Langley Community Harvest Program (managed by LEPS)
• Langley Food Bank
• First Nations Health Authority

Food and Agriculture:
• Farm Folk City Folk
• KPU Sustainable Agriculture
• KPU Farm School Programs
• Langley Community Farmers Market
• Langley Sustainable Agriculture Foundation

Community volunteers plant and mulch new fruit trees at the Copley Community Orchard site in East Vancouver.
6.1.6. Governance Model

The most appropriate governance model for urban agriculture projects is determined by the capacity of stakeholders, and local context. In most cases managing and regulating UA projects falls to local governments, even if they are not involved directly in operations.

A governance model should express and refine a shared vision for the project, while also enhancing the long term plans for implementation and management. The stakeholders involved should also be able to aggregate resources and act to advance the projects mandate. With no available blueprint for managing urban agriculture it can be helpful to look to other successful projects for guidance or to draw on existing capacity and expertise in the community.

In the case of the LUADP, the Non-Profit Society will be the entity in charge of managing day-to-day operations. Success will also require engagement with community partners, local government, and the public.

Figure 5 shows the governance model for the LUADP demonstrating the level of coordination required amongst stakeholders and partners. The arrows demonstrate the flow of resources connected to the project, which can be either funds, expertise, in-kind support, or services. Stakeholders with “advisory” roles will be involved in high level decision making, determining project direction, and providing feedback. On the “operational” side, stakeholders will be directly involved in site operations, and program development on the project site. Funders and community partners that will support the project have yet to be confirmed.

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Figure 5: Proposed Governance model for the LUADP.
6.2. Operations

The operational strategy for the site aims to develop amenity plans while preserving accessibility and recreational uses. Planning for daily operations must involve the consideration of the scale of production, distribution of farm products, and management of personnel.

6.2.1. Scale of Production

The LUADP has been designed to balance food production and educational amenities with diverse habitat areas, and opportunities for passive recreation. With this approach, the scale of food production on the site is limited and these amenities have been concentrated around central infrastructure, including equipment storage and water access.

In total there is about one acre of annual crop cultivation space on the LUADP site. In addition, these are also 2.5 acres of the site have been designated for perennial crops including fruits, nuts and berries. Based on community need it may be possible to increase the scale of production over time, however the site will operate more efficiently if main production elements remain small in scale and concentrated around infrastructure such as, water, storage, composting and produce washing areas.

Production Practices

Urban agriculture projects may limit the scale of production in order to achieve other outcomes, such as elevating the quality of public space, social cohesion, environmental restoration, or public education.

The following principles will guide the production practices for the LUADP that can ensure the project achieves desired outcomes and is compatible with the.

- Manage production areas using organic production methods in accordance with Canadian Organic Standard
- Choose crop varieties that reflect the needs of the community, including culturally appropriate foods if applicable
- Promote the harvest of ripe fruit on a regular basis through signage and community bulletins
- Provide ongoing educational opportunities for the public to learn about production techniques used on site
- Ensure that food production activities contribute to biological diversity and support a healthy environment
- Collect regular feedback from site users about food production on the site
6.2.2. Distribution

UA projects can be successful farming enterprises because they are located close to residential populations. Based on this proximity urban farms can access a variety of distribution channels for selling their farm products.

Different Options described in this section can be explored by the LUADP and decisions about what is produced and how products are distributed should be evaluated on an ongoing basis. It is recommended that the LUADP experiment with a combination of distribution methods of farm products throughout the growing season.

The main products produced on the LUADP site will be fruits and vegetables produced in spring, summer and fall seasons. Production will support the community with a supply of healthy, locally produced food and the sale of farm products will also financially support farm operations by reinvesting revenue into the project.

Community Cultivation

Making arrangements with community volunteers to work in exchange for access to farm products is a good way to encourage community engagement and to ensure that what is grown on the farm is accessible to and used by people living in the community. For the LUADP these opportunities should be coordinated by the Society. It is also important that these opportunities are open and accessible to all members of the public, not just immediate neighbours. This type of exchange could be arranged on an individual volunteer basis or through community work events (i.e. “workbees”). Community work events are often useful when there is a significant amount of work to do in a short period of time (i.e. transplanting, or crop harvest).

Community cultivation can also be facilitated by planting areas that are specifically designed to be freely accessible to the public. This is a more informal way to engage the public, and can encourage people to learn more about local food production. Establishing an area dedicated to community cultivation requires clear signage and communication with the public to ensure that crops are harvested at the right time, and without causing damage.

Food Banks and Gleaning Programs

As a community asset the LUADP has the potential to support ongoing community programming related to improving access to locally produced, healthy food. In addition to other distribution channels the scale of production on the site could also support community harvesting for food banks and other community service organizations. Harvesting for local food bank would be coordinated by the Urban Agriculture Society with labour provided by staff and community volunteers.

Gleaning programs also represent another strategy for harvesting and distribution that engages local volunteers and ensures that food makes its way into the local community. These programs are commonly established to harvest perennial food crops in urban areas that may otherwise go unpicked. In the case of the LUADP this would involve recruiting volunteers to ensure that production areas are kept clean and tidy and that all edible food can be harvested and used in the community.

Community Connection

Langley Environmental Partners Society manages a Community Harvest Gleaning program where volunteers identify and harvest fruit from trees and bushes around the community which would otherwise be left to fall. The infrastructure and interest in this program could also support community harvesting on the LUADP site, especially in orchard and perennial production areas. Similar gleaning projects operate in communities in Metro Vancouver. 50
Institutional Procurement
Local public institutions present another opportunity for distribution of farm products from the LUADP into the community that could support outcomes related to health and education. Establishing supportive relationships with institutions, including local schools, could provide hands on learning opportunities for students and help get healthy, local food into schools.

Traffic and parking will both be important considerations when people are coming to the farm site to buy produce. It is recommended that clear open hours be posted and followed to minimize disturbance of the surrounding community.

Farmer’s Markets
Farmer’s markets can provide an opportunity for farm products to be sold directly to consumers generating weekly revenue that can be reinvested to support ongoing farm operations. Farmer’s markets provide a good opportunity for small scale and community based farming because the barrier to entry is relatively low, and there is an existing customer base to tap into. There are also opportunities to build support and awareness for the project outside of the immediate neighbourhood and connect to the existing local food scene in the City of Langley and surrounding areas. Transportation and staffing can be challenges associated with pursuing farmers’ markets as a distribution channel which could limit the potential for the LUADP to participate.

Community Connection
The Langley Community Farmers’ Market is already established in the community taking place year round (once a month during winter months). This existing farmer’s market in the community presents an opportunity to tap into an existing market generating revenue and support for the project. 

Farm Gate Sales
UA projects are embedded in existing communities and often provide unique opportunities to improve access to fresh local food for residents. “Farm gate” sales represent an opportunity to distribute products to the people living in communities close to where the farm is located. Selling products directly from the farm site also provides a unique opportunity for local people to visit the site, meet the farmers and make a direct connection between the food they eat and the land where it is grown, which is a driving force behind the growth of the local food movement.
6.2.3. Human Resources

As a community amenity, the LUADP will be a place for the public to experience and participate in small scale, organic farming. This will require considerable human resources including paid staff with small scale, organic farming experience. Support from volunteers will also be required to maintain the site and manage production areas.

Paid Staff

The non-profit society will be responsible for hiring staff that will manage site operations and help to facilitate educational programing. In addition to operational staff operations it is also recommended that the LUADP be supported by a volunteer and programming coordination that can allow for public engagement to be managed separately from agricultural operations.

The following paid positions should be secured to manage operations on the LUADP:

- Farm Manager 1 FTE (Feb-Nov)
- Farm Hands 1 FTE (Apr-Nov) could be divided into 2 PT positions
- Student Interns 0.5 FTE (June-Aug)
- Volunteer and Programming coordinator .25 FTE (year round)

Volunteers

There will be a variety of volunteer opportunities available through the LUADP that will make significant contributions to the success of the project and integration into the community. However, working with volunteers requires special considerations to ensure that the work is fulfilling (so people want to come back), and that volunteer contributions have a positive impact on the management and operations of the site. Volunteers with farming experience will be an asset to the project but will not be required.

The LUADP will create several different volunteer opportunities, including:

- Steering Committee Members
- Youth volunteers
- Ongoing/ regular volunteers
- Group volunteering and “work bees”
- Workshares (working in exchange for farm products)

Although significant human resources are required to support UA projects the number of people actively farming on the site is usually limited due to the scale of production.

6.3. Management

Long term management is often a significant concern when food production is proposed for public spaces. It is common for public sector partners to be concerned that maintenance will fall on the shoulders of often already overburdened municipal departments.

Members of the public also worry that additional pressure on municipal staff may lead to an increased tax burden. Site aesthetics and impact on property values and existing activities are also common. These concerns are all legitimate, however there is ongoing work to acknowledge and work through these challenges creating beautiful and productive public spaces.
6.3.1. Site Use Agreement

When UA projects are initiated, formal agreements between project stakeholders is critical. These agreements should consider the type of production taking place on the site, and also allow for the full range of activities and programming associated with project that may include: production, education, processing, and even distribution of products.

The site use agreement for the LUADP will be created through multi-stakeholder collaboration, and will be subject to regular review by these stakeholders. The agreement should clearly address the following topic areas, answer the guiding questions, and meet the objectives of all stakeholders:

Land Tenure
- How long can the land be used for UA?
- Is any remuneration required for use of the land? Are services provided on that land?
- Are there any conditions attached to this agreement for using the land?

Electric and Magnetic Fields Monitoring
- Should EMF levels be monitored over time?
- Who is responsible for measuring and monitoring EMF levels?
- What kind of public education is necessary regarding EMF levels and public health?

Ongoing Soil Health Monitoring
- Where should additional soil testing be conducted prior to site development?
- How often should soil test be conducted?
- Who is responsible for soil testing, and monitoring soil health?

Site Aesthetics
- What aesthetic are the aesthetic and cleanliness standards for the LUADP?
- Who is responsible for monitoring and enforcing these standards?
- How and where can people communicate issues with site aesthetics, or maintenance?

Public Access and Security
- Are there any areas of the site where public access is restricted?
- Where can vehicles access the site, and where are they permitted on the site?
- What are the protocols for securing infrastructure and assets on the site?
- How will theft and vandalism be dealt with?

Production Activities and Techniques
- Are there any exceptions to the organic production practices used on the site?
- What are the guiding principles for the use of organic production methods?
- What types of tools and equipment are permitted for use on the site?
- Is there any restrictions on when farming activities or the use are machinery is not permitted?

6.3.2. Management Objectives

Successfully managing the LUADP will require coordination with a variety of stakeholders, including members of the public. The City will be a key stakeholder, but may or may not be directly involved in daily management and operations of the site. BC Hydro is also a key stakeholder, and should be consulted in the development of a site use agreement, and any significant operational changes. Decisions made about infrastructure and operations on the site should be filtered through the site use agreement and may need to be approved by the BC Hydro Properties Division before they can be implemented.

Management objectives provide guidelines for how the project should be managed based on the unique characteristics of the site and community. The objectives also communicate the most important considerations in management considerations and outline some key actions for how these objectives can be achieved. Management objectives are summarized in Table 10, on the next page.
<table>
<thead>
<tr>
<th>MANAGEMENT OBJECTIVE</th>
<th>ACTIONS</th>
</tr>
</thead>
</table>
| **1. Enhance biodiversity and habitat value across the site.** | • Remove invasive plant species and replace with native and non-invasive varieties  
• Maintain hedgerows within production areas  
• Use organic techniques in all production areas |
| **2. Protect soil resources and build soil fertility over time.** | • Practice crop rotations in all annual production areas  
• Incorporate cover crops into crop rotations in all annual production areas  
• Use cover crops and mulch to develop a strategy for building soil fertility that is suited to the site  
• Compost crop residue, on site and apply to production areas  
• Maintain hedgerows within production areas |
| **3. Enhance and maintain the aesthetic appeal of the site in accordance with neighbourhood and community standards.** | • Ensure that all tools and equipment are put away and secured when work is complete  
• Do not store any broken or discarded tools or equipment on the site  
• Keep grass and vegetation around fields, buildings and fences trimmed and pruned  
• Consider the view of the site from surrounding properties. Make sure that these views are not impeded or unattractive  
• Encourage the public, especially surrounding residents to participate in establishing maintenance standards for the site |
| **4. Contribute to sustainability in the City of Langley.** | • Measure and aim to reduce the amount of water used in crop irrigation  
• Increase biodiversity by planting of native and non-invasive plant species  
• Increase the availability and access to locally produced food for local residents |
| **5. Manage and decrease rodent issues on site and in surrounding areas.** | • Turn compost piles on a regular basis  
• Harvest ripe produce in a timely manner and remove any produce that falls on the ground from fields and orchards  
• Collect and compost windfall from orchard areas to deter rodents  
• Coordinate with the City to dispose of organic materials that cannot be composted |
| **6. Ensure the safety for all users throughout the year.** | • Prune perennial crops and buffer planting areas to maintain sight lines  
• Monitor the conditions of all pathways of site and address any issues through resurfacing or other maintenance  
• Make information available about the research related to electromagnetic field exposure  
• Create a volunteer orientation for those who are active on the site  
• Post clear signage to control parking and traffic in the surrounding neighbourhoods |
| **7. Maintain buffers around BC Hydro transmission towers, power lines and infrastructure.** | • Consult with BC Hydro regarding safety measures when maintained vegetation areas within 10m of hydro towers  
• Use vegetation as a physical barrier between site activities and BC Hydro utility infrastructure |
| **8. Build supportive relationship with the public.** | • Post clear and attractive signage on the site with events and volunteer opportunities  
• Give residents opportunities to share feedback about the project  
• Develop a project website where news and events can be posted |

Table 10: Management Objectives for the LUADP
6.4. Budget and Project Financing

For urban agriculture projects, staffing and operational costs can be high, however there are also opportunities to generate revenue from the sale of farm products. This revenue varies depending on the scale of production (i.e. how much food is produced), the type of programming on the site, and the methods of distribution. In most cases regardless of how much money is made form the sale of farm products subsidies are typically needed.

Budget Summary Breakdown

Capital expenses represent all of the upfront costs related to developing the physical infrastructure on the site including; site servicing, built infrastructure, perennial plant material and signage. The capital expenses for UA projects may be covered by charitable grants, government funding (various levels), community fundraising, private partnerships or a combination of these sources. Many projects are also successful in securing donated services and materials in exchange for recognition of the supporting businesses and organizations. Table 11 summarizes the capital expenses for the site based on amenity area breakdown.

