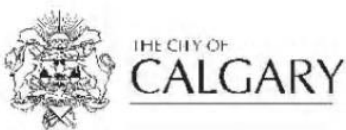


CALGARY EATS!

Summary

A Food System Assessment and Action Plan for Calgary



The Vision: to create a sustainable and resilient food system
for the Calgary region

*so that every Calgarian has access to local, healthy and
environmentally friendly food*

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The Calgary Foundation and The Mayor's Innovation Fund, The City of Calgary - Environmental & Safety Management, Land Use Planning and Policy, the Office of Sustainability, Parks , Waste & Recycling Services and Infrastructure & Information Services.

Calgary Food Committee

The Calgary Food Committee (CFC) is a multi-sector stakeholder group with representatives from each element of Calgary's food system who united to provide information and guidance in completion of this Food System Assessment and Action Plan. Members have dedicated significant amounts of time and expertise to this project and continue to support and deliver on the vision for a sustainable food system for Calgary through their individual businesses and programs. CFC members are listed in the Calgary Food System Assessment and Action Plan.

Consultants

Serecon Management Consulting, supported by Altus Group.

Speakers & Event Sponsors

The CFC was able to showcase many of the producers, processors, distributors, chefs, program managers and educators amongst others who form part of Calgary's food system at several of our stakeholder and citizen engagement events. Sponsors and speakers are named in the Calgary Food System Assessment and Action Plan and vendors are named at www.yycfood.com.

Stakeholders & Stories

The CFC engaged more than 360 organisations and over 1400 citizens in the completion of this work, yet inevitably there will be organisations and success stories that were not captured in the time available and within the pages of this document. The CFC recognises that the success of our food system relies heavily upon collaboration and the CFC was fortunate that these many and diverse stakeholders were so willing to share their experiences, participate in engagement and provide input and feedback to this report. Thank you for your work and for moving us towards a sustainable food system for Calgary.



EXECUTIVE SUMMARY

This report presents a summary of the Calgary Food System Assessment and Action Plan. The purpose of the assessment was to:

1. outline a vision for a sustainable food system for Calgary and the region;
2. develop a comprehensive baseline and framework of Calgary's current food system to include an understanding of issues, opportunities and practices from other jurisdictions;
3. provide a gap analysis between the current state and the vision; and
4. create a community action plan identifying implementable and locally appropriate recommendations to address Calgary's food system issues.

The Calgary Food System Assessment and Action Plan has been completed in response to growing citizen demand and community awareness of the value of a sustainable food system. This resulted in a direction from Council to complete this assessment. The Calgary Food Committee (CFC) was established to guide and direct the development of the Food System Assessment and Action Plan, of which the outcome has been a collaborative effort, engaging many stakeholders.

The assessment provides a profile of Calgary and then addresses each element of the food system including production, processing, distribution, access, consumption and food waste recovery. This includes baseline data, maps, issues, opportunities, practices from other jurisdictions and a gap analysis showing the distance between the current system and imagineCALGARY targets.

The findings from the assessment indicated that there is a gap between Calgary's current state and the vision and targets for a sustainable food system as identified in imagineCALGARY. In addition to gaps and resulting recommendations within each element, one of the biggest challenges identified was the absence of data to establish baselines, develop indicators and measure progress toward the targets. This is the first time there has been a consolidated effort to look at the food system as a whole and the resulting high-level action plan identifies what needs to be done and by whom to close the gaps and collect the appropriate data.

The action plan is developed around a framework that identifies the intervention points that connect through each element of the food system for actions to take place. The actions that relate to regulation, legislation and advocacy, planning and land use, and transportation and logistics generally focus on the provincial and municipal governments leading with support from other stakeholders. Actions related to environmental considerations, economic development, community and education programs impact all sectors of the food system. Various stakeholders were identified to take leading roles on the actions including stakeholders in the market, community, charitable and institutional food sectors. The governance and on-going stewardship and coordination of the action plan will be led by the CFC to ensure alignment with imagineCALGARY.

This document provides a condensed summary of the assessment. It should be read in conjunction with the complete Calgary Food System Assessment and Action Plan where references, data, maps, stories, inventories and additional analysis can be found, available online at:
<http://www.calgary.ca/CA/cmo/Pages/Calgary-Food-System-Assessment-and-Action-Plan.aspx>.



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1.0 INTRODUCTION

Food is a key part of our daily lives. It plays an important role in supporting community economic development, promoting health, conserving the environment and building strong, resilient and diverse communities. Throughout the world, individuals are making personal choices to support local producers and grow their own food; farmers' markets, community gardens and local food initiatives are on the rise and municipalities are taking on significant roles within their food system, often partnering with community organizations as they pursue sustainability.

The food chain is a fragile system dealing with products that often have a limited shelf life and is reliant on basic inputs such as fuel, water and transportation. Calgary residents consume nearly \$2 billion in retail food sales annually of which 35% are perishables. In the average North American home, ingredients for a small meal usually travel between 1,500 kilometres (km) and 4,000km to get to our plates. This not only impacts our ecological footprint, 16% of which was attributed to food consumption in Calgary in 2010, but also impacts our resiliency. Stocks of fresh food in supermarkets are typically limited to a three day supply, making a city's food supply vulnerable to a wide range of possible disruptions including transportation, extreme weather and rising fuel prices. In parallel, there is increasing evidence of rising health issues directly and indirectly linked to nutrition and our food system; currently three million Canadians have diabetes and an additional six million have pre-diabetes, which was estimated to cost Canada \$12 billion in 2010 from health care costs.

A food system in its simplest form is a network connecting food production, processing, distribution, access, preparation, consumption and food waste recovery. In a city where approximately three and a half million meals are eaten every day and the average household spends \$8,544 on food a year (third to shelter and transportation) it is clear that the food system has a large role to play in Calgary.

A focus on food not only represents opportunities for enhancing citizens' quality of life, but also acts as a lever for achieving many goals and objectives of municipalities, including those related to complete communities, transportation, mobility, economic development, waste management, greenhouse gas (GHG) emissions, cost of living, health, community wellbeing and liveability. Therefore, promoting a sustainable food system can support The City of Calgary goals, objectives and targets outlined in City policies (Municipal Development Plan, Calgary Transportation Plan, Community Greenhouse Gas Plan etc), Council's Fiscal Plan for Calgary and The City's 2020 Sustainability Direction. Notably, it contributes to the achievement of the six food-related imagineCALGARY Long Range Urban Sustainability Plan targets.

This report presents a summary of the Calgary Food System Assessment and Action Plan. The assessment outlines a vision for a sustainable food system for Calgary and the region; the Calgary profile; baseline data, maps, issues, opportunities and practices from other jurisdictions; gap analysis and the resulting action plan. The assessment is supported by Geographic Information System (GIS) analysis. This summary document should be read in conjunction with the complete Calgary Food System Assessment and Action Plan where references, data, maps and additional analysis can be found, available online at: <http://www.calgary.ca/CA/cmo/Pages/Calgary-Food-System-Assessment-and-Action-Plan.aspx>.

**The Vision: to create a sustainable and resilient food system
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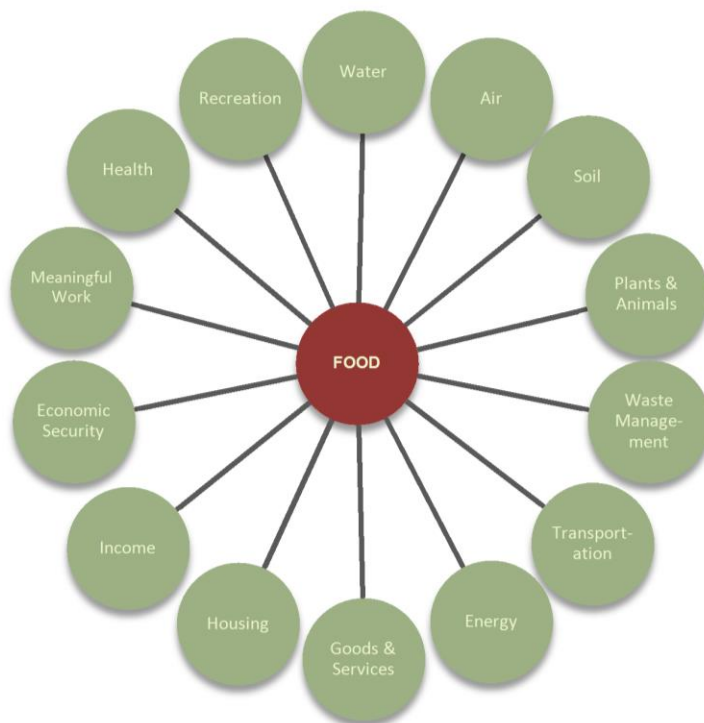


2.0 APPROACH

imagineCALGARY took an innovative approach to develop a 100 year vision and long range urban sustainability plan for a sustainable future and exceptional quality of life. The plan included goals to achieve the vision and a series of targets as reference points for achieving the goals. In developing the plan, Calgary was viewed as a whole system, of which all the parts are connected and inter-related. People, buildings, commerce, roads, businesses, skills, government structures, incomes, plants and animals, history, churches, schools and other elements combine to make up our community.

One of those system elements is food. Food is a necessity of life and is essential for contributing to a vibrant, liveable, resilient city with connections to many parts of the system (see Figure 2.1). It has an important role in supporting community economic development, promoting health, conserving the environment and building strong, culturally diverse communities.

FIGURE 2.1: THE CONNECTIONS OF FOOD WITHIN IMAGINECALGARY



A food system in its simplest form is a network connecting food production, processing, distribution, access, consumption and food waste recovery (Figure 2.2). imagineCALGARY defined a sustainable food system through a goal and set of targets based on engagement of over 18,000 citizens and specialists in 2005. The goal and targets provide the strategic purpose of the food system assessment. The focus of which is to analyze the current state of Calgary's food system and recommend indicators and actions to strengthen the food system.

