Food Resilience Strategy

BACKGROUND REPORT
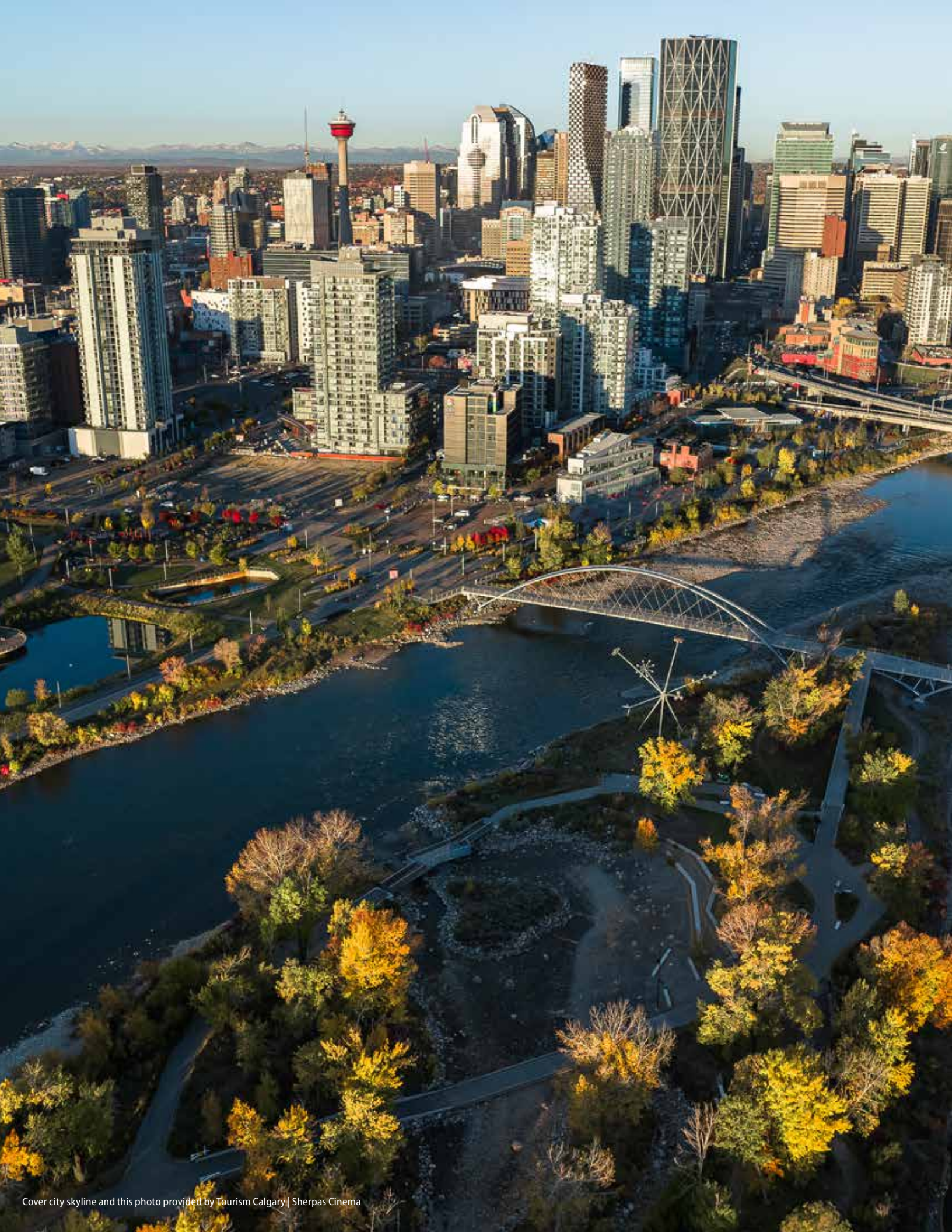
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LAND ACKNOWLEDGEMENT AND GRATITUDE

The City of Calgary sits on fertile land where two rivers meet, where Indigenous Peoples have gathered for thousands of years to hunt, fish, forage, grow, share meals and medicine, and practice ceremony together. The traditional name for this land is Mohkinstsis (MOH-kin-stiss) meaning 'elbow' in the Blackfoot language, Wicispa Oyade (weh-CHIS-spa oh-YAH-day) in the Stoney Nakoda language, and Guts-ists-l (GOOT-sis) in the Tsuut'ina language. The Metis call this area Otoskwunee.

We appreciate and acknowledge that we are gathered on the territory of the Blackfoot Confederacy, made up of the Amskaapipiikani, Kainai, Piikani, and Siksika First Nations; the Îethka Nakoda Wîcastabi First Nations, comprised of the Bearspaw, Chiniki, and Goodstoney First Nations; and the Tsuut'ina First Nation. Calgary is also homeland to the Métis Nation Battle River Territory – Nose Hill Métis District 5 & Elbow District 6. We acknowledge all Indigenous people who have made Calgary their home.