Operational expenses represent the ongoing costs associated with maintaining and operating the site as a UA project. This includes staffing, tool and equipment maintenance, production infrastructure and programming costs. Operational budgets can often seem high because labour is a significant expenditure for UA projects when staff is required to manage production, and other public engagement on the site. Although some projects may require significant human resources costs can be mitigated by recruiting volunteers to provide labour. UA projects are know to have a high degree of volunteerism, which in many cases decreases total operational expenditures. Table 12 summarizes the estimated operational expenses once all amenities are developed and operational.

The LUADP should be operated as a not-for-profit project with funds generated from the sales of farm products invested back into farm operations and community programming. Additional funding for staffing, farm operations, and maintenance will need to be secured from other sources including municipal funding, grants and private donations. The financing strategy for the LUADP should be reviewed by stakeholders annually. Table 13 shows potential funding sources for project operations. Complete amenity budgets can be found in Appendix D following this document.

### CAPITAL EXPENSES

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Servicing</td>
<td>$716,000.00</td>
</tr>
<tr>
<td>The Farm</td>
<td>$61,000.00</td>
</tr>
<tr>
<td>The Classroom</td>
<td>$32,700.00</td>
</tr>
<tr>
<td>The Orchard</td>
<td>$34,750.00</td>
</tr>
<tr>
<td>Pollinator Garden</td>
<td>$26,700.00</td>
</tr>
<tr>
<td>Buffer Planting &amp; Habitat Restoration</td>
<td>$110,075.00</td>
</tr>
<tr>
<td><strong>Total Capital Expenses</strong></td>
<td><strong>$981,225.00</strong></td>
</tr>
</tbody>
</table>

Table 11: Capital expenses summary for the LUADP.

### OPERATIONAL EXPENSES

<table>
<thead>
<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
<td>General Maintenance</td>
<td>$17,000.00</td>
</tr>
<tr>
<td>Staffing</td>
<td>$60,000.00</td>
</tr>
<tr>
<td>Farm Operations</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>Classroom Operations</td>
<td>$7,500.00</td>
</tr>
<tr>
<td>Orchard Operations (approximate)</td>
<td>$2,000.00</td>
</tr>
<tr>
<td><strong>Total Operational Expenses</strong></td>
<td><strong>$95,500.00</strong></td>
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</table>

Table 12: Operational expenses for the LUADP.

### POTENTIAL REVENUE SOURCES

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants</td>
<td>$50,000.00</td>
</tr>
<tr>
<td>Donations (Funds and Materials)</td>
<td>$20,000.00</td>
</tr>
<tr>
<td>Farm Product Sales</td>
<td>$30,000.00</td>
</tr>
<tr>
<td><strong>Total Annual Revenue</strong></td>
<td><strong>$100,000.00</strong></td>
</tr>
</tbody>
</table>

Table 13: Possible Revenue Sources for the LUADP.
Implementation of the LUADP is contingent on approval by City Council, and continuing to adhere to BC Hydro compatible use and safety guidelines.

Implementation should begin in the early spring with the pre-development phase. The majority of site development will take place over the summer and fall in order to prepare production areas for planting the following spring. The amount of time dedicated to site development may differ depending on available resources.

Budget summaries provide a cost breakdown for each phase. This includes major feature and infrastructure development as well as a portion of site development costs.

### 7. Implementation Plan

#### 7.1 Pre-development Phase

During the pre-development phase priorities are to set up the management frameworks to support the LUADP. This includes convening the Non-Profit Society Steering Committee. Once steering committee members are identified this group will engage management stakeholders in the development of a Site Use Agreement.

This phase will also involve developing a strategy for continued engagement with community partners and the public. At this time engaging with strategic community partners (i.e. LEPS, schools, and other partners) may be useful to better understand which elements they can support.

**Activity Summary:**
- Convene Steering Committee
- Develop Site Use Agreement
- Engage with the public to share development and programming plans
- Engage with potential community partners and identify existing resources

#### 7.2 Site Development Phases

The following implementation phases have been divided to demonstrate how the site may be developed over time depending on available funding and resources.

**Phase 1: Infrastructure & Site Servicing**

This initial phase of site development is focuses on setting up servicing on the site and establishing the entrance and parking area. This will include installing a municipal water connection and the pit toilet facilities.

**Phase 1 Activity Summary:**
- Establish Site Entry and Parking
- Install municipal water connection
- Resurface existing pathways and create new pathways
- Install pit toilet

**Phase 2: Amenity Development**

The second phase will focus on development of the areas where programming on the site will take place, as well as any necessary infrastructure to support food production. This will include delineation of annual production areas, building farm hub and outdoor classroom areas.

This phase involves the development of all annual production areas, and supporting infrastructure. Once this phase is complete it would be possible for food production to begin. The remaining phases are primarily focused on environmental restoration, and habitat enhancement.

**Phase 2 Activity Summary:**
- Build Farm Hub and storage area
- Establish classroom infrastructure
- Delineate all annual production areas
- Cultivate annual production areas and plant cover crops
Phase 3: Habitat Restoration
The third phase will focus on planting habitat areas, including the pollinator corridor. This stage provides a good opportunity to engage with the community recruiting volunteers and students to help with planting. It also represents a good opportunity to initiate the planting of perennial crops.

Activity Summary:
- Plant habitat areas
- Plant pollinator corridor
- Prepare orchard areas (add compost etc.)

Phase 4: Site Naturalization
The final development phase will focus on ecological restoration and planting perennial crops in orchard areas. During this phase the areas designated as buffer plantings will be prepared and planted with a variety of native species that are appropriate for growing within hydro ROWs.

There is opportunity in this phase to engage volunteers, school groups, and the general public in planting perennial plant material in the orchard and buffer planting areas.

This phase can be completed at once or divide into additional phases depending on available funding resources.

Activity Summary:
- Plant orchard areas
- Plant buffer areas

Table 14 breaks down the cost per development phase, which may allow for more flexible implementation based on available funds and resources. The site preparation costs have been divided across each phase and reflect the amount of site area that would need to be prepared to develop amenities.

Table 14: Phase development cost breakdown for capital costs for the LUADP
8. Conclusion

The Langley Urban Agriculture Demonstration project pilot explores the feasibility of urban agriculture on a publicly owned BC Hydro ROW in the City of Langley. The land was first identified as a potential site that could support food production and related activities by the City, and partners at Kwantlen Polytechnic University in 2010.

There was little activity on the project until 2016 when funding was secured from Metro Vancouver to complete the detailed planning phase creating a site plan, management and operational plans, and preliminary budgets for the project. At this time Metro Vancouver funded a detailed planning phase recognizing the potential to create a model for urban agriculture for utility ROWs in municipalities across the Metro Vancouver Region.

The plan takes a balanced approach weaving together environmental enhancements, education and food production. The project addresses the concerns of residents by scaling back production elements, enhancing the natural character of the site and outlining a plan for long-term management that involves community collaboration.

Urban agriculture projects aim to connect urban residents to their food source. Successful projects from around the world demonstrate that urban agriculture can make positive contributions to local level sustainability, food self reliance, and livability in urban communities.

Some of these contributions which directly apply to the LUADP are:

**Improving Food Literacy:** Urban agriculture provides a field-to-fork experience that can enrich their understanding how food is grown, and the importance of protecting land and resources that support food production.

**Health:** Urban agriculture provides access to fresh, locally grown food in urban communities. Growing food, and the activities associated with it also provide opportunities, for people to get outside encouraging active lifestyles.

**Social Connections:** Urban agriculture sites support programming for residents of all ages and socio-economic classes. In many cases these projects encourage mixing, and may improve community cohesion, and decrease social isolation.

**Encourage Self-Sufficiency:** Providing support for urban agriculture creates opportunities for people to learn about food production. They can see production models at work and feel supported in growing more of their own food - resulting in self sufficiency.

**Activate Public Space:** Urban agriculture supports a variety of activities - in addition to food production. These diverse activities can activate public spaces and daily operations on may also encourage community building and place making.

**Environmental Sustainability:** Bringing diverse productive and non-productive landscapes to urban environments can help to address many different environmental sustainability challenges. These include improved soil health, decreased run off and flooding, increased biodiversity, and enhanced wildlife habitat.

8.1. Next Steps

With a completed plan, implementation of the LUADP is subject to approval by Langley City Council. It is also necessary to establish community partners who can help support programming and operations and to secure funding for implementation, program development and operations.
8.1.1. Establishing Community Partnerships

Partnerships are critical in the development of UA projects. Partners can assist in accessing funding, provide programming support, or offer advice as the project develops. With a concept developed for the LUADP a key next step in the process will be connecting with potential community partners who may be willing to fund, and support operations over the long-term.

Key project themes are: food and agriculture, health and nutrition, environment and education. Partners with mandates that support any of these themes could be valuable collaborators for the LUADP moving forward.

8.1.2. Funding Recommendations

Consistent funding is required to support UA projects. For projects that do not generate revenue, or can’t be supported by the revenue generated there are a variety of alternative funding sources that can be explored.

Grants

Grants are a common financing option for community projects and there are many that can go to support local food projects, including urban agriculture. In order to be eligible for some grants it is necessary to be a registered non-profit group, therefore establishing the non-profit society will be necessary before pursuing this kind of funding. Grant writing is an activity that requires a significant amount of time and energy and it is likely that City staff, and community partners, will be required to support this work, especially in the initial stages of fundraising for the LUADP.

UA projects can be eligible for a variety of grants, including those relates to community development, local food, agriculture, education, health and nutrition, and urban sustainability. In addition to these themes, the LUADP could access funding related to habitat and environmental restoration, community amenity development, and recreation. Grants can support both capital investments, and ongoing operations depending on the stipulations from the funder.

Municipally Supported Grants

In addition to organizational and government grants that support non-profit groups, the LUADP is well suited to also access funding for municipally supported projects. Accessing this type of funding will require the LUADP to apply in partnership with the City of Langley.

Private Sector Sponsorship

Private sector companies should also be considered as valuable partners and that UA projects can appeal to both the charitable and business objectives of private companies. UA projects may also be able to secure donations of materials and services from local businesses that support capital development and operations. It may also be possible to get materials at a discounted cost which could benefit the project by lowering operating costs. The examples provided in this report show some existing opportunities for private sector sponsorship that the LUADP may be eligible for, additional corporate grants and donations may be available locally, or regionally.

Institutional Partnerships

Partnering with local schools as well as post-secondary institutions could also be a way to access funding that can support ongoing programming efforts of urban agriculture projects. Local schools may be able to provide access to education specific funding while also supporting the development and facilitation of educational programs on the site.

Post-secondary institutions may also provide access to funding for research and program development that can support the project in better serving the needs of the community, and the local food sector.

Table 15 provides a list of potential grant funding sources for the LUADP. These options represent a diversity of funding choices that could support site development, operations, programming, and staffing.
<table>
<thead>
<tr>
<th>FUNDER</th>
<th>FUNDING DESCRIPTION</th>
<th>GRANT TYPE/AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizational Grants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Van City Credit Union</td>
<td>Very supportive of community development and sustainability projects. They currently fund a variety of urban agriculture initiatives, and food system research in the lower mainland.</td>
<td>• has a variety of granting programs that can support different initiative and projects</td>
</tr>
<tr>
<td>Real Estate Foundation of BC</td>
<td>Supportive of projects sustainable land use and local food systems. Supportive of projects which demonstrate strong partnerships, and community impact over the long term.</td>
<td>• provides 50% of cash portion of budgets</td>
</tr>
<tr>
<td>Recreation Foundation of British Columbia</td>
<td>Provides funding to advance parks, recreation and culture, and the environment in BC.</td>
<td>• under $10,000</td>
</tr>
<tr>
<td>The Hamber Foundation</td>
<td>Provides grants for projects that advance recreation, culture and health.</td>
<td>• project based funding</td>
</tr>
<tr>
<td>Tides Canada</td>
<td>Supporting social innovation projects that aim to improve the environment, and contribute to sustainable and livable communities; including sustainable food systems</td>
<td>• supports projects that align with their core values and focus areas</td>
</tr>
<tr>
<td>United Way</td>
<td>Provides a variety of grants to support community development projects in the Lower mainland.</td>
<td>• project specific funding</td>
</tr>
<tr>
<td><strong>Government Grants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metro Vancouver Agri-Awareness Grant</td>
<td>Provides funding to community organizations that focus on education the public about local food and agriculture.</td>
<td>• project specific funding</td>
</tr>
<tr>
<td>Canada Summer Jobs</td>
<td>This is a youth employment experience that provides wage subsidies for hiring youth for summer employment</td>
<td>• wage subsidies</td>
</tr>
<tr>
<td>Agriculture Youth Green Jobs</td>
<td>This program provides wage subsidy funding specifically for youth in the agricultural sector</td>
<td>• wage subsidies</td>
</tr>
<tr>
<td><strong>Municipally Supported Grants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCM – Municipalities for Climate Innovation</td>
<td>Provides funding, training and resources to help municipalities respond to climate change</td>
<td>• support for programming and training</td>
</tr>
<tr>
<td>Community Recreation Program</td>
<td>Provides funding for capital funding projects that help to make communities healthier through the development of recreation infrastructure</td>
<td>• small grants for recreation focused projects</td>
</tr>
<tr>
<td><strong>Private Sector Sponsorship</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountain Equipment Coop</td>
<td>Support projects that increase access to outdoor activities, and teach responsible outdoor recreation and environmental stewardship.</td>
<td>• grants up to $20,000</td>
</tr>
<tr>
<td>Nature’s Path</td>
<td>Gardens for Good - Gardens for Good supports community food production projects.</td>
<td>• $15,000 grants</td>
</tr>
<tr>
<td>West Coast Seeds</td>
<td>Offering seed donations to community groups and educational projects.</td>
<td>• seed donations</td>
</tr>
</tbody>
</table>

Table 15: Possible grant funding opportunities for the LUADP.
8.2. Lessons Learned

Lessons learned from the Langley Urban Agriculture Demonstration Project (LUADP) pilot have the potential to inform the development of similar initiatives across the Metro Vancouver region, by providing a model for urban agriculture in utility right-of-ways (ROW), and demonstrating successful connections between municipal and community partners. When initiating the project, it was recognized that there are other publicly owned, utility ROW corridor sites within the region that may be suitable for urban agriculture. This section summarizes some of the scoping questions, considerations and key learnings about balancing ROW compatibility restrictions with requirements for urban agriculture to help support the potential for similar initiatives in the region.

8.2.1. Project Initiation

Covered in this section:
- Identifying and accessing land within hydro ROWs for urban agriculture.
- Establishing and managing partnership with utility companies
- Project funding
- Establishing and managing relationships with community partners
- Establishing a project timeline

Accessing Land

Is urban agriculture a compatible use on site(s) being considered?