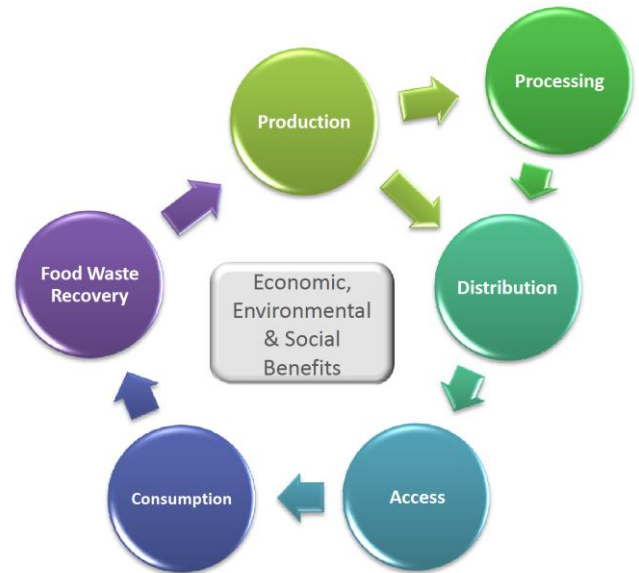


GOAL: Food sources derive from sustainable practices that provide us with a high quality, healthy, affordable and secure supply of food.

TARGETS: The six imagineCAGARY food related targets built on principles that further ecological, social, and economic values of a community and region.

- By 2036, Calgarians support local food production. **LOCAL**
- By 2036, Calgary maintains access to reliable and quality food sources. **SECURE SUPPLY**
- By 2036, 100 % of Calgary's food supply derives from sources that practice sustainable food production. **ENVIRONMENTALLY SUSTAINABLE**
- By 2010, 100 % of Calgarians have access to nutritious foods. **HEALTH AND ACCESS**
- By 2036, sustainable urban food production increases to 5 %. **LOCAL**
- By 2036, the consumption of urban and regionally produced food by Calgarians increases to 30%. **COMMUNITY DEVELOPMENT**

FIGURE 2.2: SUSTAINABLE FOOD SYSTEM



Using the six targets as reference points, a set of principles for a sustainable food system were developed to guide the assessment and action plan. One of the outcomes was to develop a set of **indicators** to measure or indicate the progress toward the targets. These indicators were developed to be measurable and based on data that is currently available or that can be collected.



**PRINCIPLES
of a
Sustainable Food System**

- **Local**
- **Secure supply**
- **Environmentally sustainable**
- **Healthy**
- **Accessible**
- **Community Development**

**PRINCIPLES:****1 LOCAL**

Products made, baked, grown, processed and sold in Alberta are supported, balanced in the context of national and international markets.

Target: By 2036, Calgarians support local food production.

Target: By 2036, the consumption of urban and regionally produced food by Calgarians increases to 30 %

2 ACCESSIBLE

All people, at all times, have physical, social and economic access to sufficient, safe, healthy and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Target: By 2036, Calgary maintains access to reliable and quality food sources.

3 SECURE SUPPLY

There is a consistent supply of sufficient, safe, healthy and nutritious food that is not vulnerable to fluctuations such as high fuel prices and natural disasters.

Target: By 2036, the consumption of urban and regionally produced food by Calgarians increases to 30 %

4 ENVIRONMENTALLY SUSTAINABLE

The Calgary food system ensures the protection of air, land and water, critical for achieving healthy ecosystems by minimizing greenhouse gas emissions, potable water use and waste and maximising efficient use of land, air quality, water quality and biodiversity.

Target: By 2036, 100 % of Calgary's food supply derives from sources that practice sustainable food production.

5 HEALTHY

Food and beverages listed in *Eating Well with Canada's Food Guide* which emphasizes vegetable, fruits, whole grains, legumes, nuts, seeds, dairy, meats, fish and poultry. These foods are prepared and served in a way that supports national and provincial recommendations for sugar, sodium and fat.

Target: By 2010, 100 % of Calgarians have access to nutritious foods

6 COMMUNITY DEVELOPMENT

The food system supports community development and action taken locally to create economic opportunities in the community on a sustainable and inclusive basis.

Target: By 2036, sustainable urban food production increases to five %



The Food System Assessment and Action Plan also identified seven key **intervention points** that connect through each element of the food system. These intervention points are places where action can be taken to effectively move Calgary toward the targets and goal of imagineCALGARY. They provide the framework for creating the action plan:

- Regulations, Legislation and Advocacy;
- Planning and land use;
- Logistics and Transportation;
- Environment;
- Economic Development;
- Community Programs; and
- Education Programs.

A diverse range of stakeholder organizations play important roles in the Calgary food system. Each has different priorities and the diversity of these priorities is reflected in the imagineCALGARY targets. The primary focus of an organization was used as a basis for the following categorisation, which has assisted in collecting data and understanding the interrelated issues and opportunities within the food system:

Market Food Sector - conventional food supply chain through which the majority of food is purchased by consumers, including the retail and food service sector supplying restaurants and non-public cafeterias.

Institutional Food Service Sector (Public sector) - provides food service in institutional cafeterias including hospital and school cafeterias.

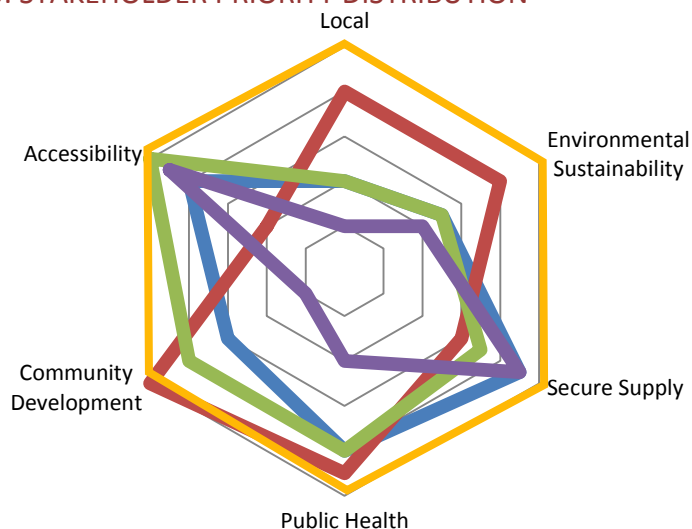
Community Food Sector - primarily addresses the goals of local, environmentally sustainable and community development and provides resources intended to increase the long-term food production and preparation capacity of participants. Examples include community kitchens, community gardens, farmers' markets, good food boxes.

Charitable Food Sector - Addresses food insecurity by providing short term remedies for severe food insecurity such as food distribution programs, meal programs, food banks and soup kitchens.

Government Sector - pertains to all orders of government –federal, provincial and municipal governments and their roles within the food system; primarily legislative, regulatory and advocacy.

All five sectors have an interest in the six principles and associated imagineCALGARY targets, but their priorities are different; they may have more than one focus area and there is overlap between categories. This is presented in Figure 2.3 below.

FIGURE 2.3: STAKEHOLDER PRIORITY DISTRIBUTION





3.0 PRODUCTION

DESCRIPTION

Production includes planting, growing, raising and harvesting of food encompassing both rural and urban agriculture.

CHARACTERISTICS OF PRODUCTION IN A SUSTAINABLE FOOD SYSTEM

- Is secure, reliable and resilient to change (including climate change, rising energy prices, etc);
- Is accessible to **all** members of society;
- Is energy efficient;
- Is an economic generator for farmers, whole communities and regions;
- Is environmentally beneficial or benign;
- Uses creative water reclamation and conservation strategies for agricultural irrigation;
- Adopts regionally-appropriate agricultural practices and crop choices;
- Works towards organic farming;
- Contributes to both community and ecological health;
- Builds soil quality and farmland through the recycling of organic waste;
- Supports multiple forms of urban as well as rural food production;
- Ensures that food processing facilities are available to farmers and processors;
- Is celebrated through community events, markets, restaurants, etc;
- Preserves biodiversity in agro-ecosystems as well as in the crop selection;
- Has a strong educational focus to create awareness of food and agricultural issues; and
- Provide a fair wage to producers.

CURRENT STATE

Nationally, agriculture is a key industry, employing one in eight Canadians accounting for 8.2% of the Gross Domestic Product (GDP). Since 1941 there has been a consistent decline in the number of farms and the trend to farm expansion and consolidation, both nationally and provincially. Within Calgary and the region (defined as Foothills MD, Rocky View and Mountain View Counties in this study) the trend is similar. The number of farms declined from 4,905 in 2005 to 4,186 in 2010. Within Calgary specifically, the number of farms decreased from 112 to 55 farms during the same time period. Of the 55 farms currently in Calgary, 23 are focused on food production; including cattle (5), apiculture (5), oilseed and grain (7), vegetables (2), fruit/tree nut (3), and food crops under cover (1). The area of farmland declined from 51,437 hectares (ha) to 12,193 ha from 2005 to 2010; a decrease of 76.3%, likely attributed to an increase of new community development.

Gross farm receipts for the Calgary region totalled \$763,963,393, a decrease of 1.5% from 2005, this equated to an average of approximately \$691/ha in 2010 up from \$668/ha in 2005 for the region. Within Calgary, gross farm receipts totalled 12.5 million in 2010, which decreased from 38.2 million in 2005. Due to the decrease in number of farms and farm land, these receipts actually equated to an average of \$995/ha representing a significant increase from 2005 (\$748/ha) of productivity.