Food connects us to the land, and it is our relationship with the soil, plants, animals, water and sunshine that allow us to eat. Food also connects us to each other. Many Nations teach us to have reverence and care for these systems and for all our relations, human and non-human. The First Nations and Metis Peoples who call this land home have acted as good ancestors, making sure the land was left in a better state for the future, always looking seven generations ahead, and living in reciprocity with the human and more than human world. The Food Resilience Strategy addresses the food system on this land, as well as the human beings who are impacted by inequities in our modern food system. We offer respect and gratitude to the communities who have stewarded relationships with all the beings that have created nourishment on this land since time immemorial.

"Creator gave us many gifts and teachings to survive this world, and one of those teachings is that everything is interrelated."

- BUFFALO TREATY

View of downtown Calgary, from Nose Hill.

COMMITMENT TO TRUTH AND RECONCILIATION

We are grateful for the opportunity to advance reconciliation through our work in food systems. To do so, it's important to first acknowledge the truth and impact of colonialism and the signing of Treaty 7 on the food systems of this land and how Indigenous Peoples and Lands continue to be impacted.

This land looked very different 200 years ago. On a typical day for the Nations who call this land home, one may have seen bison being hunted on Medicine or Nose Hill, along Nose Creek, or many other sites. The abundant vegetation in the Bow River valley meant there were plenty of opportunities to gather berries like juniper, chokecherry, saskatoons or bearberry for tea, food and medicine. Camps were set up near the abundance of fresh springs on this land to process the bison to enjoy and share meals together.

The arrival of settlers marked a change in the traditional ways. Bison were once a keystone species on this land but overhunting by European settlers led to near extinction of the bison. This was not only devastating to Indigenous Peoples' food systems, but to an entire way of living and being. The Indian Act led to many Indigenous people being forcibly confined to reserves. These communities no longer had the mobility to engage in traditional practices of hunting and gathering.

Reserves tended to be on poor quality land, which made difficult the place-based conventional farming practices that replaced traditional ways. The Indian Act and the residential school system further forced a divide between Indigenous Peoples and their spirituality, which is not separate from their food systems. Today, systemic inequities put Indigenous Peoples at higher risk of food insecurity and all the issues that come from experiencing food insecurity.

Many Indigenous Peoples today continue to practice their traditional ways and imagine new ways to revitalize food systems that keep the same values of reciprocity and interconnectedness, even if the systems look different than they did two hundred years ago. Land stewards are working to bring back the bison. Elders and knowledge keepers work with youth to transmit traditional knowledge. Medicine gardens can be found in many corners of Calgary.

We are thankful for the opportunity to engage in reconciliation through food systems. This work requires relationality and trust, and we are at the beginning of our journey with both. It also requires a commitment to learning in ways that center the lived experience of Indigenous communities, and in particular the Nations who call this land home. One way to start this process is to share what we've learned so far. These learnings are featured throughout this strategy, in orange boxes. They reflect what The City has learned through conversations with Elders and Knowledge Keepers as well as resources from Treaty 7 and from Nations beyond Treaty 7.

To create a resilient food system for all Calgarians, we commit to collaborating and co-creating with the diverse Indigenous communities that call Calgary home and working to remove municipal barriers to the expression of contemporary Indigenous Food Systems.[i]

COMMITMENT TO EQUITY

This Strategy recognizes and challenges the inequities in the current food system that enable and restrict food access. Food is a human right and every Calgarian–especially those who are most impacted by food insecurity–should have access to affordable and acceptable food.

The Food Resilience Strategy has been developed with four aspects of equity[ii] in mind:

Procedural Establishing transparent, fair and inclusive processes for food system resilience planning.	**Distributional** Ensuring the benefits and burdens of food system resilience planning work are equitably distributed.	**Structural** Uprooting long-term embedded structures that perpetuate inequitable food system and resilience outcomes.	**Intergenerational** Considering how actions today may impact future generations.

To date, The City has completed three equity assessments on this work. Each assessment has offered learning opportunities for how we may continue to root food system resilience planning in these four aspects of equity. These assessments will continue to be done through ongoing planning, implementation and evaluation of the Food Resilience Strategy, to ensure that we are continuing to improve equitable practices.

The City of Calgary commits to working on food system resilience planning in a way that enhances procedural, distributional, structural and intergenerational equity.

EXECUTIVE SUMMARY

Food is much more than nourishment for our bodies. Food is a source of joy and connection – to each other, the land and climate. Sharing a meal at a table is often how we build relationships and share our cultures. Along with helping us to survive, food is emotional, cultural and relational.