In BC, agriculture is considered a compatible use in hydro ROWs, however farm infrastructure and practices may be restricted by the utility company based on public safety requirements. See Resources at end of this section for BC Hydro Compatible Use Guidelines.

The suitability of a given site may also be impacted by local policies related to urban agriculture, utility ROW development (i.e. land use policy, bylaws). Be sure to identify any local policies, bylaws and regulations that may impact an urban agriculture project.

Is urban agriculture aligned with the goals/mandate of the landowner, local government and community?

First, clearly understand ownership of the land in question: Is it publicly owned? Privately owned? Owned by the utility company?

Then consider the landowner’s goals and priorities, and the potential for urban agriculture to align with and support these goals.

What relevant policies or strategies support the development of urban agriculture in the community (eg. Official Community Plan, healthy city initiatives, etc)?

This may help in the process of identifying potential partners or accessing project funding. Understanding relevant policy may also help guide amenity development. For example: If a municipality is working towards improving health and nutrition for children an urban agriculture project that connects on farm learning with school food programs could be a good fit.

Key Learnings

1. Food production is possible in ROWs, but restrictions for infrastructure development on public land, and in utility ROWS, could limit the scale of food production on a given site.

2. Municipal governments are key partners for urban agriculture projects.

3. Suitability of a site is informed by site characteristics AND the surrounding context.
Local Land Inventory for Urban Agriculture Sites

The appropriateness of the site should also consider the level of need and community support in the local area, and specific site conditions which may support or deter urban agriculture. Conducting an inventory of land available for urban agriculture, or assessing the suitability of multiple sites (ROW and non-ROW sites) could be helpful when selecting the most appropriate location for urban agriculture in a community.

Funding

How much does a project like this cost?

The initial 2010 project feasibility study between the City and KPU was first proposed by the City of Langley in partnership with Kwantlen Polytechnic University, at a cost of $5000. Funding for the site plan and business plan as described in this report came from the Metro Vancouver Sustainability Innovation Fund, and cost $50,000.

Funding for implementation, and project management will vary based on the size of the site, and the type of amenities proposed (see 6.4 Budget and Finance Summary).

Who should fund a project?

Funding for urban agriculture projects can be divided into three different categories:

- Planning – Site assessment, design, community engagement
- Implementation – site preparation, amenity development
- Operations – staffing and maintenance

Partnerships with Utility Companies

When to approach a hydro/utility company?

Consultation with the utility company that manages utility works and infrastructure on this site is a critical factor in project success. In the case of the LUADP the project team engaged with BC Hydro throughout the planning process. The utility company should be contracted BEFORE any planning work begins to ensure that urban agriculture (of some kind) is possible on the site) and, the project team understands the plan approval process.

Engagement with utility companies could vary depending on the site and the type of project being proposed.

Working with BC Hydro on the LUADP

BC Hydro was contacted at the beginning of the detail planning phase for the LUADP. For all development projects in or adjacent to hydro ROW areas BC Hydro must approve site plans and work with partners to establish site use agreements. In the case of the LUADP, BC Hydro was primarily concerned with scale and location of amenities, buildings and structures, access to utility infrastructure, compromising utility infrastructure. The BC Hydro Properties Division is the point of contact for compatible use development, and can be reached at:

Phone: 1-800-667-1517 or 604-623-3637
Email: properties.helpdesk@bchydro.com

How much time will a representative from the utility company commit to the project?

Based on the experience from the LUADP a representative from the BC Hydro properties division should be asked to commit the following, over the anticipated project lifecycle.

- 4 hours for project scoping
- 6-8 hours for check-ins and meetings
- 3-4 hours for plan review
Funding for these various stages can come from a variety of sources including:

- Municipalities
- Regional Governments
- Foundations/Community grants
- Public/private partnerships
- Educational institutions
- NGOs

**Project Team & Stakeholders**

**Who should be on the Core Project Team?**

- **Technical experts:** practitioners with expertise in urban agriculture and design
- **BC Hydro or utility owners:** an individual(s) who can participate, and can advise the project throughout the planning phase.
- **Municipal planning staff:** individuals who have an understanding of the community.
- **Staff from other municipal departments:** Consider participation from other municipal departments, including: parks, recreation and cultural services, and engineering
- **Funders:** funding agency for the project and/or community groups providing support for the project.
- **Health authorities:** staff can provide information and research on potential health benefits, as well as guidance in addressing perceived health concerns from the community; their participation may also lead to greater visibility, and public and political support.

**Who else can be engaged?**

Affected and Interested Stakeholders: These stakeholders are not likely to be directly involved in development of the project, but may provide helpful feedback based on experiences from other jurisdictions.

- Neighbouring municipalities
- Adjacent Schools and/or local school board
- Community agencies with facilities near project site

**ROW Ownership**

In this project, BC Hydro was the utility ROW owner. However, if you are considering a similar initiative in your community, the ROW owner may be a different utility (eg. Fortis, Telus, etc.).

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<table>
<thead>
<tr>
<th>Meeting Date</th>
<th>Description</th>
<th># of hours</th>
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</thead>
<tbody>
<tr>
<td>February 16, 2017</td>
<td>Core Team Meeting #1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Review of BC Hydro ROW restrictions</td>
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</tr>
<tr>
<td></td>
<td>• UA amenities discussion</td>
<td></td>
</tr>
<tr>
<td>March 29, 2017</td>
<td>Core Team Meeting #2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Review of BC Hydro ROW restrictions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• UA amenities discussion</td>
<td></td>
</tr>
<tr>
<td>April 20, 2017</td>
<td>Interagency Meeting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• With local governments and agencies</td>
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</tr>
<tr>
<td></td>
<td>• With interests in urban agriculture</td>
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</tr>
<tr>
<td>June 29, 2017</td>
<td>Core Team Meeting #3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Review public input</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Evaluate Amenities</td>
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<tr>
<td>August 29, 2017</td>
<td>Core Team Meeting #4</td>
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<tr>
<td></td>
<td>• Review conceptual plans</td>
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<tr>
<td>October 25, 2017</td>
<td>Core Team Meeting #5</td>
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</tr>
<tr>
<td></td>
<td>• Review public input</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identify components for final plan</td>
<td></td>
</tr>
</tbody>
</table>

**Total # of hours** 15

*Table 16: LUADP Core team planning meeting summary.*
• Civil society groups active in urban agriculture, environmental causes or education
• Urban agriculture, farming, or community gardening groups
• Agricultural agencies (Ministry of Agriculture, Agricultural Land Commission)

**Community Partners:** Establishing community partnerships can support project development and programming, support access to funding, and help garner broader community support. Initiating contact with potential community partners early can help inform project development, and support the planning phase.

**What to look for in potential community partners?**

- Are there urban agriculture or local food related projects in the community already? Who supports them?
- Are there organizations that represent the interest of potential user groups? For example: youth organizations, seniors groups
- Are there any special interest groups that could support urban agriculture activities? For example: garden clubs, beekeeping clubs
- Are there existing groups who have good reputation in the community for the programming they provide?

**Time Requirements**

Exact time requirements for the development of urban agriculture projects will vary based on site size and project complexity. The time line below reflects the experience with the LUADP, and can act as a reference for estimating a project time line.

**Figure 6:** Sample project timeline.
8.2.2. Site Assessment & Planning

Covered in this section:
- Soil testing protocol and funding
- Understanding site context and characteristics.
- Considerations for site management and operations.
- Creating a site management budget and plan.

Soil Analysis
Soil testing and analysis should be conducted in all ROW sites as there is risk of contamination. Cost of soil testing depends on the size of the site. As an estimate, soil testing in BC could cost $2000 to $6000 (approx. 500/sample). This expense should be covered by the project planning budget (funder of project planning should support soil testing as an integral part of this project.

See Resources at end of this section Soil Analysis Guides and Testing Labs in Metro Vancouver

Site Analysis:
Community Considerations:
- Is there any relevant policy supporting urban agriculture? Any potential barriers?
- Any other urban agriculture in the community?
- What are the characteristics of the neighbourhood where the project would be located?
- What resources exist in the community that could support urban agriculture?

Site Considerations:
- Is there existing vegetation on the site?
- Are there any site characteristics that might impact urban agriculture amenities?
- Is the site publicly accessible? Where are the access points?
- Are there any features to protect? (i.e. existing amenities, trails, natural features)

BC Hydro ROW Considerations:
- Where are transmission towers located on the site? Is there any other utility infrastructure?
- What are ROW owner access requirements?
- Has project team obtained a copy of the title for the ROW property?
- Is there an existing hydro ROW site management agreement? (can be obtained through the BC Land Title Office).

Site Management
Key issues to address in a site management plan.
- Infrastructure needs for urban agriculture – water/electricity/waste (5.1. Servicing and Infrastructure)
- Roles and responsibilities for participating, managing the operations, and maintaining infrastructure and urban agriculture amenities (6. LUADP Management Plan)
- Site Use Agreement – agreement between ROW owner and urban agriculture stakeholders (6.3.1. Site Use Agreement)
- Production practices – scale, technical considerations (6.2.1. Production Model)
- How will food be shared / sold? (6.2.2. Distribution)
- Financing plan for ongoing management (6.4. Budget and Financing Summary)

Other technical issues to consider that are not addressed in LUADP report but that should be addressed the next phase of work (ie. Implementation Plan)
- Bio-safety – to ensure compatibility between urban and commercial agriculture (eg. management of pests, disease potential, etc)
- Security – assessing potential of vandalism/theft of equipment & food, and mitigation plan
- Enforcement – who / how would agreements be enforced
- Closure strategy – how the municipality can ‘close up’ the project if interest / community capacity declines
8.2.3. Community Engagement

Covered in this section:

- Anticipating and addressing common misconceptions and barriers to community buy in.
- How and when to engage the community.
- What kind of information should you collect from the community.
- Early engagement, and how it is valuable.
- Other important considerations for public engagement.

Responses to Common Misconceptions about Urban Agriculture

Urban agriculture always means community gardens: Community gardens are a common examples of urban agriculture. However, there are many other urban agriculture features and amenities that can be adapted to meet the needs of a community. Understanding what a community’s needs might be, and how different urban agriculture amenities could meet those needs is an important part of the engagement process.

Urban agriculture is messy: This assumption is often associated with community gardens or allotment gardens. Those unfamiliar with urban agriculture may envision shabby structures, or overgrown areas that don’t appear well taken care of. This is not a universal characteristic, or true, of all urban agriculture, however concerns about aesthetics should be carefully considered when developing urban agriculture plans.

Urban agriculture presents public health risks: In some cases, there may be an increased risk of pollutants in the soil that could impact the health of those working on the site, or consuming food grown there. This type of risk is well understood by practitioners and can be mitigated by testing the soil to determine if there are pollutants on the site that could be harmful to human health, and designing urban agriculture amenities to safely respond to the risks. Soil test results can be compared to national standards for agricultural soils – this information, and other details about potential contaminants can be found through the Canadian Council of Ministers of the Environment.

Urban Agriculture is not the highest and best use of land: There is a common perception that urban farms use scarce land resources in cities that could be otherwise used for commercial, residential, or recreational purposes. Sites that are not appropriate locations for commercial or residential development, such as utility ROWs, floodplains, or parks may be ideal sites for creating a community amenity such as urban agriculture.

Potential Barriers to Community Buy in

Urban Agriculture will Exacerbate Existing Issues: Residents may be motivated by other underlying issues in the community. In some cases urban agriculture may be seen as undesirable because it may be perceived to exacerbate existing issues in the community, such as pest infestations, traffic, non-resident parking, vandalism and crime.

Urban agriculture projects will be a burden on taxpayers: Urban agriculture projects have the potential to achieve a variety of outcomes. Many are operated by non-profit organizations that seek external funding resources (grants, fundraisers, etc) to support non-production programming such as education, and community development, in addition to revenue generated from the sale of products grown on the site. Very few urban agriculture projects are 100% publicly subsidized.

Public perception of safety/quality of food produced in ROWs: There is often public concern around urban agriculture projects due to a perception that urban soils might be contaminated, and therefore unhealthy for food production. There can be additional concern when proposed projects are located within a hydro ROW. Health authorities can provide research, and evidence-based information on public health and safety of food production in urban areas, including in ROWs. BC Hydro also has resources that can provide information to the public.
Key Issues to Address during outreach with the Community

- Is the site currently used? If so how?
- Is there a general understanding about urban agriculture in the community?
- Are there any misconceptions to address?
- Are there any local issues that may be exacerbated by introducing urban agriculture?
- Are there local needs that could be met by introducing urban agriculture?

Early Engagement and Public Outreach

Preliminary outreach, before beginning the planning phase may help assess community need, and gauge the level of community support. This can help to:

- Identify/confirm potential site(s) for urban agriculture in a community
- Determine the level of community support for urban agriculture in the community

Value of Early Engagement

The planning process for the LUADP did not involve preliminary outreach with the community, and instead built on the earlier work from 2010 that aimed to understand the feasibility of urban agriculture in a hydro ROW.

Without preliminary consultation with the community, it proved challenging to gain community support, and the plan was ultimately put on hold by City of Langley Council due to community opposition.

Key Learnings:

1. Aim to engage potential users from across the community, including immediate neighbours.
2. Integrate public education into the planned engagement process
3. Invite potential urban agriculture partners in the community to be part of consultation, along with residents, in order to inform amenity selection and demonstrate broad community support for a project

8.2.4. Project Risks

Conflicts between ROW uses and Urban Agriculture.

- Development restrictions in hydro ROWs limiting and restricting the kind of urban agriculture amenities that may be desired by stakeholders or members of the community.

Timing or funding challenges.

- Significant time required to establish / maintain multi-agency partnerships.
- Securing funds for planning implementation, and operations could be a challenge.
- Finding appropriate community partners and supporters could be a challenge.

Community buy in and engagement.

- The potential for no, or delayed community buy in.
- Urban agriculture may appear to conflict with existing or surrounding uses.