Traditional agriculture, including large scale crop and cattle production, still dominates the region's land use. However, the agricultural industry has been revitalized through a renewed global emphasis on sustainable food production, growth of organics, increased prices for food commodities, and an interest in supporting local economic development at the municipal level. Increasingly, good animal welfare practices are perceived as important by consumers. There is growing demand for assurances that animals from which food is derived have been humanely managed and this has led to trends for instance regarding vegetarianism, veganism and the request for free-range eggs and hens. In some categories of food production the region supplies either significantly more or less than these rough averages since there are agronomic limitations to the variety of products that can be produced in the Calgary region. A lack of precision on the source of food consumed in Calgary limits the ability to conduct a thorough analysis of the percent of production that is local.

Calgary, like other North American cities, is experiencing a rejuvenation of urban agriculture. Urban agriculture is the raising, growing and/or processing of food products within the city. Beneficial functions include food production, both for personal consumption and sharing with family and friends, education, recreation, community building and creating vibrant neighbourhoods. Urban agriculture can enhance the environment by improving soil health, air quality, reducing energy costs and GHG emissions by reducing the distance food travels and supporting biodiversity by providing habitat for insects and birds. There are six classifications of urban agriculture: household production, community and allotment gardens (plots rented out to people not necessarily within their community), institutional gardens small-scale commercial and semi-commercial, large-scale and multi-functional farms.

It was found about 1/3 of Calgarians grew their own vegetables and herbs and about 1/4 grew fruits/berries for household consumption. Using the imagineCALGARY targets to increase urban food production, and based on estimations of single family homes (390,629) and average yard size (453m²) it can be estimated that there is approximately 17,700 ha of yard land. However, much of this land would be allocated to other garden uses e.g. decking, and it should be recognized that, in addition, characteristics including aspect, soil quality, and sun exposure would need to be considered in refining the quantity of land available from household gardens for food production.

Interest in community gardens has grown significantly within Calgary. As of April 2012, there were 52 private and 59 public gardens in Calgary. Of the public gardens, 36 were on City-owned land. This represents a significant increase as prior to 2009 when there were only four gardens on City-owned land. Parks now has four community orchards which are being evaluated as part of a five year pilot project. There is also a potential opportunity for Parks to pilot allotment gardens, which would give citizens the opportunity to garden outside of their community. This will be explored in the near future. There is also a growing interest in rooftop gardens for food production.

ISSUES/CHALLENGES

- Conversion of farmland to other uses, fragmentation of the farmland base and the right to farm are the key concerns regarding land use and farmland protection. A key impediment to the development of food production in the Calgary region is the cost of land, which is influenced by these concerns;
- Limited growing season and climate conditions limit diversity and availability of local fruit and vegetables;
- Global and complex issues, such as producers of local food has to compete with low-priced industrial foods;



- Demand for community gardens exceeds the current capacity to deliver. Resources are limited within both community groups in terms of volunteers and funding and also at The City of Calgary;
- High cost of production inputs such as fuel, fertilizers affects resiliency, productivity and income for producers, etc;
- Food production systems compete with the land uses of a growing urban area. Food production systems have typically not been a high priority item in land use designation. As a result impacts on food production are not generally considered in land use planning and policy or development planning; and
- There are significant issues associated with lack of data. Data is not available for Calgary's area production, imports or exports. A lack of precision on the source of food consumed in Calgary limits the ability to conduct a thorough analysis of the percent of production that is local.

OPPORTUNITIES FOR ADDRESSING ISSUES/CHALLENGES

- Agri-tourism and Culinary Tourism provide an opportunity for tourists to directly engage with the food system and farm community. Calgary boasts several internationally renowned restaurants and chefs who feature the regions produce and supported by Tourism Calgary amongst other businesses in promoting unique regional foods and talent;
- Education and awareness of the seasonality of locally grown food in Calgary in addition to methods for effectively extending the growing season and increasing production under the restrictive climatic conditions are subjects that were raised repeatedly at stakeholder consultations during the course of this project. These are important topics for education efforts;
- Countering the issue of small-scale farmers competing against low price food, there is a growing interest of Calgarians in locally produced food, where they can interact directly with the producer, and know the origin of the food and the methods of production. Many Calgarians are willing to pay a higher price for food they perceive to be fresh, high quality and support local economic development. In addition, the local producer may be able to avoid some of the intermediate costs of industrial food e.g. marketing, processing and packaging;
- There is significant opportunity to include urban agriculture/food production in local areas plans, regional policy and growth management decisions through the implementation of the Municipal Development Plan (MDP); and
- The Calgary Regional Partnership (CRP) presents an opportunity to collaborate with the regional municipal districts on the shared vision for sustainable food production.

GAPS/RECOMMENDATIONS

- In collaboration with The City of Calgary relevant business units, review City of Calgary bylaws, plans, policies and programs to determine if amendments would be required for alignment with the food system assessment vision and principles;
- Currently, we do not clearly understand the demand in comparison to the productivity of local food production to determine the land mass required to support increased local food production. It would be beneficial to collaborate with the university or other post-secondary institutions to research this issue and other data gaps identified; and
- Enable and support applicable pilot projects where appropriate to help identify barriers, processes and opportunities to further certain types of urban agriculture.



4.0 PROCESSING

DESCRIPTION

Processing refers to the altering of raw food stuffs to create a different, more refined product. Examples include preserving, cooking/baking, preparation, meat processing, grain milling and other value-adding operations at a variety of scales. It is through processing that most value is added to the raw food product and the profit margin is increased. Reasons for processing include the need to manage harvests, reduce waste, keep food safe and protect public health, improve palatability, feed large urban populations and feed rural and remote communities.

CHARACTERISTICS OF PROCESSING IN A SUSTAINABLE FOOD SYSTEM

- Energy efficient;
- Supports multiple forms of urban as well as rural food production;
- Food processing facilities are available and affordable to farmers and processors;
- Provides a fair wage to producers and processors locally and abroad; and
- Is an economic generator for farmers, processors and whole communities and regions.

CURRENT STATE

Processing is a critical part of the food system, being the point at which value is added to raw products and often a connection point between producer and distributor or consumer. The province has a strong food and beverage manufacturing and processing industry, particularly related to meat and grain, which is reflective of the strength of livestock and grain production within the province.

In 2010, Alberta's food and beverage processing industries comprised the second largest manufacturing sector in the province contributing 19.2%. Within Calgary, food manufacturing (processing) represents the largest of all the 21 manufacturing sub-sectors in Calgary and maintains a strong labour force within the city. There are approximately 113 processors within Calgary, 27-30 of which are identified as 'niche processors', or supplying products to gourmet and speciality markets. Key interviews with stakeholders identified an increased demand for high-value gourmet, local and specialty foods that has resulted in the development of niche processing markets. This is likely connected to the trend identified through a national survey of Canadian chefs, that local, sustainable, and healthy options are the top of the list of menu trends in Canadian restaurants, Alberta included.

ISSUES/CHALLENGES

Over the last 60 years Canada's food and agriculture industry has increasingly been geared for large-scale producers and cannot easily accommodate the specialty products or small-scale processing required by many local producers. Small-scale processors often require specific facilities and associated financial capital which can restrict their ability to be successful, particularly if processing is short-term based on the seasonality of the produce. In addition, labour costs, labour supply and retention and the time and skills necessary to enter into the market can be significant barriers to small-scale processors. Other food industry issues and challenges impact the market for Calgary food processors, including:

- Centralization of abattoirs and other food processing facilities;
- Health and safety concerns and increased regulation - food retailers, processors and restaurants are all commercial facilities that are required to follow food safety rules and regulations. These rules are in place to protect the public's health and prevent food borne illness. Inspections and



regulations are conducted based on their potential risks. Some stakeholders indicated that they can create a high level of confusion and frustration and are perceived to impact the financial viability of some agricultural or community based food businesses;

- Increased fuel costs;
- Labour supply shortage and increased cost;
- Land costs and affordability;
- Increased extreme weather conditions;
- Increasingly competitive import prices; and
- Increasing demand for organics.

OPPORTUNITIES FOR ADDRESSING ISSUES/CHALLENGES

- Some producers process directly on their farm, which allows them to control the type of processing, reduce additional transportation costs and expand their business to incorporate any additional financial value;
- Another solution is for several food processors to co-locate in a shared facility, which provides the opportunity to share capital and operating costs, labour and expertise and also the associated risk;
- Within Alberta, value-added activities are supported and encouraged through the provincial government and other institutions. Albeit there is limited capacity, several business incubators, facilities and programs are available to support new businesses, provide leadership and expert guidance in the food processing industry. Others are being explored such as a potential program for mobile slaughter units; and
- AARD has a food safety-processing program designed to allocate funds for processors to implement food safety systems that result in demonstrated behaviour changes in food safety practices achieved through the adoption of food safety systems, undergoing food safety audits, participating in food safety training or through capital equipment purchases that directly impact food safety.

GAPS/RECOMMENDATIONS

- Explore the potential for under-utilized industrial acreage within Calgary to be used for needed food processing facilities at affordable prices;
- 'Producer marketing networks' are groups of farmers working together to meet market demand with central facilities for activities such as washing or packing. These types of facilities and initiatives can be referred to as 'food hubs' and are of increasing interest throughout Canada and North America. While a few food hubs exist in Calgary there is an opportunity for further exploration and implementation of this approach. Working with AARD and using the inventory of local brokers and distribution companies, processors and producers and open source logistics mapping could be used to identify potential partnerships and locations for food hubs in the region; and
- Exploration of Life Cycle Assessment to show the environmental impact of food processing facilities as part of the full life cycle.