Acute crisis events as well as longer-term stressors can disrupt food systems, leading to food insecurity for all residents and particularly those already vulnerable. Crisis events can be weather related, environmental, social, political or economic. They can occur at local or global scales. Crises can affect the food system by disrupting farming, production, goods and personal transportation, commercial and not-for-profit organizations, labour, prices and more. Longer-term stressors such as economic uncertainty, changing climate, poverty and unemployment also impact the food system.

Calgary's dependence on food originating from outside the city, combined with the interconnected nature of global food supplies, means that disruptions elsewhere in the world can affect the availability and price of food locally. To date, Calgary hasn't experienced an incident so catastrophic that it has resulted in a long-term interruption to the food system supply chain. However, the COVID-19 pandemic and extreme weather events have demonstrated that Calgary's food system and supply chain are vulnerable in a multitude of ways. This Strategy shares the key findings from an assessment and analysis of hazards and vulnerabilities that may disrupt Calgary's food system.

A food system disruption occurs when food is not **AVAILABLE** (either due to a supply chain failure or a donation failure), food is not **ACCESSIBLE** (either physically or economically), food is not **ACCEPTABLE** (due to spiritual, cultural, or dietary needs), or the functions of our food system are not **SUSTAINABLE**.[iii]

The Food Resilience Strategy presents a framework of outcomes, objectives and actions that will move Calgary towards a more resilient food system through short-term, mid-term and long-term actions. The outcomes were developed with the following guiding principles:

- Reconciliation and Indigenous knowledge
- Relational and equitable
- Trauma informed and healing centered
- Data Informed
- Contextually relevant

A resilient food system is only possible with the right infrastructure – land, people, built environment and planning – to make it happen. The ability of urban food systems to respond, absorb and recover from a crisis event is not considered in most cities' resilience planning, and most cities do not consider food resilience in emergency preparedness strategies. The role of The City of Calgary in building a resilient food system is fundamental as an enabler, influencer and supporter. This Food Resilience Strategy is a first step in defining the actions that The City of Calgary and partner organizations can take to support a more resilient food system.

Each outcome is supported by objectives that are further built into implementation actions. The actions consider the foundational work needed to better understand complexities, cross-corporate connections and flexibility required to respond to food system issues that Calgary may face.

The City of Calgary is a leader in Canadian cities in developing food resilience.

FRAMEWORK FOR A FOOD RESILIENT CALGARY

VISION: Calgary has a resilient food system, where food is reliably **AVAILABLE**, **ACCESSIBLE**, **ACCEPTABLE** and **SUSTAINABLE**.

OUTCOMES:

A.
Food Availability:
Calgary's food supply is reliably available from a diverse mix of sources through daily life and emergencies.

B.
Food Accessibility:
Food is physically and economically accessible to Calgarians.

C.
Acceptable Food:
Calgary's food system meets the social, cultural and dietary needs of Calgarians.

D.
Environmental Sustainability:
Calgary's local food system contributes to net-zero goals, climate resilience, and a healthy environment.

OBJECTIVES:

Food is Available

A1. More food is produced and harvested in Calgary and region to be sold, donated and shared in Calgary.

A2. Supply chains are shorter, stronger and more diverse.

A3. Calgary has a thriving local food economy.

A4. Calgary communities have Food Resilience Plans.

A5. Calgary has an emergency food response plan.

A6. The City of Calgary has partnerships across all orders of government, community, non-profits and the private sector for emergency preparedness and response.

A7. Critical food system infrastructure is resilient to hazards.

Food is Accessible

B1. Calgarians can easily access food in their communities by walking, wheeling, a short transit trip or delivery.

B2. Calgarians have enough income to meet their basic needs.

B3. Calgarians' right to food is not limited by lack of income.

Food is Acceptable

C1. Calgary's food system supports access to diverse culturally a and spiritually acceptable foods.

C2. Calgarians have food that is nutritious and safe for their dietary needs.

C3. Calgary's food system provides opportunities for social and community connection.

Our Local Food System is Sustainable

D1. Calgarians, businesses and institutions adapt food systems to a changing climate.

D2. Calgary has a circular food system.

D3. Natural assets in Calgary are valued as food system assets.

D4. The food system supports ecosystem services, biodiversity and soil health.

D5. Calgary's local food system contributes to municipal net-zero targets.

1. A VISION FOR CALGARY'S FOOD SYSTEM

Vision: Calgary has a resilient food system, where food is reliably **AVAILABLE**, **ACCESSIBLE**, **ACCEPTABLE** and **SUSTAINABLE**.

In the year 2050, our food system is rooted in values of equity, anti-racism, decolonization and sustainability. All Calgarians can access food easily, both physically and economically. A balanced mix of local, regional and imported foods is readily available to support day-to-day life and through emergencies. Food choices meet the cultural, spiritual and health needs of Calgarians. Our local food system regenerates the earth.