Expertise and knowledge sharing

- Agricultural expertise is needed for development and operation of an urban agriculture site.
8.2.5. Planning Resources

Urban Agriculture Resources:


BC Hydro ROW Resources:

- BC Hydro Rights of Way Guidelines
- Planting Near Power Lines
- What the Health Experts are Saying
- Understanding Electric and Magnetic Fields

Soil Analysis Guides:

- Toronto Public Health. *From the Ground Up: Guide for soil testing in urban gardens.*

Soil Testing Labs in Metro Vancouver

- CARO Analytical Services, Richmond
  https://www.caro.ca/
- Exova, Surrey
  https://www.exova.com/
- Maxxam, Burnaby
  http://maxxam.ca/
- AGAT Laboratories, Burnaby
  http://www.agatlabs.com/
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**Project Name**: Everdale, African Food Basket and Food Share, A 7-acre farm site located within Colony Farm Regional Park that is operated by Urban farm started in 2010. Two-thirds of an acre is devoted solely to commercial vegetable production, native plants, bees, etc. The goal of the Beacon Food Forest is to bring the richly diverse community together by fostering informal one time, trail guided tours of the farm and forest. The Beacon Food Forest combines aspects of native habitat restoration with edible forest gardening. The project started in 2005 as a result of a permaculture tour at a City Park, the final design created by a landscape architect and communitylikeminded community input. A 7-acre farm site located within Colony Farm Regional Park that is operated by Urban farm started in 2010. Two-thirds of an acre is devoted solely to commercial vegetable production, native plants, bees, etc. The goal of the Beacon Food Forest is to bring the richly diverse community together by fostering informal one time, trail guided tours of the farm and forest. The Beacon Food Forest combines aspects of native habitat restoration with edible forest gardening. The project started in 2005 as a result of a permaculture tour at a City Park, the final design created by a landscape architect and communitylikeminded community input. A 7-acre farm site located within Colony Farm Regional Park that is operated by Urban farm started in 2010. Two-thirds of an acre is devoted solely to commercial vegetable production, native plants, bees, etc. The goal of the Beacon Food Forest is to bring the richly diverse community together by fostering informal one time, trail guided tours of the farm and forest. The Beacon Food Forest combines aspects of native habitat restoration with edible forest gardening. The project started in 2005 as a result of a permaculture tour at a City Park, the final design created by a landscape architect and communitylikeminded community input.
Columbia Centre for Urban Agriculture
Columbus, OH
https://www.blackcreekfarm.org/urban-agriculture
1.5 acres
Urban Farm started in 2020. Two-thirds of an acre is devoted solely to commercial vegetable production. The purpose of the Urban Farm is to break down the common misconception that we live in a geographically and intentionally distant world from where our food is produced.
Commercial vegetable production, native plants, community composting, sidewalks, demonstration garden
Elated by individuals and managed as a non-profit. Organizations collaborate to create an urban garden and use a program to empower people to start gardens in unused backyards.

Capilano Community Orchard
Vancouver, BC
https://www.capilmtn.ca/capilano-community-orchard
1 acre
Environmental Youth Alliance, City of Vancouver, Vancouver Parks and Recreation, TD Green Streets, York & Capitol and the Vancouver Foundation, Community Studio
Community orchard that is an informal Barb in 30 minute walk from downtown Vancouver. It is a place to celebrate the benefit of growing food in times, in the heart of the city and is a place for people to feel the connection to the land and one of the most important and intimate acts: creating the food that they and their children eat.
Apples in orchard, apple picking, apple pies, unique fruit trees, honey bees and apple cider
The environmental Youth Alliance established the project as it’s one of the first orchard ventures in the early planning and design stages. Community support is key to this operation, as well as partnerships with local businesses like Black Creek Farm.

Dwelling Community Garden
Squamish, BC
http://www.dwellingcommunitygarden.org/ website
6 acres
created from site and a 10 acre site in Squamish. Dwelling Community Garden project that has both airport level plots and accessible raised bed plots. Promotes sustainable gardening projects, share produce with community organizations (food shelves and meat programs), and disseminating gardening information through website and newsletter.
Wheeler’s accessible gardens, on-site composting, volunteer run, plots satisfying members.

Dotton ride Park
"Community Campus"
Toronto, ON
https://www.toronto.ca/content/toronto/en/parks/recreation_and_sports/parks_and_special_areas/dottone-park/community-campus-park.html
1.3 acres
Urban farmed (seed producers, the RTH City Farm, Balfour
evening, owned is a community owned and operated by a non-profit organization.
Community garden. - a space meant for traditional production and education. Planned to include gardens, greenhouses, a community center and space for a full range of educational programs.
Communal production, incubator plots, fresh city farms inc is the organization currently managing the site. It’s a 4–5 acre site. It’s just a few blocks away from the Heart of the City Foundation, a non-profit organization, was a way for people in development of the cultivation campus, private enterprises operate on the island and market through fresh city farms and independently.

Fareview Gardens
Oakland, CA
1.25 acres
Centre for Urban Agriculture, Land Trust for Santa Barbara City
The conservation easement was designed to protect the land in perpetuity. Unlike most "open space" easements, our easement was designed to require that the land must stay open and be a working or craft form and that the education on it must continue under the non-profit organization, officially named the Center for Urban Agriculture.
The farm continues to produce an explosion of fresh fruits and vegetables. Its broad presence in the heart of the city and its use as a way for people to reclaim their last connection to the land and one of the most important and intimate acts: creating the food that they and their children eat.
Farm stand and fruit trees.
Commerical easement protects the land from development, based on active use and extending education programming for the Center for Urban Agriculture.

Fairview Farms
Brampton, ON
https://www.fairviewfarm.ca/ website
45 acres
Farms, Toronto Region Conservation Authority
The McKee Start-up Farm in Brampton is the first of its kind in Canada and is a viable model for others to learn from across the country. McKee is a vital example of a sustainable urban agriculture and can serve as a model for new farmers from urban and rural areas who are looking to farm for their communities. 
Ris 45 acre, 3-4 km Luggage packed for the City of Brampton, a city farm and operation is based on active use.
Greenhouses, incubator plots, farm stand
The land is managed by non-profit organizations (land leased from the Toronto Region Conservation Authority). Education programs planned and administrated by Farmhouse. There are also incubator plots where farmers lease land on Farmhouse and operate independent businesses.

Fresh Roots Urban Farm
Vancouver, BC
https://freshrootsurbanfarm.org/ website
Two quarter-acre school yard markets gardens at VanTech Secondary and David Thompson Secondary
Vancouver School Board, City and granting (Vancouver Foundation, Van City, Fairview Estate Foundation)
In 2013 Fresh Roots started a working agreement with the Vancouver School District. Together we established the first of its kind Schoolyard Market Gardens, the king places where multicultural and intersectional knowledge sharing about! These are produce for educational use on school grounds. The food grows in school safety, local wellness food housed in a food security initiative, and is a weekly salad box program for East Vancouver families.
Schools, community garden
Production and educational programming is managed by Fresh Roots and educational programming for the urban centre.

Gabriola Commissions
Gabriola, BC
https://www.gabriolacommunities.org/ website
28 acres
Mill and Co-op food bank and support and funding from Community Credit Union, Gift Fund, Nanaimo Community Foundation, the Gabriola Recreation Society, the Gabriola Lions Club, Gabriola Island Conservancy and the Vancouver Foundation
The Gabriola Commission is a place where sustainability, community and agriculture meet, featuring 30 acres of peaceful rural landscapes and rich connections with significant tax benefits. The property includes connecting pathways, open vistas, meditation spaces, social community gardens, learning and meeting facilities for the use and enjoyment of the public.
Community Gardens, Community gathering space, land held in Public Trust.
Managed by a council made up of non-corporate from different interest groups. These non-corporate meetings are open to the public, legal ownership is held by the Gabriola Commission’s Foundation, a charitable non-profit society.