5.0 DISTRIBUTION

DESCRIPTION

Distribution includes the set of processes through which food finds its way from food producers and food processors to consumers. Distribution includes both the distribution and storage of raw and processed food as it passes from farms through brokers, wholesalers and retailers to consumers. Consumers may source food from grocery stores, markets or restaurants; thus all of these, and their suppliers, are part of the food distribution system.

CHARACTERISTICS OF DISTRIBUTION IN A SUSTAINABLE FOOD SYSTEM

- Efficient and energy efficient;
- Economic generator for farmers, whole communities and regions;
- Balances food imports with local capacity; and
- Provides fair wages.

CURRENT STATE

Calgary is a major food distribution centre in western Canada. The majority of food consumed in Calgary is distributed through a small number of large distribution and wholesale companies as part of the market food sector. These transport food over large distances and operate in an efficient manner that minimizes cost through specialization and economies of scale; storage space is minimized and deliveries must adhere to a tight schedule. However, this system is subject to global disruptions with an associated risk and instability. Even minor delivery disruptions can result in food failing to reach the consumer through the market food sector before its expiry date, although still perfectly safe for human consumption. These disruptions within tight schedules result in a significant quantity of food that is still suitable for human consumption allocated for the landfill were it not for the redistribution services of food assistance programs and agencies such as the Calgary Food Bank (the Food Bank sources 85% of food donations from the market food sector). The local distribution network is more resilient to global disruptions and covers much shorter distances with potential for reduced environmental impact. However, this system can be less efficient due to an increased number of smaller deliveries.

ISSUES/CHALLENGES

- The environmental impact of the distribution system depends upon the distance travelled, the method of transportation and associated fuel use and the efficiency of that transportation. The current food system relies greatly on the use of non-renewable fossil fuel for its distribution. On average, food travels approximately 1640 km every time that it is delivered to the consumer, (6,760 km on average over its life cycle through the supply chain);
- While the distances travelled for local production are shorter, they are generally less efficient. Often local producers that sell directly to restaurants or institutions will deliver small quantities, making many deliveries over a short period of time. This can increase the environmental impact associated with the distribution of local produce;
- Some retailers in the Market Food Sector purchase local foods for retail from direct connection with farmers, often by going to local farmers' markets. This is called direct marketing. While direct marketing provides options for producers, time spent by farmers selling foods at the farmer's market, marketing and labelling their products of delivering to restaurants is time taken away from production. In addition to this, it was identified that farmers often cannot afford to



hire marketers;

- Buyers (e.g. restaurants) find it difficult and time consuming to coordinate all of the deliveries and deal with the complex billing associated with local procurement; and
- Access to local distribution sources e.g. farmers markets, are often not in a location that is walkable or on the primary transit network. There are no public farmers markets in Calgary that are city-owned, operated or financed.

OPPORTUNITIES FOR ADDRESSING ISSUES/CHALLENGES

- Direct marketing enables producers to capture higher prices for their commodities. Alberta producers are making use of a range of direct marketing options, including:
 - Roadside stands or farm stores;
 - U-pick operations;
 - Community supported agriculture (CSA);
 - Farmers' markets;
 - Municipal buying clubs; and
 - Direct sales to restaurant.
- There is interest at provincial, regional and city level regarding support for existing and new food hubs.

GAPS/RECOMMENDATIONS

- An increase in local production to diversify food supply and reduce the risk associated with political instability and fuel prices would help to decrease the threat of food supply disruptions. Further if developed efficiently, it would reduce the fuel consumption and GHG emissions in the distribution network;
- The collaboration of producers and buyers and logistics/distribution companies should be explored for increasing the efficiency of the local food distribution network:
 - Coordinate and provide information about the availability of shared equipment, space, transportation, packaging, labour, labelling etc;
 - Map the existing routes and efficiency of the distribution networks with partners. Align this with a carbon footprint mapping of the different distribution networks to inform amendments and strategies;
 - Smaller/medium size distributors could coordinate pick-up and delivery at central points;
 - Producers (like CSA's) use drop off points within the city to drop produce off and have the buyers/consumers pick up;
 - Centralized distribution centre for local producers to help facilitate the logistics of the buyer, transporters and producers; and
 - Opportunity for a web-based solution to organize logistics and distribution – a central web-portal and database.
- Explore alternative fuel sources such as local biofuel options, as well as other options for green vehicles (right-sizing vehicles, electric, hybrid, etc); and
- Plan and design for walkable neighbourhoods and complete communities with markets and/or other distribution facilities.



6.0 ACCESS

DESCRIPTION

This refers to the accessibility and affordability of food at the level of the individual household (sometimes referred to as household food security). This takes place from the farm to grocery stores, to farmers markets, to communities and households. People purchase food based on family need, accessibility, food preferences, cultural background, religion, nutrition, values, attitudes and beliefs related to food and/or food advertising. Choices are made based on certain constraints such as money, time, skill and confidence in food preparation, available facilities and access to shops and transport, preferences, allergies and cultural factors and by the food supply.

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe, healthy and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Physical access relates to distance between a house and the nearest food retail outlet and also physical disability and car ownership. Income-related household food insecurity is the term used to describe a household's financial ability to access adequate food.

CHARACTERISTICS OF ACCESS IN A SUSTAINABLE FOOD SYSTEM

- Secure, reliable and resilient to change (including climate change, rising energy prices, etc)
- Accessible to **all** members of society;
- Balances food imports with local capacity;
- Contributes to both community, physical, cultural and ecological health; and
- Is celebrated through community events, markets, restaurants, etc;

CURRENT STATE

There are a variety of food retail outlets providing access to food within Calgary from farmers markets to grocery stores to convenience stores. Approximately 70% of the food retail sector (by volume) is operated by three retailers; Superstore, Safeway and Calgary Co-op. Albeit some retailers in the market food sector place a high importance on elements of a sustainable food system, there is considerable opportunity within this sector to increase the scale and communications of strategies and associated progress towards sustainable targets. This would assist with data collection and monitoring of progress towards the imagineCALGARY targets and also help to increase customer awareness of the Calgary food system, impacts and progress. Some community food sector retailers support and communicate on sustainability initiatives.

Physical access to food is dependent upon both distance and urban design. In Calgary, this is currently auto-oriented, particularly in new suburban development, and areas of the city exist with restricted physical access to a main food shop.

Income-related household food insecurity exists in Calgary due to an underlying issue of poverty, increased through Calgary's significant income disparity. The prevalence of household food insecurity in Canada is measured in population surveys using a tool called the Household Food Security Survey Module. The relationship between income and measures of food insecurity is not simple or linear. Rather, food insecurity is sensitive to fluctuations in household resources and factors such as household size and composition, shelter costs, debts and savings. Approximately 150,000 Calgarians accessed the Food Bank Emergency Food Hamper Program in 2011. To some extent, Calgary food programs mitigate the impacts of household food insecurity but do not address, rather can mask the underlying issue. The



Calgary Poverty Reduction Initiative is a venue to address the fundamental cause of household food insecurity rather than food system strategies and programs.

ISSUES/CHALLENGES

- In Calgary there is generally a congregation of grocery stores along the major roadways and numerous gaps within the city where no grocery store exists for significant distance. A 1km radius around grocery stores was used to highlight areas of the city outside walking/biking or easy access distance of their main food shop. Approximately 48% of Calgary residences are located outside of a 1km radius of a grocery store. When this is overlaid with population by community and percentage of low income households this highlights that there are specific areas of the city with either a high population and/or also a high percentage of low income households with no availability to a grocery store. Gaps where there is both higher density and percentage of low income households exist primarily in Wards 5, 9 and 10. This increasingly requires personal vehicles versus public transit or walking and biking in order to access food. These gaps are often referred to as 'food deserts'; a district (rural or urban) with little or no access to foods needed to maintain a healthy diet but often served primarily by fast food restaurants and/or convenience stores. At the local level development design, particularly of new communities, is auto-oriented and access to grocery stores is primarily by the private automobile. This not only impacts physical accessibility but also the environment as a result of increased GHG emissions;
- An important distinction must be made between the need to deal with household food insecurity and the need to address poverty. The presence and abundance of programs and services in the charitable food sector has been argued as hiding the larger poverty issue. Household food insecurity is often a symptom of poverty and the greater need is to address the underlying issue e.g. through provision of living wages, employment and affordable housing, which will then enable people to afford the full cost/value of food;
- In 2009, food costs in Calgary were the highest among major Canadian cities, although the percentage of income spent on food by Calgarians was the lowest. This highlights how household food insecurity can prevail in spite of the overall wealth of the average Calgarian. In 2009, 21% of Calgarians reported that they were concerned about not having enough money for food and 9% reported that they were 'very concerned';
- In 2011, 146,947 Calgarians received emergency food through the Emergency Food Hamper Program at the Food Bank alone. This does not account for the individuals accessing food through other programs or the redistribution of food from the Food Bank to other organisations. It is also estimated that only 1 in 4 in need, will access a food program; and
- The report *Income-Related Household Food Insecurity in Canada* revealed a 59.7% food insecurity prevalence rate for those on social assistance at the national level. The rate for Alberta during this same time period was 84.0%. A factor contributing to household food insecurity among low-income groups is the increasing gap between the costs of food and shelter and the levels of income provided by sources such as entry-level wages and social assistance. As housing costs increase, people have to cut back in other areas and this often includes the food budget. Income disparity in Alberta is significant and increasing.