Glen River (garden space)
Toronto, ON
https://www.toronto.com/citypages/glen-river-park
Skatepark
Park Peoples, West York Architecture, City of Toronto, Hydro One
This project began with an international ideas competition that asked toire and designers to contribute to an overall vision for the public use of the 5km hydro corridor. The project was a selection of the 27 entries at the public event and workshops held in 2013 attended by over 300 people, three councilors and the local MPP. There is a proposed fixed pedestrian element but recreation, conservation and public open space are all central.
This project was a conception of a design competition but upon implementation would be managed by the city as part of the public space network.
APPENDICES
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<th>Project Name</th>
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<th>Governance</th>
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<tr>
<td>Prairie Crossing Farm</td>
<td>Madison, WI</td>
<td><a href="http://www.prairiecrossingfarm.org">Link to Prairie Crossing Farm</a></td>
<td>31 acres, 5 acres in cultivation</td>
<td>Madison-based Land Trust, Urban OpenSpace Foundation</td>
<td>Growing certified organic food on land. We offer three food markets: a fresh produce market, a farmers market, and a CSA market.</td>
<td>Market garden, land trust</td>
<td>Managed as an integral piece of the Fairview Garden project. The farm uses CSA, hires staff, and engages in retailing new farmers.</td>
</tr>
<tr>
<td>UBC Farm</td>
<td>Vancouver, BC</td>
<td><a href="http://www.ubc.ubc.ca/ubcfarms">Link to UBC Farm</a></td>
<td>24 hectares</td>
<td>University of British Columbia, Faculty of Land and Food Systems</td>
<td>This center is a sustainable food systems at UBC. It is a unique research center that integrates the production of food in both teaching and training. The farm is situated in a 90-year-old residential area. The farm incorporates a variety of growing methods, including traditional and organic farming practices.</td>
<td>Flower, farm, indigenous gardens, children's programming, orchard, composting</td>
<td>The farm is managed as an educational resource and supports the local-based education in sustainable food and farming.</td>
</tr>
<tr>
<td>Unplanted terrace at the Forks</td>
<td>Montreal, QC</td>
<td><a href="http://www.unplantedterrace.com">Link to Unplanted terrace at the Forks</a></td>
<td>1 hectare</td>
<td>Cawston Community Centre, Riverview Elementary School and Community Learning Centre, South West United States.</td>
<td>Urban regeneration project that is focused on improving local access to fresh produce and encouraging healthy eating within the community. There are a school and collective gardens (everyone gardens the same plot of land, shares the harvest as opposed to individual plots).</td>
<td>Gardens, roof top, container, in-ground. Collective gardening, where everyone works together and shares the harvest.</td>
<td>Managed by the organization in partnership with community organizations and community participation. The project is built as a partnership between multiple community groups.</td>
</tr>
<tr>
<td>Urban Edge Farm</td>
<td>Providence, RI</td>
<td><a href="http://www.urbanedgefarm.com">Link to Urban Edge Farm</a></td>
<td>50 acres (60 acres cultivated)</td>
<td>Southside Community Land Trust</td>
<td>Urban Edge Farm is a model farm demonstrating environmental soil and water stewardship and farming practices. The farm hosts new farmers who collaboratively manage the farm's operation and maintenance. The farm also offers opportunities for volunteers to work alongside the farmers and to host farm-related events. The food grown by farmers at Urban Edge Farm feeds Community Supported Agriculture (CSA) and market customers. Farmers' Market customers, and drivers at local restaurants, including and local produce.</td>
<td>Incubator plots, co-op, CSA</td>
<td>A project of the Southside Community Land Trust which helps people eat the food they grow. The project is independent of local businesses and operates from the same acreage.</td>
</tr>
<tr>
<td>Washington Youth Garden</td>
<td>Washington, DC</td>
<td><a href="http://www.youthgarden.org">Link to Washington Youth Garden</a></td>
<td>1 acre, location the grounds of the US National Arboretum</td>
<td>US National Arboretum</td>
<td>Washington Youth Garden was established in 1971 by the DC Department of Parks and Recreation. It was created to teach children about rural skills and environmental awareness, as well as art. The garden includes, for example, a demonstration garden, where children can see and touch different plant species.</td>
<td>Demonstration garden</td>
<td>Established by city council and the DC Parks and Recreation Department, which is now managed primarily as an educational resource. It is located on the grounds of the USDA.</td>
</tr>
<tr>
<td>West Seattle Bee Garden</td>
<td>Seattle, WA</td>
<td><a href="http://www.westseattlebeegarden.org">Link to West Seattle Bee Garden</a></td>
<td>400 square feet</td>
<td>Westside community garden</td>
<td>The bee garden was created as an educational site for learning about pollinators and the role of bees in our ecosystem. It is also a pollinator-friendly space.</td>
<td>Educational information, outdoor classroom</td>
<td>Managed as an educational resource through partnerships with the Puget Sound Beekeepers Association.</td>
</tr>
<tr>
<td>Wood Street Urban Farm in Evanston</td>
<td>Chicago, IL</td>
<td><a href="http://www.woodstreeturbanfarm.org">Link to Wood Street Urban Farm</a></td>
<td>50 acres, 5 acres in cultivation</td>
<td>Evanston-based Land Trust, Urban OpenSpace Foundation</td>
<td>Wood Street Urban Farm was fully operational by 2009, a four-year process that convinced City leaders to amend the zoning ordinance and formally allow urban farming in Chicago. In 2011, Evanston Farm was the first agricultural project in Chicago. The farm is managed by the City of Evanston and was started in 2005.</td>
<td>Unheated hoop houses</td>
<td>This is an initiative of Growing Home, which manages many different urban farming projects in Chicago. It also acts as a hub for the work of other farming, pollination, and food access non-profits.</td>
</tr>
<tr>
<td>Woodlawn High School Urban Farm</td>
<td>Birmingham, AL</td>
<td><a href="http://www.woodlawnurbanfarm.org">Link to Woodlawn High School Urban Farm</a></td>
<td>2 acres</td>
<td>Jones Valley Foodbank Farm</td>
<td>This farm hosts and manages a high school student's integrated science and farm business educational component.</td>
<td>Permaculture and greenhouses</td>
<td>Permaculture of the Jones Valley Foodbank Farm.</td>
</tr>
<tr>
<td>Zenger Farm</td>
<td>Portland, OR</td>
<td><a href="http://www.zengerfarm.org">Link to Zenger Farm</a></td>
<td>15 acres</td>
<td>City of Portland, Friends of Zenger Farm, David A. Douglas School District</td>
<td>The Zenger Farm, built with $2.3 million in donations, has 5,600 square feet of display, office, meeting space, and community events. It also provides a space for community events and community meetings. The farm is a community center, part of Portland's local food system.</td>
<td>Market garden, orchard, community space, treehouse, chickens, fish house</td>
<td>Zenger Farm is run by the City of Portland and is managed as an urban farm with a focus on sustainable food production, environmental programming, and community events.</td>
</tr>
</tbody>
</table>
Project Name | Location | Project Links | Site Specs | Partnerships | Project Description | Unique Amenities | Growth
---|---|---|---|---|---|---|---
Greensgrow | Philadelphia, PA | [Website](http://www.greensgrow.org) | 5 acre | EPA Green Partner, Green Mountain Energy, Faith-based groups | Urban farm operation that engages community, supports local entrepreneurship, produces foods and integrates sustainability by promoting and environmental stewardship. | Livestock (pigs, chickens, ducks, bees), composting, urban farm CSA, hydroponics, greenhouses, community kitchen | Greengage has a Soil and Food Center located on an urban farm and managed by staff.
Urban Good Center for Local Food & Farming | Iowa, NY | [Website](http://www.urbangood.org) | 2 acres | located on the grounds of Cornell College, SMALL Business Extension and small Farm program | Groendyke’s Incubator Farm is first of its kind in New York State, creating opportunities to support farmers from small and medium businesses. They provide land, equipment, training and mentoring for three years, which is an asset to assist their farm businesses with minimal financial and advice. | Land owned by Cornell College. Supported through grants and donations.
Grow Calgary | Calgary, AB | [Website](http://www.growcalgary.ca) | 11 acres | Field Access Agreements in Calgary (Food Access Inc. and Epgany) | Canada’s largest urban agricultural farm. Grow fresh produce for Compassion, Inc. Epgany | Epgany grows produce for the Food Bank in Calgary. Aim profit organization. Founded an urban food and residential staff.
Haliburton Organic Farm Society | Victoria, BC | [Website](http://haliburtonorganicfarm.ca) | 3 acres, owned as renewable share farming | District of Saanich | Haliburton Community Organic Farms is a publicly-owned farm within the Agricultural Land Reserve (ALR). The farm is a result of development in a need of concerned citizens and the District of Saanich, that would feed the land. The farm is now being developed as a community and certified organic farm. New “democratization” farm was created to facilitate the development of this project. | Greenhouses, native plant nursery, walking trail, wetlands, independent operating. Operations are operating on.
Highfield Centre for Urban Agriculture | Woodstock, VT | [Website](http://www.highfieldcenter.net) | 10 acres (total) | Central Vermont Solid Waste District | Highfield is a SOC and staff oversees the Urban Agriculture Project. They have a 50000 sq ft organic farm. Highfield Centre for Urban Agriculture | Highfield has 50000 sq ft organic farm. It operates a small-scale community agriculture. It has a 50000 sq ft organic farm.
Reves For Humanity | Vancouver, BC | [Website](http://www.revesforhumanity.com) | 200 acres dispersed throughout Trans Mountain and Delta | partner with local schools, businesses, municipalities and civic organizations | This centre is for humanity non-profit organization that installs and manages gardens in Vancouver and Delta. They also run educational programming around agriculture. | This centre is for humanity non-profit organization that installs and manages gardens in Vancouver and Delta. They also run educational programming around agriculture.
Interzone Center & Interzone Community Farm | Burlington, VT | [Website](http://www.interzonemcvt.org) | 135 acres | Vermont Foodbank, Interzone Center | The Interzone Center leases land, equipment, greenhouses, irrigation and other agriculture services to small independent farms. Each year, these farms produce fresh produce, eggs, meat, and flours on 135 acres of land and contribute about 60 full time, part-time and seasonal jobs to the Burlington area. The Interzone Center currently leases land to 777 farms. These farms provide the needed business that provide mentorship to the 777 farms and leadership in the agricultural community. Interzone also operates an “education” project that distributes extra produce to those in need. | Interzone Community Farms is a consumer cooperative, managed by CSA members. Land is leased from the Interzone Center, which sells land to other independent farms. There are 2 full-time, year-round employees.
Janes Valley Teaching Farm | Birmingham, AL | [Website](http://www.janesvalleyfarm.com) | One city block | School boards and individual schools | Farm used to teach 6-12 year old students to eat, food and the library arts. It is a food-based education model rooted in academic standards | Janes Valley Teaching Farm is managed by the organization and staffed to work with small businesses.
Just Food Start-Up Farm | Orleans, ON | [Website](http://www.justfood.ca) | Each new farmer pays 1/4 the land | Farmsmiths with the Orian Centre Home Farm, Karen Community Farm and HLEO, Karen Living and Learning Education Opportunities Support Group (KLLP) | The incubator farm teaches and supports start-up farmers by utilizing each of the farm plots as a point of which they can produce vegetables and that for other Community Supported Agriculture (CSA) or for sale at retail farmers markets. Just Foods produces a communal wash station and cooler for carrying and temperature-storing the produce. They also need basic educational and training resources and knowledge directly to urban farmers. | Just Foods is a not-for-profit food security organization which is responsible for managing the incubator farms. Each member farmer runs his own independent business.
LushLife Greens | District, ON | [Website](http://www.lushlifegreens.ca) | 25 acres | | The garden is a showcase for urban gardening techniques and the innovative methods, organic pest management, and sustainable urban gardening. The garden is on the north side of the kitchen garden planted for its beauty as well as its productivity. It was designed to encourage public participation through educational demonstration and interactive design | Developed for high corporate space rear.
Landley Demonstration Garden at the Don Mills Discovery Daycare Arbour | Lisle, IL | [Website](http://www.lisle-il.gov) | 2 acres | | The Landley Demonstration Garden is an educational facility located in partnership with the Township of Lisle. The Garden was established in 1992 to demonstrate sustainable gardening techniques. In 2013, it was used as a new permanent location inside the Don Mills Discovery Daycare Arbour. The garden is staffed weekdays May to August, and is open to the public year round. | A living demonstration, educational garden, nature plant, and an example of how to grow food in a productive manner.
Living City Farm | Coquitlam, ON | [Website](http://www.livingcity.ca) | 4 acres | The Living City Campus is the Largest Environmental Education Centre in Canada. | The Living City Farm demonstrates sustainable and diverse farming practices and produces a variety of organic produce for local markets. Situated 10.6 km north of Toronto, this farm reconnects traditional agricultural practices in rural areas with the large metropolitan region of GTA. Produce is sold at local farmers markets. Naturalists at the Living City Farm take the kids from the schools and greenhouses, providing visitors with opportunities to experience a working farm firsthand. Educational tours, and sustainable agriculture-themed programs and activities are offered, including a children’s garden. | Market gardens, educational programming, walking trail, conservation project, heritage orchard, greenhouses.
Living City Farm is operated by FarmStart and land owned by TGA. This is a private enterprise, but education opportunities are part of the larger mandate of the Living City Campus.
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<td>Queen Farm</td>
<td>North Vancouver, BC</td>
<td><a href="https://example.com">Link</a></td>
<td>North Shore Neighbourhood House, the City of North Vancouver and the University of British Columbia</td>
<td>Queen Farm’s goal is to operate an economically viable urban farm within a residential area. Funds generated through the sale of the produce are reinvested back into the operations of the farm while creating valuable green-collar jobs for seniors and residents. In addition, the farm offers a range of workshops and lends an earning opportunity focused on sustainable food production for both adults and children.</td>
<td>Operated in an underutilized public parkland</td>
<td>Managed by the Edible Garden Project</td>
<td></td>
</tr>
<tr>
<td>ACL/quain Farm</td>
<td>Hamilton, ON</td>
<td><a href="https://example.com">Link</a></td>
<td>City funded (city-owned land), partnerships with non-profit and educational institutions, Hamilton Community Foundation</td>
<td>As part of an initiative to increase food security in the ALR, this project aims at urban farms in the green space before the former site, Metcal’s school is being developed. These urban farms address the issue of securing nutritious and sustainable food for the community. It will also act as a positive change in the neighbourhood by providing volunteer opportunities for citizens of all ages, adding economic value to the community, and fostering strong bonds among residents in the ALR.</td>
<td>Community gardening space, an in-vineyard shop, a produce stand, and a community garden. The farm is managed as a social enterprise and offers opportunities for residents to do farming work.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine Wheel Garden</td>
<td>Toronto, ON</td>
<td><a href="https://example.com">Link</a></td>
<td>City wide, the Urban Alliance of Toronto and the Mississaugas of the New Credit First Nation</td>
<td>The Medicine Wheel Garden is a working farm that offers professional development courses, workshops, and tours. It is a non-profit organization.</td>
<td>The Medicine Wheel Gardens is a working farm that offers professional development courses, workshops, and tours. It is a non-profit organization.</td>
<td>Medicine Wheel, therapeutic gardening</td>
<td></td>
</tr>
<tr>
<td>Mid-Meadow Urban Farming Project</td>
<td>Midland, ON</td>
<td><a href="https://example.com">Link</a></td>
<td>City wide, the Urban Alliance of Toronto and the Mississaugas of the New Credit First Nation</td>
<td>The Mid-Meadow Urban Farming Project is a community garden that provides educational resources on composting, soil security, and heat management.</td>
<td>The Mid-Meadow Urban Farming Project is a community garden that provides educational resources on composting, soil security, and heat management.</td>
<td>This project was initiated through the Stop Community Food Centre.</td>
<td></td>
</tr>
<tr>
<td>Mia Hill</td>
<td>Vancouver, BC</td>
<td><a href="https://example.com">Link</a></td>
<td>City wide, the Urban Alliance of Toronto and the Mississaugas of the New Credit First Nation</td>
<td>Housing restoration project and community food production initiative. This project involves developing a community garden in the city. It provides a space for residents to grow their own food.</td>
<td>Housing restoration project and community food production initiative. This project involves developing a community garden in the city. It provides a space for residents to grow their own food.</td>
<td>Metroplis development and partnerships with community organizations.</td>
<td>Municipality funded development for residents under the Midle: Hill Community Housing Society.</td>
</tr>
<tr>
<td>Nolan Road Cupboard</td>
<td>Saint-Bruno, QC</td>
<td><a href="https://example.com">Link</a></td>
<td>Columbia Basin Trust, Community Food Garden Canada and others who donated infrastructure and supplies</td>
<td>The Cupboard Gardens is a edible urban farm where vegetables are grown for Nutrition Cupboard customers. The garden provides fresh produce to community members.</td>
<td>The Cupboard Gardens is a edible urban farm where vegetables are grown for Nutrition Cupboard customers. The garden provides fresh produce to community members.</td>
<td>Red-roofed lean-to, start in water management, edible landscaping.</td>
<td>The garden is managed by the Nolan Food Cupboard Society.</td>
</tr>
<tr>
<td>P/atch Community Gardens</td>
<td>Seattle, WA</td>
<td><a href="https://example.com">Link</a></td>
<td>A community gardening area around Seattle, 54 acres of the land used in addition to 85 acres for the public for a total of 32 acres</td>
<td>The P/atch Community Gardening Program, a program of the City of Seattle Department of Neighborhoods, oversees 80 P/atch plots distributed throughout the city. The P/atch community gardens are a partnership between neighborhoods and the city.</td>
<td>The P/atch Community Gardening Program, a program of the City of Seattle Department of Neighborhoods, oversees 80 P/atch plots distributed throughout the city.</td>
<td>Multi-use urban gardening plot.</td>
<td>The P/atch program is administered by the City of Seattle which makes space available for individual gardeners across the city.</td>
</tr>
<tr>
<td>PLOT Community Garden</td>
<td>Surrey, BC</td>
<td><a href="https://example.com">Link</a></td>
<td>City of Surrey, People’s Food Security Bureau</td>
<td>A group of community members have passed away to create a new garden in Surrey to create a food production, education, and land art installation. PLOT is a collectively activated space powered by as many owners and volunteers. The group has a one-year lease on the land which it has secured for the 2017 growing season.</td>
<td>A group of community members have passed away to create a new garden in Surrey to create a food production, education, and land art installation. PLOT is a collectively activated space powered by as many owners and volunteers. The group has a one-year lease on the land which it has secured for the 2017 growing season.</td>
<td>Part Nation in a controlled plot, called the plots, public art, beehkeeping.</td>
<td>Funded by community members and cultivated by volunteers on land that has been leased from the city in a one-year lease.</td>
</tr>
</tbody>
</table>
Appendix B: Public Feedback Forms

Public Feedback Form for Community Openhouse #1

Langley Urban Agriculture Demonstration Project - Community Open House #1

Participant Survey

Do you live in the City of Langley?  □  Yes  □  No

If not, where do you live? ____________________________________________________________

How did you hear about this project? ____________________________________________________

Do you live within walking and/or biking distance of the project site?  □  Walking  □  Biking

Do you actively use the site currently?  □  Yes  □  No

If so, how do you use it? If not, why not? ________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

What interests you most about this project? ____________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

What do you think are the biggest challenges for urban agriculture on this site? __________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

What do you think are the biggest opportunities for urban agriculture on this site? __________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Based on the amenity list presented at the Open House, which amenities would you most like to see incorporated into this site? Why?
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Do you have any remaining questions? About urban agriculture? About the Langley Urban Agriculture Demonstration project?
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

To receive project updates and invitations to any further community open house events, please leave your email below:
____________________________________________________________________________________

Thank you for taking the time to share your feedback with us! If you have any additional comments please use the back of this form.
Public Feedback Form for Community Openhouse #2

Langley Urban Agriculture Demonstration Project Community Open House #2

QUESTIONS TO CONSIDER

Do you live in the City of Langley?  Yes  No

If you would like to receive future correspondence about this project please provide your email address.

1. Of the OPTIONS, which do you prefer?
   - #1 THE CLASSROOM
   - #2 THE ORCHARD
   - #3 THE FARM

Why do you prefer this OPTION?

2. What modifications would you make to the OPTIONS?

3. What challenges do you think could arise with the proposed OPTIONS?

4. What additional comments do you have?

*Please use the back of this sheet if you need more space.

Langley Urban Agriculture Demonstration Project Community Open House #2

QUESTIONS TO CONSIDER

Do you live in the City of Langley?  Yes  No

If you would like to receive future correspondence about this project please provide your email address.

1. Of the OPTIONS, which do you prefer?
   - #1 THE CLASSROOM
   - #2 THE ORCHARD
   - #3 THE FARM

Why do you prefer this OPTION?

2. What modifications would you make to the OPTIONS?

3. What challenges do you think could arise with the proposed OPTIONS?

4. What additional comments do you have?

*Please use the back of this sheet if you need more space.
### Appendix C: Public Feedback

#### Public Feedback from Community Open house #1

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Y Y (back onto)</td>
<td>letter in mail</td>
<td>walking</td>
<td>occasionally walk dog</td>
<td>putting area to good use</td>
<td>parking who has access</td>
<td>people able to grow food for themselves, personal interaction with others</td>
<td>walking and sitting areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>making use of vacant city owned land</td>
<td>traffic and parking</td>
<td>to make better use of vacant land</td>
<td>not sure</td>
<td>waiting for more info to come</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>walk dogs, walk though on way to shopping</td>
<td>noise and traffic, would prefer natural park, not people centred</td>
<td>bee farming and orchard trees</td>
<td>pollinator garden community garden demonstration garden</td>
<td>not in favour of this proposal at this time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>access through traffic problems</td>
<td>parking</td>
<td>for rats to multiply</td>
<td>None</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>development of all weather trails</td>
<td>car access</td>
<td>civic open space to be enjoyed by all</td>
<td>Interested in all amenities proposed, suggest opening up pleasentdale creek, clean up salmon stream</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>local paper</td>
<td>walking</td>
<td>money and extra traffic this will make</td>
<td>traffic</td>
<td>none</td>
<td>none</td>
<td>good to have urban ag, not here. Who will attract all the rodents?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking, biking</td>
<td>whose paying for it?</td>
<td>maintenance. Ownership</td>
<td>not sure about opportunities yet, looking forward to more details</td>
<td>clear walking paths</td>
<td>who will have access? How will access be granted? Who is paying for this?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walk though</td>
<td>who's paying for it parking and traffic</td>
<td>some people get to enjoy gardening who may live in apartments</td>
<td>classroom. School garden, accessibility garden</td>
<td>will keep and interest in this project</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>Would like to see this located further out, Campbell valley park (poor location)</td>
<td>parking water supply</td>
<td>waste management, don’t want something that attracts more rats</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>is paying?</td>
<td>maintenance. Ownership</td>
<td>not sure about opportunities yet, looking forward to more details</td>
<td>clear walking paths</td>
<td>who will have access? How will access be granted? Who is paying for this?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>202 st push through waste trucks material loading fire revert back if fails who will pay</td>
<td>keeping residents involved</td>
<td>education</td>
<td>keep as is</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>biking</td>
<td>nothing</td>
<td>don't like it</td>
<td>none</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>bike commute</td>
<td>sustainable agriculture</td>
<td>security at night (lots of shady stuff going down) parking, traffic powelines opening 202 to traffic</td>
<td>lots of space, decent exposure</td>
<td>community farm training farm demo farm</td>
<td>Are there other sites?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N Y (brookswood)</td>
<td>letter in mail</td>
<td>no</td>
<td>all of it</td>
<td>vandalism</td>
<td>getting people of all ages outdoors, away from devices and screens</td>
<td>all of them, highly educational</td>
<td>Hurry up!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>years ago through work and school</td>
<td>walking</td>
<td>all great, education, food, sustainability, demonstration, template for hydro ROW</td>
<td>soil quality and drainage from old dump</td>
<td>education</td>
<td>children's garden community orchard ecological habitat outdoor classroom school garden pollinator garden training farm</td>
<td>concerned about animals because not patrolled at night</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>utilizing land that is sitting stagnant and neglected</td>
<td>attitudes</td>
<td>education, community connection, beautification, sharing</td>
<td>accessibility garden community garden training outdoor classroom school garden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y Y</td>
<td>letter in mail</td>
<td>walking, grandchildren ride bikes</td>
<td>access to water parking security who policies it?</td>
<td></td>
<td></td>
<td></td>
<td>Neighbour impacted will be up in arms concerned about property values what keeps people from coming and going all night long</td>
<td></td>
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</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>possibilities for education</td>
<td>traffic parking increased use of people not living in walking distance loss of privacy loss of property value</td>
<td>education</td>
<td>No opposed but don’t think it works here Lots here are large enough to have our own gardens traffic and parking would have an adverse effect on residents increased noise and disturbing ecosystem increased policing costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking, biking</td>
<td>concerns about cleanliness, safety and access</td>
<td>Access rodents homeless camps concern of bordering properties grow-ops</td>
<td>start small, evaluate and address the problems and challenges</td>
<td>possible orchard education</td>
<td>No livestock Have many concerns, but in theory support some of the concepts possible to locate this in an area with more parking and better access</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>area in constant use</td>
<td>a possible small project</td>
<td>maintaining access to nature habitat for birds, coyotes, rabbits water parking security for close by neighbours preventing increase of rats protect walk through access</td>
<td>pollinator garden wouldn't need security and could look wild</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking and biking</td>
<td>pollinator garden</td>
<td>security increased traffic parking ugly chain link fence takes away natural beauty blackberry and habitat preservation</td>
<td>parking access off 200 st</td>
<td>parking access off 200 st</td>
<td>No questions, concerned that people in power will not listen</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking the dog, good running trail</td>
<td>Do something with dead space, not a bad idea but there are concerns</td>
<td>parking access without opening up 202 st</td>
<td>getting the community out to take care of plots would be good for the community</td>
<td>What about wildlife that would be displaced by the project?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking wildlife viewing</td>
<td>Nothing. We will have all the rodents and wildlife in our backyards</td>
<td></td>
<td>put money into upgrading existing trails</td>
<td>No questions, concerned that people in power will not listen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking wildlife viewing, good for fitness and mental health</td>
<td>resent the idea that natural habitat for song birds and wild animals will be destroyed</td>
<td>biggest challenge is for people to accept that wildlife habitat is being destroyed. Residents have previously fought golf course/driving range on this site</td>
<td>no opportunities for urban wildlife if project goes ahead</td>
<td>Leave this area peaceful and undisturbed for wildlife</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking dog, daily enjoyment as we back onto the site</td>
<td>how the site will be developed in terms of construction activity and increased traffic food production could be shared with community kitchens and food bank</td>
<td>increase of traffic and noise structures that will block views change the current landscape</td>
<td>enhance community sharing food crops with homeless shelters and community kitchens</td>
<td>How will construction noise and disruption be mitigated? How will use of site be monitored? How will traffic, both auto and people, be controlled or monitored? Go for it, just do it well!</td>
<td></td>
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</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>local paper</td>
<td>approx. 4 times a week, Langley has lots of trails - love it</td>
<td>to use land for something useful</td>
<td>parking</td>
<td>show people how to garden</td>
<td>great to make use of area</td>
<td>Hopefully still will be able to walk dog here!</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking to school and Brookswood</td>
<td>the area could be beautiful, removal of blackberry</td>
<td>concern about how busy the area could become parking lots</td>
<td>School garden pollinator garden accessibility garden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking and biking to dog park and trails</td>
<td>for it to be used wisely with tax payers and property owners in mind</td>
<td>chasing rats and rabbits onto property homeless people parking problems</td>
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<tr>
<td>Y</td>
<td>Y</td>
<td>Letter in mail</td>
<td>Walking with dogs and family</td>
<td>the negative effects on my neighbourhood</td>
<td>parking, currently very limited increased traffic safety</td>
<td>non residents homeless gathering place need for security increased rodents should be for the use of surrounding residents loss of trees that buffer noise from traffic</td>
<td>none</td>
<td>none- would like this to remain a passive park with trails</td>
<td>Would like to see more info about how each specific option would be integrated</td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Local paper</td>
<td>Dog walking</td>
<td>keeping hydro ROW clear</td>
<td>learning and hands on classroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N (Brookswod)</td>
<td>Y</td>
<td>Local paper</td>
<td>Dog walking and biking</td>
<td>visibility on site, more people means more security and safety</td>
<td>access water parking (only 200 st or 206)</td>
<td>teaching people about gardening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Letter in mail</td>
<td>Biking, walking</td>
<td>nothing</td>
<td>removal of greenbelt loss of wildlife added traffic non-residents parking on street washroom location</td>
<td>a large teaching garden could donate food to food bank and not increase traffic</td>
<td>training farm and outdoor classroom would both limit traffic, no large parking lot or washrooms needed maintain greenery and buffer from 200st</td>
<td></td>
<td>Why not put this closer to the city centre? People in area have their own properties to plant how will backing properties be compensated for loss of property value</td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Letter in mail</td>
<td>Running, walking dogs, bike riding</td>
<td>community involvement, gardens are always a good idea, attracting birds and bees</td>
<td>flow of traffic, people to the area</td>
<td>ecological enhancement</td>
<td>pollinator garden community garden back to nature is important</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Letter in mail</td>
<td>Not anymore - once walked dogs and used actively</td>
<td>concerned about sustainable food supply we need to grow more of our own food locally</td>
<td>concern about power lines</td>
<td>community garden, partnership with Kwantlen research support volunteer opportunities education for children and students</td>
<td>all would have positive outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Letter in mail</td>
<td>Walk dogs, bike</td>
<td>cleaning up the area, having some kind of security</td>
<td>keeping security parking no pesticides looking after property in july and august and during winter</td>
<td>organic gardening for schools</td>
<td>demo garden no pesticides used keep area clean</td>
<td>Do not want community plots, too much traffic no outdoor washrooms parking is a concern</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Local paper</td>
<td>Walking, biking, sledding</td>
<td>community involvement education for schools and older people</td>
<td>better use of over grown land teaching opportunities</td>
<td>accessibility garden children's garden community garden ecological habitat Incubator farm outdoor classroom pollinator garden training farm school garden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No</td>
<td>Letter in mail</td>
<td>No garden produce and public education</td>
<td>soil nutrients (lack of)</td>
<td></td>
<td>varied crops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Letter in mail</td>
<td>Walking recreation</td>
<td>possible to protect or improve ecological area</td>
<td>public support, hydro restrictions, public support</td>
<td>expand current uses</td>
<td>ecological restoration pollinator habitat wetland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N (Walnutgrove)</td>
<td></td>
<td>Kwantlen - horticulture program</td>
<td></td>
<td></td>
<td>food production, sustainability</td>
<td>power lines/health</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>I think a community garden is great but not in our backyard</td>
<td>wildlife</td>
<td>Good idea for condos or townhomes but not for people who have their own yards to garden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>relaxing</td>
<td>Nothing</td>
<td></td>
<td></td>
<td></td>
<td>Why can’t this be somewhere else?</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>child/dog</td>
<td>Making our neighbourhood more beautiful</td>
<td>encroachment on existing homeowners</td>
<td>maintain dog walking and recreation trails to keep neighbour happy</td>
<td>Washrooms-locked at night because of homeless</td>
<td>Will/can this open the door to chickens or beekeeping in Langley City?</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>neighbour, mail</td>
<td>walking</td>
<td>traffic</td>
<td>parking</td>
<td>Park homeless people</td>
<td>keep the undeveloped natural location that is enjoyed by residents</td>
<td>I believe in UA but not on this site, not a good location</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>newspaper</td>
<td>walking</td>
<td>rats eating the food</td>
<td></td>
<td>Displacing wildlife</td>
<td>None - school projects are best done on school property</td>
<td>What will be done with all the extra rats?</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking, daily</td>
<td>food production</td>
<td></td>
<td>Access local food production</td>
<td>Demonstration centre</td>
<td></td>
<td></td>
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<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking, dog</td>
<td>not interested, would like to see this site remain as it is</td>
<td>traffic</td>
<td>Good idea for those who don’t have space to grow food. Idea good, location not</td>
<td>Not interested in seeing this project located here</td>
<td></td>
<td></td>
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<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>not interested, live off 202 and worried about parking and access</td>
<td>People bought here to be on a quite dead end street, we have fought to keep 202 closed twice</td>
<td>Good idea for those who don’t have space to grow food. Idea good, location not</td>
<td>access of 200 only, parking at west end under power line to not impact residents, increased traffic as is</td>
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<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>parking and where it will be</td>
<td>school children can learn about agriculture</td>
<td>Good idea for those who don’t have space to grow food. Idea good, location not</td>
<td>Who will maintain and ensure safety?</td>
<td>Who will pay for this? Who will maintain cleanliness? Are other areas being considered (west side of 200th street on underutilized areas, Buckley Park)?</td>
<td></td>
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<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>parking</td>
<td></td>
<td>Put this somewhere else</td>
<td>Who will maintain and ensure safety?</td>
<td>Who will pay for this? Who will maintain cleanliness? Are other areas being considered (west side of 200th street on underutilized areas, Buckley Park)?</td>
<td></td>
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<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walking</td>
<td>good use of land</td>
<td>surrounding residents want to keep low traffic on their roads</td>
<td>Good idea for those who don’t have space to grow food. Idea good, location not</td>
<td>Lockable washrooms, fences with locked private plots</td>
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<tr>
<td>Y</td>
<td>Y</td>
<td>newspaper</td>
<td>walking</td>
<td>urban food production allotment gardens</td>
<td>resistance from neighbour vandalism</td>
<td></td>
<td>Community involvement in food production education for adults and schools</td>
<td>Community food garden ecological areas accessibility garden children’s garden incubator garden</td>
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<tr>
<td>Y</td>
<td>Y</td>
<td>letter in mail</td>
<td>walk and bike</td>
<td>I like the idea of enhancing the area</td>
<td>parking attracting too many people and disrupting community</td>
<td>enhance current park issues and not introduce new uses</td>
<td>Ecological habitat too much lost already</td>
<td></td>
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<tr>
<td>N</td>
<td>Langley Field Naturalists</td>
<td>no</td>
<td>protecting wildlife corridor</td>
<td>security</td>
<td>growing food</td>
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<tr>
<td>Do you live in the City of Langley</td>
<td>Which option do you prefer?</td>
<td>Why?</td>
<td>What modifications would you make?</td>
<td>What challenges could arise?</td>
<td>Additional Comments</td>
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<tr>
<td>2</td>
<td>If I had to pick #2</td>
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<tr>
<td>2</td>
<td>Only using a small portion of the site with access off 200st. Perhaps only to 201st.</td>
<td></td>
<td>Parking - if parking lost is created the parking on 46A/203 and others should be evaluated i.e. no parking on both sides of street for safety</td>
<td>Rats</td>
<td>Please leave the majority of the site for wildlife. Ecological system in place</td>
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<tr>
<td>Y 2</td>
<td>I moved to this area because my home bordered the easement. I wanted a quieter life. This option seems to have less people and activity</td>
<td></td>
<td>Outdoor school gathering space so it can still offer seating for classes</td>
<td>Concern about parking along 202 st to be able to access middle of farm. Hopefully there will be well communicated allowances for parking on site when needed.</td>
<td>Trust seems to be a big issue that needs to be overcome, I hope staff and council can reflect on what caused this. Concern orchards will bring in homeless people and goods may be stolen. Concern about mowing and other machinery needed to maintain site. Concern about time needed to maintain classroom and orchard options. Huge concern of pesticides used on trees in orchard. Love pollinator pathways.</td>
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<tr>
<td>Y 3</td>
<td>Bees, producing food and opportunities for education beyond elementary school classrooms. As there are already opportunities, or possibly, available in school yards.</td>
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<tr>
<td>N 3</td>
<td>Food production. People will be there</td>
<td></td>
<td>Parking for school bus. Existing parking lot will be dangerous</td>
<td>Public Buy-in. Vandalism. Long term management/care</td>
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<tr>
<td>Y 3</td>
<td>opportunity for non-profit to develop food source</td>
<td></td>
<td>clarity on who will be using theft vandalism impact on current residents backing on to greenway</td>
<td>is there anything wring with current use? Seems to be used regularly</td>
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<tr>
<td>Y 3</td>
<td>Good way to clean up area</td>
<td></td>
<td>Possible theft of food</td>
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<tr>
<td>Y 1,2,3</td>
<td>Any of choices are good</td>
<td></td>
<td>If this doesn't go forward playing fields could go in</td>
<td>There is a big rat problem in the area, where would they go?</td>
<td>I think it should go for a vote</td>
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<tr>
<td>Y 1,2,3</td>
<td>keep it simple</td>
<td></td>
<td></td>
<td>restrooms</td>
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<tr>
<td>Y 1,3</td>
<td>I like the idea of mixing farm and classroom</td>
<td></td>
<td>Like classroom and school involvement also farm growing veggies would be ok</td>
<td>Don't like orchard. Fruit would drop and cause issues with pests</td>
<td>If expecting school buses, make space for them to turn around. Lot is small for them</td>
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<tr>
<td>Y 1,3</td>
<td>Combine farm and classroom</td>
<td></td>
<td>For parking make big enough for bus parking. Otherwise it will not be usable for a classroom</td>
<td>The orchard would be a mess because people would not pick the fruit</td>
<td>Proper washrooms (flush and water) Do not open 203 st</td>
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<tr>
<td>Y No Development</td>
<td>Leave as passive park with adjustments like removing invasive plants</td>
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<td></td>
<td>Realize that one letter, one formalized response represents many. 1 letter represents 25-500. View petitions in the same way. Avoid separating factioning, bring people together Let us hear from the people whose ideas these are There is an air of disenfranchisement. That could be changed</td>
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<td>Y No Development</td>
<td>I enjoy the urban feel and seeing wildlife in its natural element is the best way to see it.</td>
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<td>I have lived in the city for 17+ years and I like the way it is. Please leave it alone.</td>
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<td>Y No Development</td>
<td>We bought in this city for the privacy and passive park land. We stand to directly suffer with these plans.</td>
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<td>Not happy that the City omitted the option to leave this land as is. Residents feel bullied and censored,</td>
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<td>Do you live in the City of Langley</td>
<td>Which option do you prefer?</td>
<td>Why?</td>
<td>What modifications would you make?</td>
<td>What challenges could arise?</td>
<td>Additional Comments</td>
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<td>Y</td>
<td>1</td>
<td>There are lots of small farmers in the Fraser Valley, they need continual replacement of new farmers and this could inspire young people to farm or to understand why they should support small scale food producers.</td>
<td>Orchard issue: long term management could be an issue and it could falter and decline. The continual management of a school garden brings stability to the site</td>
<td>What happens when school is out for the summer? How is engagement encouraged in summer months?</td>
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<tr>
<td>Y</td>
<td>1</td>
<td>Because of educational aspects, but with modifications</td>
<td>Keep classroom and use it for children education plus adult workshops etc. Combine school garden and community farm keep community orchard and beehives include native berries in orchard area</td>
<td>main concern is about vandalism. How will this be addressed? Otherwise this is a good use of barren land and can serve the community well if properly managed.</td>
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<tr>
<td>Y</td>
<td>1</td>
<td>Because it focuses on a practical designable use for the area with a demographic in mind. It also seems to require the least upkeep</td>
<td>Concerned about annual maintenance and proper upkeep has not been taken into consideration. I foresee the development becoming overgrown and broken down in short time</td>
<td>Increased transient presence in my neighbourhood (my property backs on to site) Increased pests and rodents. Increased traffic and parking on my street.</td>
<td>I am not opposed to development of change. I like the design ideas and the variety of options. I fear there is a lot of development that needs to happen to address residents concerns. The Derek Doubleday arboretum has a demo garden which is only upkeep May-Sept. This project will become overgrown, vandalized without regular staff or group to upkeep it. Most residents have gardens of their own so community garden in unnecessary - but we would be the ones who would have to upkeep it because we live close and access it often. I also fear that 202 st will be connected on both sides and I would be unhappy if this happened. I support the project as a classroom because its purpose seems more clear and defined by use of local schools. Don’t forget the upkeep and long range planning!</td>
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<tr>
<td>Y</td>
<td>2</td>
<td>Opposition from neighbours regarding parking Financing</td>
<td></td>
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<td>Y</td>
<td>2</td>
<td>Like the amount of habitat areas pollination area and orchard forest. This feels like the most natural of the tree options</td>
<td>Worried about crime increase, homeless people adopting the area. I have young kids and like to walk and bike in the area</td>
<td>Increasing crime is a concern. I currently don’t feel safe walking in Langley City North of the powerlines</td>
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<td>Y</td>
<td>2</td>
<td>Rats come with vegetables. Most people in the area grow some veggies. Designs look nice.</td>
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<td>Y</td>
<td>2</td>
<td>Would look attractive and be lower maintenance than other options. Love the option of pollinator corridor with lots of flowers.</td>
<td>Theft and vandalism may be a concern depending on a final design.</td>
<td>I think the implementation of this type of plan will be a huge improvement to the area. I like all the options presented and some combination of the three could be a good compromise</td>
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<td>Y</td>
<td>2</td>
<td>Looks like less human traffic, orchard for food use is a benefit to the community</td>
<td>Ensure no parking in subdivision areas if fertilizer is used it should be organic</td>
<td>Parking on residential streets keeping wild animals out of garden</td>
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<tr>
<td>Do you live in the City of Langley</td>
<td>Which option do you prefer?</td>
<td>Why?</td>
<td>What modifications would you make?</td>
<td>What challenges could arise?</td>
<td>Additional Comments</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>too many kids in the area to bring in traffic - the area is already being enjoyed by the public, kids, dogs, wildlife for the added costs to the city</td>
<td>Leave area as is</td>
<td>No reason for construction to a perfectly fine area that can be enjoyed by everyone already</td>
<td>Leave it alone waste of money wrecking natural habitat wrecking homes for wildlife dangering my kids with way more traffic give us the option to leave the area alone</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>Leave area as is</td>
<td>Don’t do it</td>
<td>Where are animals going Rats go to houses</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>Leave as is</td>
<td></td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>No options needed</td>
<td>No Modifications</td>
<td>Traffic issues, homeless camps</td>
<td>Leave it alone</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>1-3 are the same with different names for gardens. Poorly prepared design and layout, no parking. Not true consultation. Poorly designed and thought out</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>Do not want it</td>
<td>Stop planning</td>
<td>Traffic homeless problems</td>
<td>Please forget this project</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>I think all options are good, wrong location</td>
<td></td>
<td>parking, more traffic</td>
<td>I live on 202st and I like the quiet street</td>
<td></td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>Keep Brookswood the way it is</td>
<td>leave it be</td>
<td></td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>Traffic parking on 202 st. No one will wheelbarrow from 200st uphill</td>
<td>Find a more suitable site. Downtown where residents who will use the site live Douglas park of Kwantlen</td>
<td>Parking Traffic</td>
<td>The people of our street 202 are tired of public forums where people don’t listen</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>the school garden is too big, kids won’t work the garden</td>
<td>My options, I do not like it</td>
<td>Where all the rats going in my yard</td>
<td>Keep it as a park</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>There are too many negatives that could/ would potentially happen as a result of development</td>
<td>too many to list</td>
<td>Increased amount of people coming to neighbourhood resulting in theft and vandalism. Parking issues. Loss of recreation area</td>
<td>Save the money and leave this right of way area alone, especially the blackberries. This is one of the few areas in the city that is still untouched. Developing it would not benefit the surrounding community it could bring outsiders who would not show the area the same respect that neighbours currently do.</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>I believe the proposed site is inappropriate for garden because it is a valuable wild piece of Langly in its untouched state</td>
<td>More the location, move to a more suitable one. A more high density area would need this more that the area presently proposed</td>
<td>Peaceful area of Langley would become overrun by cars our street would become parking lot</td>
<td>Don’t go through with this. You have not asked those of us who live here. You make it sound like a done deal without any consultation of residents</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>I don’t we are suburban, not urban</td>
<td>If there are funds you don’t know what to do with you can regravel the path</td>
<td>It is a necessary wildlife corridor to connect ravines</td>
<td>Let Kwantlen students do studies on campus site. We wouldn’t benefit</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>Wrong area, waste of money, too much wildlife. Everyone in the area has a yard. No need for more bees (allergies)</td>
<td>Do this in an urban area not a sub-urban one. Everyone has a garden already</td>
<td>Where does the water come from? What about homeless people? What about bathrooms? Who gets the food?</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>I love the space the way it is I use it all the time and enjoy the wildlife natural landscape</td>
<td></td>
<td>Too much traffic</td>
<td>Please leave the space as is</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>Like the way things are</td>
<td>Leave it alone</td>
<td>Rats and animals will come to our house. Punk kids will destroy things. Increase traffic</td>
<td>If not broke, don’t fix it. Put garden at Douglas park</td>
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<tr>
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<td>Y</td>
<td>No Development</td>
<td>This option makes more sense</td>
<td>Who gets the food? Who maintains area? Who gets access?</td>
<td>Bees - what if there are allergies? Where is water coming from What about restrooms? What about animals? What about attracting rats? What about prop. Values?</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>Development of a community garden is unnecessary at this site as it is not beneficial to local residents who have bog yards enough to have their own gardens if they choose. Development will bring an influx of people who will disrupt the quiet of the neighbourhood and will also disrupt the existing biosphere that is enjoyed by the local population</td>
<td>Discard them all</td>
<td>Increased traffic opens area to undesirable land use Increased monitoring and policing costs Decreased property values disrupt the existing lifestyles of residents</td>
<td>Where does water come from? Is the area to be completely fenced? Is the boundary to be the full extent of the ROW?</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>I am against all options</td>
<td>Habitat for wildlife rabbits and birds quiet area now well used by walkers, rider, joggers</td>
<td>promotes parking in surrounding dead end streets</td>
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<tr>
<td>Y</td>
<td>No Development</td>
<td>None of the above</td>
<td>Habitat for wildlife rabbits and birds quiet area now well used by walkers, rider, joggers</td>
<td>Loss of natural green space</td>
<td>This is not the right area for an urban garden. We are not urban near the ROW. Most of us have garden space on our own properties I do not want people living in the downtown core to park on my street which is now quiet and safe.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>All three options have parking in an unsafe location, just over the crest of a hill</td>
<td>Habitat for wildlife rabbits and birds quiet area now well used by walkers, rider, joggers</td>
<td>If it’s not broken don’t fix it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>Leave as is but a major clean up and maintenance agreement for the future</td>
<td>Habitat for wildlife rabbits and birds quiet area now well used by walkers, rider, joggers</td>
<td>As listed above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>Only use the area from 200st to 201st so that the majority would remain unchanged</td>
<td>Habitat for wildlife rabbits and birds quiet area now well used by walkers, rider, joggers</td>
<td>Leave majority alone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you live in the City of Langley</td>
<td>Which option do you prefer?</td>
<td>Why?</td>
<td>What modifications would you make?</td>
<td>What challenges could arise?</td>
<td>Additional Comments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------</td>
<td>------</td>
<td>-----------------------------------</td>
<td>-----------------------------</td>
<td>----------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>Any other option will push rodents into our yards and houses</td>
<td>Put community gardens close to community that needs land to grow i.e. condos and apartments</td>
<td>rats in my yard homeless people attracted to free food teenagers will be given a target for hangouts and crime</td>
<td>My house and property value will go down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>Enjoying pathways the way they are. Nature and all its beauty now</td>
<td>Parking on residential street would be next, lose privacy and increase traffic for us</td>
<td>Every 15 years new ideas come. They haven’t maintained it now. At first they will and then it will go downhill and back to no maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Good idea, wrong place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>No change necessary, area not broken</td>
<td>None - do not change area. Stop planning traffic issues on 202 St. Speed concerns</td>
<td>No option is good</td>
<td>Find elsewhere. This area is not broken. Leave the area and existing homeowners alone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>I don’t prefer any of the options. I am in favour of option 4, leave as wildlife corridor</td>
<td>Put them in a more desirable location</td>
<td>It would disrupt the wildlife and bird habitat and the peace and tranquility of the community</td>
<td>It seems that the agenda has already been decided and that there are no choices. The definitive choice is to leave the area alone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>The area is home to various wildlife. We don’t need community gardens because we all have yards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>Leave it alone. There are mature trees for wildlife. Residents enjoy the pathways the way they are. Do not need orchards and gardens to enjoy nature.</td>
<td>Loss of wildlife. Loss of privacy for homeowners. Increase of traffic and parking in our neighbourhoods. Open to vandalism</td>
<td>The area does not need to be clearcut. Area can be left with existing trees. Maybe develop only half the site.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>Wildlife habitat, nature walk, nice natural area</td>
<td>have at 208th st where there is floodplain during winter and homeless camps during summer. Closer to Kwantlen</td>
<td>Please leave it alone as we were told it would be after the golf course was proposed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td>The area is too open to crime if changes in the area are allowed</td>
<td>Blackberry bushes left along fences to prevent fence damage and crime</td>
<td>lots of clean up and loss of habitat rat problem and rats will find new homes</td>
<td>Leave ROW as natural area with no changes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>I don’t prefer option 1-3. I would like to keep this as a natural wildlife corridor</td>
<td>Put them in more desirable location</td>
<td>This would disturb the wildlife and bird habitat and peace and tranquility of the area</td>
<td>There is a definitive choice to leave the ROW as is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>This is the worst idea. Leave it alone. No one would use a garden</td>
<td>Leave it alone the space is already being used in a great way. Dog walking, bike riding, nature walks</td>
<td>Increasing traffic in a neighbourhood where kids play endangering their safety</td>
<td>Stop wasting tax payer money and leave it alone. No need for a garden to pay people to maintain it. Stop taking away greenspaces that are well used. There is already Sendell Gardens in the City put these ideas there and stop wasting money.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Enjoy ecological system as is</td>
<td>Leave it alone, it is a wildlife corridor</td>
<td>Increased homelessness/ delinquent presence wildlife threatened</td>
<td>These options are unenforceable. Who would use the orchards and community garden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>No Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Do Not Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
## Appendix D: Amenity Budgets