OPPORTUNITIES FOR ADDRESSING ISSUES/CHALLENGES

- The Complete Communities section of the MDP emphasises the importance of 'Neighbourhood stores, services and public facilities that meet day-to-day needs, within walking distance for most residents'. There are also numerous policies in the MDP to deliver different components



of walkability and pedestrian-oriented development that would further support accessibility to food;

- Many organisations and agencies in Calgary are involved with providing short and long term emergency and lower cost food programs. These range from the Calgary Inter-faith food bank to Community Kitchen program of Calgary to comprehensive school health programs and associated initiatives e.g. school breakfast program, earthboxes and gardens. These often include skill building where individuals develop skills to grow, produce and prepare their own food (e.g. collective kitchens or community kitchens). These are a valuable community-based resource and have been shown to impact the social domain of food insecurity, food resources and vegetable and fruit intake; and
- The City of Calgary and United Way of Calgary and Area are currently undertaking a Poverty Reduction Initiative. Household food security will be one of the constellations of the poverty reduction initiative and there is opportunity to integrate the work of the CFC with the ongoing project.

GAPS/RECOMMENDATIONS

- Future analysis would be valuable to identify areas of the city without physical accessibility to grocery stores by transit to provide a full picture of physical accessibility to food;
- Investing in quality food markets in underserved communities not only provides physical access to nutritious food, it also creates jobs and can serve as a retail anchor. In addition to planning policy and land use requirements, financial programs can provide successful mechanisms for encouraging food retail outlets in underserved communities; and
- Work with the Calgary Poverty Reduction Initiative is a venue to address the underlying cause of household food insecurity rather than food system strategies and programs.



7.0 CONSUMPTION

DESCRIPTION

This refers to consumption and enjoyment of food, which can include food-related events and eating in both the public and private realms. Being able to select, prepare and cook minimally processed food enables families make healthy food choices, achieve good nutritional value for money, understand where food comes from, and appreciate the important role of food producers in our society. Preparing and sharing food also plays an important role in developing family and community relationships.

CHARACTERISTICS OF CONSUMPTION IN A SUSTAINABLE FOOD SYSTEM

- Is secure, and therefore reliable and resilient to change (including climate change, rising energy prices, etc);
- Is accessible to all members of society;
- Is energy efficient;
- Is environmentally beneficial or benign;
- Balances food imports with local capacity;
- Is celebrated through community events, markets, restaurants, etc; and
- Has a strong educational focus to create awareness of food and agricultural issues.

CURRENT STATE

Calgary is home to a significant number of eating establishments. 44 restaurant franchises have ten or more establishments in Calgary, totalling 1104 of the 4223 restaurants (+26%). Calgary is a highly franchised city where national chains and their associated policies and practices are influential in the local food system and a dominant section of the consumer market.

Canadian Chefs identified 'local', 'sustainable' and 'healthy options' the top list of menu trends in 2011, as well as being the top culinary themes in 2010. As a result, chefs and restaurant goers are demanding more menu items from local sources. This movement may be the outcome of a number of underlying trends, from concern regarding environmental impact to belief that locally sourced foods deliver greater taste and freshness, to a desire to support the local economy.

Tourism plays a significant role within Alberta and is boosted by such local food business. While data is not available for Calgary, it is estimated that \$283,542,000 was spent by visitors to the Calgary Metropolitan Area on food and beverage in restaurants and bars in 2010 and that figure is estimated to have risen by 9.2% in 2011. People are attracted to a city for the unique attributes it presents. As such, small independent chefs, restaurants and the unique regional produce they serve is a draw.

Calgary has a high level of cultural diversity, which enriches the local food system. As minority groups grow, so does the business opportunity to serve diverse food tastes and these new businesses help to strengthen the local community and often offer an early foothold for the establishment of that culture in the community. Sharing and experiencing traditional foods from diverse cultures can help to break down barriers and support a sense of community. Festivals and events which celebrate food provide support to a vibrant city community and also attract visitors and tourists.

ISSUES/CHALLENGES

- Sourcing local food can be challenging for chefs as it takes longer and at the same time small local businesses are burdened with taxes and regulations that impact already small profit



margins;

- Most Calgary institutions source products through wholesale distributors and smaller producers may not be able to meet the minimum order volume and continuity of supply. Most larger-volume suppliers do not have the capacity to receive multiple deliveries; and
- There is no Restaurant Association in Calgary, which makes it more difficult for groups such as Tourism Calgary to connect with restaurants as part of awareness raising initiatives.

OPPORTUNITIES FOR ADDRESSING ISSUES/CHALLENGES

- The food procured, prepared and consumed at Calgary institutions e.g. universities, schools, government buildings, hospitals etc. presents a large opportunity for the Calgary food system. Initiatives like 'Farm to Cafeteria' exist to support and explore the potential for institutions to increase access to locally and sustainable sourced food. Other initiatives include h.u.m.a.n. healthy vending machines in schools etc;
- Diverse approaches to traditional restaurants are increasing e.g. Food Trucks and Pop-up restaurants. The food truck initiative was the result of a collaborative effort between vendors, various Business Revitalization Zones, The City of Calgary and many enthusiasts, addressing regulation barriers to allow this form of street food within areas of Calgary.;
- There is strong support for local business, arts and culture and this extends to the food scene, particularly in the downtown and surrounding urban core communities. It is primarily these areas that are home to an increasing number of independent restaurants and chefs often featuring local and seasonal produce, incorporating their own herb and organic vegetable gardens and considering the sustainable impact of their menus and operations;
- There is a recent progression of standards for the food service industry e.g. LEAF, a third party certification created based on a need for a standardized method of evaluating a restaurant's environmental impact;
- Tourism Calgary organizes specific initiatives incorporating the food and beverage e.g. The Big Taste showcased over 100 Calgary restaurants and 2012 is the first year for their regional dining campaign. Culinary tourism is the merging of tourism and regional cuisine, promoting local, regional food as a vital component of the tourism experience. The Alberta Culinary Strategy was completed in 2009 and outlines a variety of culinary strategies from agri-tourism adventures with visits to bison farms, learning how to harvest artichokes or hands-on ranching techniques; and
- Calgary has been designated the Cultural Capital for 2012 and will include three major events throughout the year, one demonstrating the importance of food to cultural celebration; the Harvest Festival over the Thanksgiving weekend.

GAPS/RECOMMENDATIONS

- See food hub and distribution recommendations for supporting local chefs;
- Collaborate with the Calgary institutions to explore farm to cafeteria and farm to school approaches to sourcing food;
- Link school education programs and course/curriculum design to the food system assessment and associated strategies; and
- Incorporation of information regarding 3rd party certification such as LEAF for restaurants and food service providers within education programs.
- Develop a Calgary Seasonal Food Calendar to educate people about what is 'in season' locally.



8.0 FOOD WASTE RECOVERY

DESCRIPTION

This refers to diversion, management, and use of organic waste. It also addresses to a lesser extent other, non-organic waste materials associated with food systems. An enormous amount of food is wasted unnecessarily in Canada and this occurs in every element of the food system. The impact waste has on the economy and environment is significant. It is not just food that is wasted but the energy, water, packaging and human resources used in production, processing, distribution, retailing, preparation and home storage/consumption.

CHARACTERISTICS OF FOOD WASTE RECOVERY IN A SUSTAINABLE FOOD SYSTEM

- Is secure, and therefore reliable and resilient to change (including climate change, rising energy prices, etc);
- Is accessible to all members of society;
- Is energy efficient;
- Is environmentally beneficial or benign;
- Contributes to both community and ecological health;
- Builds soil quality and farmland through the recycling of organic waste; and
- Has a strong educational focus to create awareness of food and agricultural issues.

CURRENT STATE

Although waste occurs in all industries, the extent of waste occurring in agri-food is higher than other industries; approximately \$27 billion of food waste alone finds its way to landfill and composting annually in Canada. This equates to approximately 40% of all Canadian food production and 2% of Canada's GDP, which is greater than the value of all Canada's agricultural and agri-food imports in 2007.

More than 50% of food waste in Canada is a result of food thrown away in Canadian homes. Studies have estimated that the vast majority of consumer food waste could be avoided and that, while approximately one-fifth of food thrown away includes items such as peelings, cores and bones, the rest was once perfectly edible. Consumer waste from food also includes the unnecessary packaging on many food products, however, data associated with packaging does not exist or is not accessible currently.

Approximately 35% of the current single family waste stream in Calgary (waste collected within the Black Cart program on a weekly basis) is made up of food waste as shown. In 2010 this equated to approximately 67,550 tonnes of food. Some of this food is suitable for human consumption.

Waste & Recycling Services (WRS) at The City of Calgary currently owns and operates small outdoor windrow composting facilities at each of their three landfill sites with an estimated combined capacity of 36,500 tonnes per year. These facilities accept zoo manure composting, wood waste from The City's Urban Forestry Program, limited commercial leaf and yard waste, limited commercial food, waste from the Leaf & Pumpkin Program (diverted approximately 2,195 tonnes in 2010) and trees from the Christmas Tree Program (diverted approximately 342 tonnes in 2010). They also currently provide support for backyard composting which is generally accepted to process 100kg of organic waste per backyard composter.

Approximately 28% of ICI waste is food waste (as disposed), which equates to approximately 90,160 tonnes/year. In 2010, 443 tonnes of ICI food waste were processed for composting at East Calgary



landfill. Some ICI waste generators source-separate their organics for processing on-site or at another, private composting facility. The sector is predominantly serviced by private garbage and recycling companies, and the data is currently not coordinated to report on the private waste diversion.

In addition to diversion of the solid waste stream within Calgary's food system, Calgro is a biosolids-to-land program created in 1983 as a joint venture between the province of Alberta and The City of Calgary. This program uses biosolids produced as a by-product of the wastewater treatment plant's phosphorus removal process as a soil conditioner to enrich Calgary area farmland. Calgro biosolids program – approx 20,000 tonnes of biosolids are produced and recycled on Calgary farmland annually.