### Capital and Operational Budgets for Site Servicing and Infrastructure

<table>
<thead>
<tr>
<th>Capital Expenses</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Preparation</td>
<td>$345,000.00</td>
</tr>
<tr>
<td>Entry Signage and Planting</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>Parking Area</td>
<td>$50,000.00</td>
</tr>
<tr>
<td>New Pathways and Resurfacing</td>
<td>$100,000.00</td>
</tr>
<tr>
<td>Water Connection</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>Pit Toilet</td>
<td>$40,000.00</td>
</tr>
<tr>
<td>Site Signage</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>Soil Testing</td>
<td>$6,000.00</td>
</tr>
<tr>
<td>Contractors and Consultants</td>
<td>$75,000.00</td>
</tr>
<tr>
<td>Electrical Servicing</td>
<td>$50,000.00</td>
</tr>
<tr>
<td><strong>Total Capital Expenses</strong></td>
<td><strong>$716,000.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operational Expenses</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Site Maintenance</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>Pit Toilet Maintenance</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Trail Maintenance</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Pest Control</td>
<td>$500.00</td>
</tr>
<tr>
<td>Replacement Plant Material</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>(non-production areas only)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Operational Expenses</strong></td>
<td><strong>$23,000.00</strong></td>
</tr>
</tbody>
</table>

### Budget Notes:

- Contractors and consultants could refer to additional services requires from professionals, such as: agronomists, soil specialists, or advisors on development of agricultural amenities.
- Operational expenses outlined here refer only to “non-amenity areas” i.e. pathways, servicing areas, washrooms facilities, parking area etc. Operational costs for amenity areas are outlines in the following amenity budgets.
- General site maintenance refers maintenance activities outside of production areas (i.e. mowing, pruning, pathway maintenance)
## Capital and Operational Budget for The Farm

### Capital Expenses

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Hub Building</td>
<td>$17,500.00</td>
</tr>
<tr>
<td>Concrete Slab @ 80m²</td>
<td>$6,500.00</td>
</tr>
<tr>
<td>Building Supplies</td>
<td>$8,000.00</td>
</tr>
<tr>
<td>Shelving</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Produce Washing Area</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Concrete Slab (part of storage building)</td>
<td>N/A</td>
</tr>
<tr>
<td>Building Supplies</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>Hoses and Fixtures</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Produce Storage</td>
<td>$5,100.00</td>
</tr>
<tr>
<td>Building Supplies</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>Shelving</td>
<td>$600.00</td>
</tr>
<tr>
<td>Cooling Equipment</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Composting Area</td>
<td>$5,700.00</td>
</tr>
<tr>
<td>Concrete Slab @ 40 m²</td>
<td>$3,200.00</td>
</tr>
<tr>
<td>Building Supplies</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>Irrigation System</td>
<td>$13,500.00</td>
</tr>
<tr>
<td>Valves, fixtures, and adapters</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Mainline and Sub-mainline</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Drip Tape</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>Water meters</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>Tools, Equipment and Supplies</td>
<td>$13,600.00</td>
</tr>
<tr>
<td>Walk behind tractor with tiller</td>
<td>$6,000.00</td>
</tr>
<tr>
<td>Walk behind tractor attachments</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>Hand tools</td>
<td>$1,600.00</td>
</tr>
<tr>
<td>Harvesting Equipment</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Flat Wheelbarrow</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Seeding Supplies</td>
<td>$800.00</td>
</tr>
<tr>
<td>Seeder</td>
<td>$800.00</td>
</tr>
<tr>
<td>Pest Management</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Ground cover/mulch</td>
<td>$500.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$61,000.00</strong></td>
</tr>
</tbody>
</table>

### Operational Expenses

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Operations</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>Transportation and Produce Distribution</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>Equipment Maintenance</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Irrigation Maintenance</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Crop Seeds</td>
<td>$600.00</td>
</tr>
<tr>
<td>Cover Crop Seeds</td>
<td>$150.00</td>
</tr>
<tr>
<td>Compost</td>
<td>$600.00</td>
</tr>
<tr>
<td>Pest Management</td>
<td>$150.00</td>
</tr>
<tr>
<td>Ground Cover/Mulch</td>
<td>$500.00</td>
</tr>
<tr>
<td>Personnel</td>
<td>$59,650.00</td>
</tr>
<tr>
<td>Farm Manager</td>
<td>$32,000.00</td>
</tr>
<tr>
<td>Farm Hand</td>
<td>$10,500.00</td>
</tr>
<tr>
<td>Intern(s)</td>
<td>$3,150.00</td>
</tr>
<tr>
<td>Programming Coordinator</td>
<td>$14,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$68,650.00</strong></td>
</tr>
</tbody>
</table>

**Budget Notes:**

- Budget estimates for all food production elements were made based on capital and operational expenses on the Tsawwassen First Nation Farm School operated by The Institute for Sustainable Food Systems.
- The cost of water has not been included in preliminary project budgets. An agreement with the City will have to be reached regarding water use and renumeration prior to project development.
# Capital and Operational Budgets for The Classroom

## Capital Expenses

<table>
<thead>
<tr>
<th>Expense</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Building</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>Building Supplies</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Shelving</td>
<td>$500.00</td>
</tr>
<tr>
<td><strong>Raised Beds</strong></td>
<td><strong>$8,000.00</strong></td>
</tr>
<tr>
<td>Building Materials</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Signage</td>
<td>$500.00</td>
</tr>
<tr>
<td>Drip Irrigation</td>
<td>$400.00</td>
</tr>
<tr>
<td>Soil</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>Compost</td>
<td>$600.00</td>
</tr>
<tr>
<td><strong>Irrigation System</strong></td>
<td><strong>$1,300.00</strong></td>
</tr>
<tr>
<td>Irrigation Supplies</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Water Meters</td>
<td>$300.00</td>
</tr>
<tr>
<td><strong>Tools and Equipment</strong></td>
<td><strong>$1,000.00</strong></td>
</tr>
<tr>
<td>Hand Tools</td>
<td>$500.00</td>
</tr>
<tr>
<td>Harvesting Equipment</td>
<td>$500.00</td>
</tr>
<tr>
<td><strong>Seating</strong></td>
<td><strong>$7,500.00</strong></td>
</tr>
<tr>
<td>Stump Seating</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Log Seating</td>
<td>$2,500.00</td>
</tr>
<tr>
<td><strong>Plant Material</strong></td>
<td><strong>$10,000.00</strong></td>
</tr>
<tr>
<td>Perennial plants</td>
<td>$10,000.00</td>
</tr>
<tr>
<td><strong>Micro Production Plots</strong></td>
<td><strong>$3,700.00</strong></td>
</tr>
<tr>
<td>Soil and Compost</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Mulch</td>
<td>$1,200.00</td>
</tr>
<tr>
<td>Seeds</td>
<td>$500.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$32,700.00</strong></td>
</tr>
</tbody>
</table>

## Operational Expenses

<table>
<thead>
<tr>
<th>Expense</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Maintenance</td>
<td>$7,000.00</td>
</tr>
<tr>
<td>Seeds and Gardening Supplies</td>
<td>$200.00</td>
</tr>
<tr>
<td>Tool and Equipment Maintenance</td>
<td>$300.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$7,500.00</strong></td>
</tr>
</tbody>
</table>
## Capital and Operational Budgets for The Orchard

### Capital Expenses

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Preparation</td>
<td>$5,250.00</td>
</tr>
<tr>
<td>Compost</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Ground Cover Seeds</td>
<td>$250.00</td>
</tr>
<tr>
<td>Mulch</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Plant Material</td>
<td>$12,650.00</td>
</tr>
<tr>
<td>Trees</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>Small Fruits</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>Production Infrastructure</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>Tree Guards</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Trellising and Tree Supports</td>
<td>$8,000.00</td>
</tr>
<tr>
<td>Irrigation</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>Irrigation Systems</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Water Meters</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Tools and Equipment</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>Harvesting Equipment</td>
<td>$500.00</td>
</tr>
<tr>
<td>Hand Tools</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Packing and Storage Supplies</td>
<td>$1,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$34,750.00</td>
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### Operational Expenses

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2 (-25% Y1)</th>
<th>Year 3 (-25% Y2)</th>
<th>Year 4 (-25% Y3)</th>
<th>Year 5 (-25% Y4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement Plant Material</td>
<td>$1,450.00</td>
<td>$1,087.50</td>
<td>$815.63</td>
<td>$611.72</td>
<td>$458.79</td>
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<tr>
<td>Tool and Equipment Maintenance</td>
<td>$300.00</td>
<td>$225.00</td>
<td>$168.75</td>
<td>$126.56</td>
<td>$94.92</td>
</tr>
<tr>
<td>Pest Control</td>
<td>$500.00</td>
<td>$375.00</td>
<td>$281.25</td>
<td>$210.94</td>
<td>$158.20</td>
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<tr>
<td>Compost and Soil Amendments</td>
<td>$525.00</td>
<td>$393.75</td>
<td>$295.31</td>
<td>$221.48</td>
<td>$166.11</td>
</tr>
<tr>
<td>Mulch</td>
<td>$500.00</td>
<td>$375.00</td>
<td>$281.25</td>
<td>$210.94</td>
<td>$158.20</td>
</tr>
<tr>
<td>Cover Crop Seed</td>
<td>$150.00</td>
<td>$112.50</td>
<td>$84.38</td>
<td>$63.28</td>
<td>$47.46</td>
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<tr>
<td><strong>Total</strong></td>
<td>$3,425.00</td>
<td>$2,568.75</td>
<td>$1,926.56</td>
<td>$1,444.92</td>
<td>$1,083.69</td>
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</tbody>
</table>
## Capital Budget for Ecological Restoration (Buffer Plantings, Habitat Areas)

<table>
<thead>
<tr>
<th>Capital Expenses</th>
<th>Per Acre</th>
<th>Buffer Planting</th>
<th>Habitat Areas (Wetland)</th>
<th>Habitat Areas (Riparian)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Preparation</td>
<td>$2,000.00</td>
<td>$8,000.00</td>
<td>$6,000.00</td>
<td>$6,000.00</td>
</tr>
<tr>
<td>Invasive Species Removal</td>
<td>$1,000.00</td>
<td>$4,000.00</td>
<td>$1,500.00</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Perennial Plant Material (1 gallon pots)</td>
<td>$10,000.00</td>
<td>$20,000.00</td>
<td>$5,000.00</td>
<td>$15,500.00</td>
</tr>
<tr>
<td>Perennial Plant Material (plugs)</td>
<td>$5,000.00</td>
<td>$10,000.00</td>
<td>$7,500.00</td>
<td>$7,500.00</td>
</tr>
<tr>
<td>Mulch</td>
<td>$1,200.00</td>
<td>$4,800.00</td>
<td>$1,800.00</td>
<td>$3,600.00</td>
</tr>
<tr>
<td>Compost</td>
<td>$500.00</td>
<td>$3,000.00</td>
<td>$1,125.00</td>
<td>$2,250.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$49,800.00</strong></td>
<td><strong>$22,925.00</strong></td>
<td><strong>$37,350.00</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Restoration Costs</strong></td>
<td><strong>$110,075.00</strong></td>
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</tr>
</tbody>
</table>

## Capital Budget for Pollinator Habitat Restoration (Corridor and Hedgerows)

<table>
<thead>
<tr>
<th>Capital Expenses</th>
<th>Per Acre</th>
<th>Hedgerows</th>
<th>Corridor</th>
<th>Site Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Preparation</td>
<td>$2,000.00</td>
<td>$1,000.00</td>
<td>$5,000.00</td>
<td><strong>$6,000.00</strong></td>
</tr>
<tr>
<td>Perennial Plant Material (plugs)</td>
<td>$5,000.00</td>
<td>$2,500.00</td>
<td>$12,500.00</td>
<td><strong>$15,000.00</strong></td>
</tr>
<tr>
<td>Seeds</td>
<td>$400.00</td>
<td>$200.00</td>
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<td><strong>$1,200.00</strong></td>
</tr>
<tr>
<td>Seeding and Transplanting</td>
<td>$1,000.00</td>
<td>$500.00</td>
<td>$2,500.00</td>
<td><strong>$3,000.00</strong></td>
</tr>
<tr>
<td>Compost</td>
<td>$500.00</td>
<td>$250.00</td>
<td>$1,250.00</td>
<td><strong>$1,500.00</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$4,450.00</strong></td>
<td><strong>$22,250.00</strong></td>
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</tr>
<tr>
<td><strong>Total Site Costs</strong></td>
<td><strong>$26,700.00</strong></td>
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</tbody>
</table>

## Total Area of Pollinator Habitat on Site

<table>
<thead>
<tr>
<th>Approximate Length</th>
<th>Hedgerows</th>
<th>Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length 1000m</td>
<td>550m</td>
<td></td>
</tr>
<tr>
<td>Width 2m</td>
<td>18m</td>
<td></td>
</tr>
<tr>
<td>Area 2000m²</td>
<td>9000m²</td>
<td></td>
</tr>
<tr>
<td>Acreage 0.5 acres</td>
<td>2.5 acres</td>
<td></td>
</tr>
</tbody>
</table>
10. Endnotes

1. Introduction

1 Lovell (2010) describes the multi-functional characteristics of urban agriculture citing projects that have successfully achieved a variety of outcomes including: social connection, urban greening, environmental sustainability, food literacy, food security and community health.


4 Knapp, L. et al, (2016) studied vulnerability in urban agriculture projects in the Netherlands and Switzerland discovering that resilience was connected to institutionalization of projects. This can include municipal support in the form of funding, policy change, and capacity building.


2. Site Assessment

7 The perception that urban environments are contaminated and therefore dangerous for food production is a common barrier to community buy in for urban agriculture projects. However, this is not the case for all sites. Site assessment, including soil testing and analysis is critical step for any UA project and is essential for gaining community support for projects.


3. Urban Agriculture in Hydro ROW Areas


27 The World Health Organization is responsible for aggregating data about the health impacts of EMF, and recognizes the increase in potential EMF exposure to the public in the modern environment.


5. Site Plan

34 Plans for pit toilet building available on the Leko Precast Ltd. website http://www.lekoprecast.com/toilet-buildings.html
35 Anecdotal accounts of wildlife seen on the site was collected from local residents at the Community Open House events.


37 Toronto Region Conservation Authority. (2017) Maintaining Your Pollinator Habitat: A Guide for Community Gardeners. http://trca.on.ca/dotAsset/150579.pdf. Accessed on: October 14, 2017. Although there is an investment of time and resources when establishing a pollinator habitat over the long term, these amenities are low maintenance. They also have a high positive impact for UA projects and for the broader environment, increasing biodiversity, building soil and creating aesthetically pleasing public spaces.


39 The Canadian Organic Standard is created and revised nationally and enforced by inspection agencies in local jurisdictions. UA projects may choose to not be certified organic (that is, inspected by a third party) but often use the organic practices outlined in the standard.


41 These estimates are based on plans for a Three Bin Composter available online from Metro Vancouver. http://www.metrovancouver.org/services/solid-waste/SolidWastePublications/CompostBinConstructionPlan-ThreeBin.pdf


43 Recommended dimensions for raised beds from the City of Vancouver Urban Agriculture Guide. These measurements are based on the average reach of a human, but may need to be adjusted if building beds for very young children.


6. Management Plan


11. References


City of Vancouver Persons with Disabilities Advisory Committee and Senior Advisory Committee. (2011). Background and Details Accessible Community Garden Guidelines. Vancouver.


Moreau, T. (2012). Delta Community-Based Farm District Planning Southlands as a Regionally Significant Model for Metro Vancouver, (October).


Mullinix, K. (2012). Fruit Tree Production: A brief guide to growing your own fruit in the city.