Recycling and reusing of food matter provides a valuable resource within the framework of the food cycle and in achieving a closed-loop system. Diverting food waste from landfill has environmental, social and economic benefits. Organic materials in a landfill do not break down to become compost, but instead produce GHG emissions, take up space in the landfill, produce leachate and eliminate the opportunity to produce a value-added, marketable compost product that replenishes soil nutrients. Food can be diverted from landfill by either the redistribution of edible food for human or livestock consumption or the rendering of food waste into other products (e.g. soap) or composting

ISSUES/CHALLENGES

- Existing organics facilities do not meet the potential capacity and need for diversion;
- Issues associated with waste recovery in the food system include logistics and distribution challenges diverting food suitable for human consumption from the waste stream to food programs;
- It is estimated that 30% of Calgary homes have a garburator type unit and that each unit diverts 136 kg per year to the wastewater treatment system. This totals an approximate amount of 18,360 tonnes in 2010. Garburators use significant amounts of energy and water to facilitate the removal of organics to the wastewater treatment system. Further, they add problem materials such as suspended solids, oils and grease to wastewater treatment plants and increase levels of Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD), using up the available oxygen in water, resulting in oxygen levels that are too low to support aquatic life; and
- The process of biosolid treatment consumes large amounts of energy and resources.

OPPORTUNITIES FOR ADDRESSING ISSUES/CHALLENGES

- There is community support for an organics initiative (also demonstrated through success of the blue cart programme);
- Between September 2010 and August 2011 Calgary Inter-Faith Food Bank distributed 4.5 million pounds (approximately 2,040 tonnes) of food to 62 food banks through their Regional Food Distribution Program, with 3.2 million pounds (approximately 1,450 tonnes) of food going to 99 Calgary-based charities through the BP Food Link Program;
- Community and regional agricultural production creates a market for composting, increasing the value of diverting food from landfills;
- WRS began a Green Cart Food & Yard Waste Program pilot for 7,500 homes in March 2012. This will equate to about 2,000 tonnes of waste diverted. The information from this pilot will be used to inform the development of a city-wide program contemplated for introduction in 2016. If approved by Council, potentially 46,000 tonnes food waste could be diverted into approximately 23,000 tonnes of compost; and



- Calgary is supported not only by The City of Calgary education program but several community driven waste diversion programs, such as Green Calgary's Master Composters course which trains Calgarians to provide guidance and assistance.

GAPS/RECOMMENDATIONS

- As the ICI sector is the largest source of divertible materials and represents the largest remaining opportunity to achieve The City's goal of 80% diversion to landfill, it also represents a significant opportunity to support the imagineCALGARY target and sustainable food system vision;
- In addition, data associated with non-food waste within the Calgary food system was not readily accessible. This data would be valuable to support appropriate strategies for the diversion of non-food waste within the food system (e.g. the re-use and recyclability of food packaging); and
- Education programmes are critical to raise awareness of food waste issues, the value of composting and to help minimise the amount of food needing to be diverted.



9.0 imagineCALGARY MEASUREMENT RESULTS

imagineCALGARY established targets that will move the food system toward a more sustainable state. Indicators are used to monitor the performance of targets and provide an indication of the success of meeting the targets. This section provides the results of the indicator baseline including a description, indicator identification, validation, gap identification (baseline/availability) and recommendation for next steps.

Overall, the assessment found that there is a significant lack of quantitative data related to the specific indicators or potential indicators outlined for the imagineCALGARY targets. This is primarily related to the lack of information on food demand and supply by demographic and geographic characteristic.

Target 1: BY 2036 CALGARIANS SUPPORT LOCAL FOOD PRODUCTION

Defining the target: For the purpose of this assessment *Local* was defined as *Products made, baked, grown, processed and sold in Alberta by Alberta producers*. It is important to measure not only the expression or desire to support local food but also the action of supporting local food.

Current State:

Indicator	Validation/Sources	Status
1. Number of Calgarians express support for purchasing local food	Hargroup Omnibus Survey Report, May 2010	<ul style="list-style-type: none">79% of Calgarians believe it is 'somewhat important' or 'very important' to 'purchase locally grown foods'.
2. Number of Calgarians that actually purchase local food and what percentage of their main food shop is local	Hargroup Omnibus Survey Report, May 2010	<ul style="list-style-type: none">3.8% of Calgarians say that they purchase 'almost all' of their total food locally grown food,5.5% of Calgarians say that they purchase 'about three quarters' of their total food locally grown food21% of Calgarians say that they purchase 'about one half' of their total food locally grown food40.5% of Calgarians say that they purchase 'about one quarter' of their total food locally grown food29.3% of Calgarians say that they purchase 'none' of their total food locally grown or they 'don't think about purchasing local food' or they 'don't know'
3. Amount/Percentage of local food purchased in comparison to the total amount of food purchased within Calgary	Surveys	Baseline not yet available

Recommendation:

Food consumption data suggests that the vast majority of food consumed in Calgary is from outside of Alberta. Actual data on sales or quantity of local versus total food is not readily available and more



quantitative information in this area would be very useful. This will require collaboration with the major food retail and consumption establishments and their move to begin reporting on local and sustainable products.

Target 2: BY 2036 CALGARY MAINTAINS ACCESS TO RELIABLE & QUALITY FOOD SOURCES

Defining the target: In relation to reliability, this requires that there is a consistent supply of sufficient, safe, healthy and nutritious food that is not vulnerable to fluctuations such as high fuel prices, natural disasters or political events.

Current State:

Indicator	Validation/Sources	Status
1. Number/% of Calgarians that grow their own food	Hargroup Omnibus Survey Report, May 2010	33% of Calgarians grow their own food
2. Quantity of food produced (in tonnes and by type) from urban agriculture and food production	Hargroup Omnibus Survey Report, May 2010	There are 6 different classifications of urban agriculture/food production within Calgary. Results for the quantity of food produced were available for the following: <ul style="list-style-type: none">• Household Food Production – 33% of Calgarians grow vegetables, 33% grow herbs and 24% grow fruit/berries.• Community Gardens – no baseline at this time• Institutional Gardens – no baseline at this time• Small-scale Commercial and Semi-commercial – baseline data available on type and \$ value not for quantity, to be correlated• Larger Scale agro-enterprises – baseline data available, to be correlated• Multi-functional farms – no baseline at this time
3. Hectares of farm land	Census of Agriculture Canada	10, 374 hectares of cropland 5 hectares of fruit/ berries/nut production Other data not available

Recommendation:

The intent when looking at maintaining access to reliable and quality food sources is that there needs to be a diversity of sourcing of food for Calgary to ensure reliability. This means there needs to be a balance of global, national and local sourcing in order to ensure stability is built in to the system (e.g. should a climatic disturbance, or fuel crisis occur globally, there is still capacity locally to maintain food production and accessibility for Calgarians. On-going collaboration to refine and identify indicators needs to continue.

TARGET 3: BY 2036 100% OF CALGARY'S FOOD SUPPLY DERIVES FROM SOURCES THAT PRACTICE SUSTAINABLE FOOD PRODUCTION

Defining the target: Environmental sustainability has been defined as the protection of air, land and water, critical for achieving healthy ecosystems by minimizing green house gas emissions, potable water



use and waste and maximising efficient use of land, air quality, water quality and biodiversity. In addition, the food system should support community development and action taken locally to create economic opportunities in the community on a sustainable and inclusive basis.

Current State:

Indicator	Validation/Sources	Status
1. Certified Organic food as a % of total food purchased by Calgarians (\$ and/or quantity).	None	Although the number of certified organic farms is known for Calgary and the region (2 farms certified within Calgary and 12 farms certified within the Calgary CD#6 region), the total amount (\$ and/or quantity) of organic food purchased by Calgarians is currently unknown.

Recommendation:

Certified organic food is only one indicator in a suite of potential indicators that look at sustainable food production. Many practices that make up sustainable food production, such as appropriate rotational practices, zero-till, cover crops, biodiversity strategies, etc are critical in sustainable food production and organic production may or may not include these various practices. Currently, the data is not available. There are a number of initiatives in development, which attempt to quantify sustainability but these are not at the stage where they can be used to give current estimates for specific areas.

Sustainability standards and certification programs exist including primarily Organics and Fair Trade in addition to specific aspects such as Marine Stewardship Council Certified. However, it should be noted that a provincial organic certification standard is not available in Alberta, unlike other provinces in Canada. Therefore the Canadian Organics Standard is used. Data on food sales is available for organics within Alberta but not for the city or region and not currently for fair trade or other such standards.

Further analysis of the individually certified farms can be completed but this would also require an understanding of what is sold within Calgary versus other local or export markets. In addition, the quantity of organics purchased by Calgarians that are not locally produced and processed would need to be identified from the major food retailers and consumption establishments.

It must be recognized that many local producers declare that they are practicing organic production without being certified. This is due to a variety of factors including, but not limited to, the cost and resource requirements for undergoing the organic certification process.

In order to address this imagineCALGARY target using organic as an indicator, collaboration with the major food retailers, consumption establishments and provincial government will be needed. Transparent and detailed reporting on sustainability indicators such as organics, water use, waste production, energy use, fair trade and Marine Stewardship Council Certified by the major food retailers and consumption establishments is necessary to report on this target. It will also be extremely important in communicating with the general public the progress each establishment is making in relation to these consumer demands.

TARGET 4: BY 2010, 100% OF CALGARIANS HAVE ACCESS TO NUTRITIOUS FOODS

Defining the target: Access to food has been defined as ensuring that all people, at all times, have physical, social and economic access to sufficient, safe, healthy and nutritious food to meet their dietary needs and food preferences for an active and healthy life. This target addresses access specific to income related household food insecurity.

**Current State:**

Indicator	Validation/Sources	Status
1. Number of Calgarians/residences and/or percentage of the Calgary population residing within a 1km radius of a major grocery store	Alberta Health Services facilities data set	There are 144,561 of approximately 300,000 residents (approximately 48%) in Calgary located within 1km radius of a major grocery store. (2012)
2. Number of Calgarians and/or percentage of the Calgary population accessing emergency food programs	Alberta Health Services facilities data set	<p>In 2011, 146,947 Calgarians received emergency food through the Emergency Food Hamper Program at the Food Bank alone.</p> <p>This does not account for the individuals accessing food through other programs or the redistribution of food from the Food Bank to other organizations for distribution.</p> <p>It is estimated that between one in six to one in ten households do not have access to adequate and nutritious food due to limited income. The presence of emergency and charitable food programs demonstrates that 100% of Calgarians do not have access to nutritious foods within the existing market or community food system.</p>

Recommendation:

A relative target could be set for a % decrease in the number of Calgarians needing to access emergency food programs by 2036, using 2011 as a baseline.

However, the complexity of household income related food insecurity is not truly expressed through this one indicator and there is significant research within the province currently underway related to suitable indicators associated with this issue. It is recognized that this provision is outside of the market food system and is a strategy to alleviate the symptoms of poverty. The actions identified within this assessment do not relate to poverty reduction (e.g. affordable housing, living wage etc) rather they aim to recognize the value and actions required to support the charitable food sector within the City.

It is recommended that collaboration with Alberta Health Services, community program organizations and other food sector stakeholders as part of the Poverty Reduction Initiative be used to develop appropriate indicators for income related household food security.

TARGET 5: BY 2036 SUSTAINABLE URBAN FOOD PRODUCTION INCREASES TO 5%

Defining the target: For the purpose of this assessment, urban food production has been classed as food production within the city of Calgary boundary. For this target it is important to measure not only food production but also the sustainable aspect of food production. However, similar restrictions will occur with the definition of sustainable as outlined for Target 3.

**Current State:**

Indicator	Validation/Sources	Status
1. Number/% of Calgarians that grow their own food;	Hargroup Omnibus Survey Report, May 2010	33% of Calgarians grow their own food
2. Area of land/% of total land within the city of Calgary that is employed in urban agriculture and food production;	Hargroup Omnibus Survey Report, May 2010	<p>There are 6 different classifications of urban agriculture/food production within Calgary. Results for the area of land were available for the following:</p> <ul style="list-style-type: none">• Household Food Production – majority of citizens growing food (33%) are doing so in their front/backyard and the average front/backyard area for Calgary is 453m². With 390,629 low density residences in Calgary this equates to 50,395,129m² = 5040 hectares (assumptions outlined in Chapter 4: Production and it should be recognized that not all of this area will be currently being used for food production due to access pathways, patios etc).• Community Gardens – 3.89 hectares for public and private community gardens• Institutional Gardens - no baseline at this time• Small-scale Commercial and Semi-commercial & Larger Scale agro-enterprises – together these two categories include a total of 51,438 hectares from which a total of 25,698 hectares was cropped within Calgary• Multi-functional farms - no baseline at this time
3. Quantity of food produced (in tonnes and by type) from urban agriculture and food production;	Hargroup Omnibus Survey Report, May 2010	<p>There are 6 different classifications of urban agriculture/food production within Calgary. Results for the quantity of food produced were available for the following:</p> <ul style="list-style-type: none">• Household Food Production – no baseline at this time• Community Gardens – no baseline at this time• Institutional Gardens – no baseline at this time• Small-scale Commercial and Semi-commercial – baseline data available on type and \$ value not for quantity, to be correlated• Larger Scale agro-enterprises – baseline data available, to be correlated• Multi-functional farms – no baseline at this time
4. % (in tonnes and by type) of urban agriculture and food production employs sustainability principles.	None	None

Recommendation:

Indicator 4 is critical for a sustainable food system, but because it has not been measured in the past, data and processes do not exist and it is therefore difficult to measure. When food is produced at the household or community level, this becomes more complex as it is unlikely this food would be officially certified as either organic or using another sustainability standard. This information is more likely to be sourced through surveys of urban farmers, community gardeners and individual gardeners regarding the



farming methods employed e.g. use of herbicides and pesticides, practicing of permaculture and use of organics etc. It is therefore recommended that further discussion with stakeholders, as mentioned here, be conducted to establish the data sets.

TARGET 6: BY 2036, THE CONSUMPTION OF URBAN & REGIONALLY PRODUCED FOOD BY CALGARIANS INCREASES TO 30%

Currently there is no baseline data to identify how much urban and regionally produced food is consumed by Calgarians. There are estimates on what is marketed directly, but no data available for consumption. The indicators identified for Target 1 and the indicator related to urban food grown in Target 2 could be used to indicate the amount of local food consumed. This would require a slight amendment to the imagineCALGARY target to replace 'urban and regionally' with 'locally' using the definition for local as outlined within this assessment to relate to *Products made, baked, grown, processed and sold in Alberta by Alberta producers*.



10.0 ROLES FOR ACTION

The assessment has identified the issues and opportunities along with best practices from other jurisdictions to help us develop actions that will move us faster towards our vision. The action plan is intended to contain high-level actions, identifying the lead sector and a range of stakeholders. Groups leading on actions in conjunction with stakeholders will identify a more detailed scope, timelines and resource requirements at the time of action initiation. Implementing the action plan is not a municipal government responsibility alone, nor should we rely solely on the farmer, the chef or the provincial inspector; each and every Calgarian has a role to play.

The Calgary Food Committee (CFC)

The Calgary Food Committee (CFC) was established to guide and direct the development of the Food System Assessment and Action Plan. The outcome has been a collaborative effort. In moving forward in the implementation of the action plan, the governance structure and membership of the CFC will be reviewed and a new Terms of Reference established. The new CFC will coordinate the monitoring and reporting of the implementation of the Food System Assessment and Action Plan through the imagineCALGARY partnership. They will act as the 'connector', capturing both quantitatively and qualitatively the many actions being taken towards achieving the food targets and reporting on our progress. Through the Office of Sustainability, The City of Calgary will continue to be one participant on the CFC.

Food System Sectors and Stakeholders

There is a diverse range of stakeholder organizations, all of which play an important role in the Calgary food system. Because the food system is so complex, it was useful to categorize the stakeholders. They include: the market food sector, the institutional food service sector, the community food sector, the charitable food sector and the government sector. The lead sector was identified for each action, sometimes with specific organizations and with associated stakeholders. The CFC would connect with each lead organization in order to maintain the strategic link to the action plan.

The City of Calgary

The City of Calgary's contribution to a sustainable food system occurs through regulation, legislation and policy as well through our role as advocate, leader and influencer. City of Calgary actions identified within the plan focus on removing barriers, providing support and aligning on-going work to the vision and principles of the food system assessment. This is intended to be accomplished within existing business unit work plans and approved budgets in collaboration with the Office of Sustainability, CFC and other appropriate food stakeholders.



11.0 RECOMMENDED ACTIONS

Calgarians have a vision for a sustainable food system and they articulated this through the imagineCALGARY targets for food. This document has summarised the Calgary Food System Assessment and Action Plan, which outlined where Calgary stands in relation to this citizen demand. We have not yet reached our targets, and, for some, we need to be more focussed on developing additional indicators, collecting the right data and communicating the right information effectively to monitor and report on our progress.

The Food System Assessment and Action Plan is not a static document. It establishes the strategic actions to help achieve the imagineCALGARY targets and move towards the vision of a sustainable food system. Periodic updates must be made as information becomes available and the additional indicators are developed.

To evaluate progress towards the vision, indicators have been developed that relate to the imagineCALGARY targets and food principles. They are intended to track the overall progress towards achieving the principles and vision of the Food System assessment. It is important to note that no one or two measures in isolation indicate process; a full set of indicators should be measured and reported in order to provide a comprehensive picture.

FIGURE 10.1: IMPLEMENTATION FRAMEWORK OUTLINING PRINCIPLES AND AREAS OF INTERVENTION FOR THE ACTION PLAN





A framework was developed with key stakeholder input in order to evaluate and prioritize potential actions in terms of the principles they are intended to help achieve. This framework highlights the value of actions in delivering against multiple principles, how the principles are integrated and the ability to leverage resources from various stakeholders through collaboration. A modified version was used to summarise the assessment findings for each system element and then to complete action plan. The following table is a set of high-level actions that have resulted from gaps identified in the food system assessment.

		Action	Lead	Stakeholders	Alignment to Principles ¹
Potential Area for Intervention	Regulation, Legislation & Advocacy	<p>1. Collaborate with Alberta Agriculture & Rural Development (AARD) on the Local Food System Needs Assessment Project, associated policy issues and directions. Include:</p> <ul style="list-style-type: none">a. Streamline policy and regulations;b. Communication and awareness of regulations. <p>2. Review City of Calgary bylaws to determine if amendments would be required for alignment to the food vision and principles.</p>	<p>1. Government Sector-AARD & Alberta Health Services (AHS)</p> <p>2. Government Sector-City of Calgary: relevant business unit</p>	<p>1. CFC, City of Calgary, etc</p> <p>2. Multiple and dependent upon bylaw under review e.g. citizens, Calgary Horticultural Society, Calgary Humane Society etc</p>	<p>L, A, SS, ES, H, CD</p> <p>L, A, SS, ES, H, CD</p>
	Planning & Land use	<p>1. Development of a Food Policy and associated strategies as part of the Calgary Regional Partnership (CRP) and Calgary Metropolitan Plan to influence development at the regional level.</p> <p>2. Embed the food system vision and principles as policies and strategies within growth management, land use planning and design through:</p> <ul style="list-style-type: none">a. considerations in any future annexation proposed;b. potential consideration within the Framework for Growth and Change;c. Land use policy plans, guidance and studies;d. Outline plan, development permit and building permit applications. <p>3. Continued support for the Community Garden Program, Orchard Pilot and urban agriculture at both a city-wide and community level assisted by completion of Phase 2 of</p>	<p>1. Government Sector -CRP</p> <p>2. Government Sector- City of Calgary:</p> <ul style="list-style-type: none">a. Land Use Planning & Policy (LUPP)b. Directors for Integrated Growth Committee (DIGC)c. LUPPd. Development & Building Approvals (DBA) <p>3. Government Sector - City of Calgary: Parks</p>	<p>1. CRP members</p> <p>2. Office of Sustainability (OS), CFC and usual appropriate stakeholders for the relevant process</p> <p>3. Calgary Horticultural Society, Community Associations</p>	<p>L, A, SS, ES H, CD</p> <p>L, A, SS, ES H, CD</p> <p>L, ES</p>

¹ L= Local, A = Accessible, SS = Secure Supply, ES = Environmentally Sustainable, H = Healthy, CD = Community Development



		Action	Lead	Stakeholders	Alignment to Principles ¹
		<p>the land Inventory.</p> <p>4. The Corporate Real Estate Portfolio Review will provide a means of identifying City-owned land that may be suitable and available for urban agriculture.</p> <p>5. Explore land-share opportunities ranging from private yards/gardens to large-scale land-owners.</p> <p>6. Explore co-location opportunities and strategies to increase efficiencies and use of resources e.g. co-locating food processing facilities or industrial site waste heat generator co-locates by greenhouse development:</p> <ul style="list-style-type: none"> a. Commencement of site design and appropriate land use to enable co-location; b. Fostering collaboration between tenants and landowners in suitable co-location opportunities. 	<p>4. Government Sector - The City of Calgary - OS, Corporate Properties & Buildings (CPB)</p> <p>5. Dependent upon sites e.g. yard land share could be lead by Community Sector (community groups)</p> <p>6. a. Government Sector - City of Calgary: Office of Land Servicing & Housing (OLSH) b. Landowners</p>	<p>4. All land- stewarded business units</p> <p>5. Multiple, dependent upon sites</p> <p>6. Multiple</p>	<p>L, A, SS, ES H, CD</p> <p>L,, A, SS, ES H, CD</p> <p>L, SS, ES CD</p>
	Logistics and Transportation	<p>1. Explore and implement Food Hub(s):</p> <ul style="list-style-type: none"> a. Raise awareness, provide best practice examples, coordinate stakeholders; b. Use AARD inventory of local brokers and distribution companies to identify potential partnerships; c. Use open source logistics mapping to identify suitable sites within the region (large scale as well as community halls etc), routes and distribution networks. <p>2. Increase physical accessibility to food retail (reduce prevalence of food deserts):</p> <ul style="list-style-type: none"> a. Map access to grocery stores near walkable streets and primary transit service for households with no vehicle; b. Use this with existing mapping to identify food deserts and prioritise areas of need; c. Develop a strategy to attract appropriate food retail 	<p>1. Government Sector- CRP & AARD, Market Sector and Community Sector</p> <p>2. Government Sector – City of Calgary: Transportation, LUPP & OS</p>	<p>1. CRP members, Rocky View County and Foothills MD, AARD producers, processors, distributors, retail food service purchasers (restaurants, grocery stores etc)</p> <p>2. Transportation, LUPP, Business Revitalization Zones (BRZ), Federation of Calgary Communities (FCC), Family and Community Support Services (FCSS), Poverty Reduction Team, Food Retail Business, Community Organisations (e.g. YWCA), OLSH Affordable Housing</p>	<p>L, A, SS, ES CD</p> <p>A, ES, SS, CD</p>



		Action	Lead	Stakeholders	Alignment to Principles ¹
		<p>outlets to areas of need;</p> <p>d. Design new developments to consider physical accessibility to food considering all modes of travel: driving, taxis, walking, cycling and transit.</p> <p>3. Locate urban agriculture (particularly community gardens and allotment gardens) in close proximity to transit and users (walkability). Review the parking need and impact.</p>	3. Government Sector – City of Calgary: Parks & OS	3. Citizens, community organizations, etc	L, A, ES, CD
	Environment	<p>1. Map the ecological footprint of our local food system built upon mapping at the source, supplier, retailer or restaurant level.</p> <p>2. Explore alternative fuel sources e.g. bio-fuels, electric/hybrid, right-sized vehicles etc for food distribution.</p> <p>3. Pilot the development of greenhouse technology in Calgary using sustainable methods such as waste heat.</p> <p>4. Review practices within Calgary that impact environmentally sustainable food production as necessary and appropriate.</p>	<p>1. Industry/ Market & Community Food Sector</p> <p>2. Market & Community Food Sector & Distributors</p> <p>3. Market and Community Food Sector & Institutions</p> <p>4. Government Sector: City of Calgary</p>	<p>1. Permitting, water, communities, potential markets, technology firms</p> <p>2. Community Sectors, City of Calgary – Environmental & Safety Management (ESM) Greenfleet</p> <p>3. Multiple</p> <p>4. Relevant City of Calgary business units</p>	<p>L, A, SS, ES CD</p> <p>CD</p> <p>L, ES, CD</p> <p>ES H</p>
	Economic Development	<p>1. Coordinate and provide information about the availability of shared facilities for processing (equipment, space, transportation, labour, labelling etc).</p> <p>2. Skill building and knowledge sharing as part of green collar employment. Explore and expand opportunities for social enterprise and community economic development.</p> <p>3. Develop a Food Trust Fund and explore vouchers or Calgary dollars to redistribute dollars to food programming and support training school cooks, retrofitting kitchens and developing sustainable foods sourcing and menus (e.g. Jamie Oliver's School Dinners).</p>	<p>1. Government Sector: Provincial, AARD</p> <p>2. Community Food Sector</p> <p>3. Community Food Sector</p>	<p>1. AARD, Market Food Sector and Community Food Sector stakeholders</p> <p>2. Community Food Sector stakeholders e.g. Momentum, Trico Foundation, social agencies, YWCA, EthniCity catering and the Retail Council of Canada.</p> <p>3. Community Food Sector stakeholders e.g. Momentum, Trico Foundation, social agencies, YWCA, EthniCity catering and the Retail Council of Canada</p>	<p>L, ES, CD</p> <p>CD</p> <p>A, SS, ES H, CD</p>
	Community Programs	<p>1. Embed the food system vision and principles and food security as a constellation within the Poverty Reduction Strategy.</p>	1. Poverty Reduction Initiative: City of Calgary & United Way	1. All poverty reduction stakeholders and access and preparation food system stakeholders	A, SS, H, CD



	Action	Lead	Stakeholders	Alignment to Principles ¹
	2. Support and expand kitchen provision, skill-building community kitchen programs and community gardens/rooftop gardens as part of affordable and attainable housing or housing support.	2. Community Food Sector	2. Community food sector stakeholders and City of Calgary	L, A, SS, ES, H, CD
	3. Institutions collaborate on the development of a Farm to Cafeteria/ School etc approach in Calgary.	3. Institutions and Government Sectors	3. Multiple	L, A, SS, ES H, CD
	4. Explore issues, opportunities and actions at a community level for supporting the food vision and principles.	4. CFC, and Community Food Sector	4. Federation of Calgary Communities, community associations and citizens	L, A, SS, ES H, CD
	Education Programs	1. Government Sector - Alberta Education and Calgary Board of Education (CBE)	1. Multiple	A, H
		2. Institutional Sector, CFC and Government Sector - CBE, AHS	2. Multiple	L, A, ES H,
		3. Calgary Food Committee	3. Multiple	L, H
		4. Community Sector - Green Calgary and Government Sector - City of Calgary: W&RS	4. Multiple	ES
		5. Market and Community Food Sector	5. Government sector and citizens	L, ES H, CD
		6. Market Food Sector & AARD	6. Government sector & citizens	L, ES H, CD
		7. Institutional Sector	7. CFC, Government Sector	L, A, SS, ES H, CD
	1. Continued support by the Calgary Board of Education (CBE) for embedding environmental stewardship and associated programs such as edible gardens within curriculum delivery to an increased number of schools.			
	2. Mapping of school food gardens, schools with food education programs and those that use produce in school lunches.			
	3. Education program on seasonal local food nutrition etc e.g. develop a Calgary Seasonal Food Calendar to educate people about what is 'in-season' locally – educate consumers to ask questions of chefs, cafeterias, grocery stores etc (ongoing).			
	4. City-wide education programs and campaigns on food waste diversion, composting and associated energy and water use. Both City of Calgary and consistent support funding for partner programs e.g. Green Calgary. To increase the programs to collect data on changing norms.			
	5. 3 rd party certification (e.g. LEAF) for restaurants and food service providers.			
	6. Expand labelling and marketing material associated with sustainable food sources e.g. local marketing material in grocery stores.			
	7. Collaborate with the universities and other post-secondary institutions for opportunities for on-going data collection, research and actions related to the food			



		Action	Lead	Stakeholders	Alignment to Principles ¹
		system assessment and recommended actions.			
	Governance	1. Ensure the continuation of the Calgary Food Committee to steward the implementation of the action plan in the context of the imagineCALGARY partnership and the constellation model. Draft revised terms of reference and review of membership based on moving to an implementation mandate.	1. Calgary Food Committee	1. All stakeholders within the food system	L, A, SS, ES H, CD
		2. Develop and manage a web-based information source to share the findings of the food assessment and provide resources to the public.	2. Calgary Food Committee	2. Government Sector – City of Calgary	L, A, SS, ES H, CD