The food system on this land demonstrates right relationship with Indigenous communities who live in Mohkinstsis / Wîchîspa Oyade / Guts'ists'i / Otoskwunee / Calgary. Treaty 7 Peoples see their ways of being and knowing reflected in the local food system. We exist in a reciprocal, parallel process with Indigenous communities.

Calgary's food system transformation towards this vision is the result of a collaborative effort between government, local business, community organizations and engaged Calgarians. Calgary has a thriving local food economy that supports regional food producing farms, food processing, and the broader agri-food sector. Urban agriculture has become a recognizable part of Calgary's landscape. Rooftop gardens, community orchards, and vertical farms are all over the city. They provide fresh produce and support our pollinators and biodiversity.

Local farmers' markets and community supported agriculture programs are thriving. They foster direct connections between producers and consumers. The City's commitment to sustainable farming practices ensures that our local food system is resilient to the impacts of climate change, with an emphasis on water efficiency and net-zero carbon emissions.

Food is affordable, and Calgarians have the resources to be able to purchase and grow the food that they need. The City has implemented innovative economic programs that support local farmers while keeping prices reasonable for consumers. Through collaboration with multiple orders of government, incentives for small-scale agriculture and urban farming initiatives have flourished, creating a diverse and competitive market.

Collective cooking spaces are abundant and the laughter of Calgarians is contagious as they process foods they have grown and purchased from their local food cooperatives. People of all socioeconomic backgrounds are sharing their cooking techniques and nutritious meals. Transit provides easy access to community kitchens, grocery stores and fresh markets for all Calgarians.

Education is a cornerstone of Calgary's food system. Public education includes programs on sustainable agriculture, healthy eating habits, food waste reduction, cooking skills, and home gardening. People have the time, space and infrastructure that allow them to be active participants in the food system.

Learning from and adapting to crisis events, The City has developed robust emergency preparedness plans that safeguard the food supply chain. Local food stockpiles, efficient distribution networks and community outreach programs ensure that crises do not disrupt the availability of food for Calgarians.

Calgary embraces cultural diversity in its food offerings, and a rich tapestry of global cuisines are an integral part of Calgary's food culture. We celebrate diversity, and the local food system supports varying tastes, needs and traditions of its residents.

Through collaboration and forward-thinking policies, Calgarians enjoy fresh and affordable food but also a sense of shared responsibility and pride in their city's thriving and equitable food system.

This is the food future for which the Food Resilience Strategy imagines and strives for.

WE BORROW THE LAND FROM OUR CHILDREN

Indigenous Food Systems benefit people and the planet – and every Indigenous Nation's traditional food system is unique and rooted deeply in a reciprocal relationship with the land that they live with. Values of traditional ecological knowledge include sharing, relationships and stewardship of the land. The food system becomes more resilient and sustainable with these values – which are complex and contain many layers. Reciprocity with each other and the land means that resilience is considered not just for today, but for seven generations to come.

Community Gardens in Sunnyside Calgary.

2. FOOD SYSTEM RESILIENCE IN CALGARY

What is food systems resilience?

The food system consists of food production, processing, distribution, access, consumption and food waste recovery. Food systems resilience is the ability of the food system to provide food in the face of changing conditions due to climate hazards and social issues. A resilient food system keeps us fed no matter what challenges come our way.

Building a resilient food system in Calgary matters because:

- Ongoing crises impact affordability and food supply, especially for equity denied Calgarians.
- Climate hazards and other global events put our food system at risk, and we currently do not have an emergency food response plan.
- Climate change increases risk to long-term food production at a local level as well as the faraway places that Calgary relies on for food.
- Food insecurity is an ongoing issue in Calgary for many individuals and families.

The City of Calgary has the responsibility to lead food systems resilience work in ways that are tailored to our geographic and social communities. This is because:

- Local policies and bylaws shape local food environments.
- Local governments can be more responsive than other orders of government to community needs, especially during times when needs might be shifting rapidly.
- Local governments play a crucial role in coordinating emergency food response efforts.

The role of The City of Calgary is fundamental as an influencer, enabler and supporter. This Strategy was developed considering the most practical areas that fall under the scope of municipal government.

INDIGENOUS FOOD SYSTEMS ARE INHERENTLY RESILIENT

Two-Eyed Seeing means learning to view the world through both Western and Indigenous worldviews and knowledge systems, rather than prioritizing Western knowledge systems. Learning from people who are working to restore Indigenous Food Systems supports the sustainability, resilience and food security goals of the local food system. Every Calgarian benefits from values that are rooted in respect for each other, responsibility to the land, and cooperation.
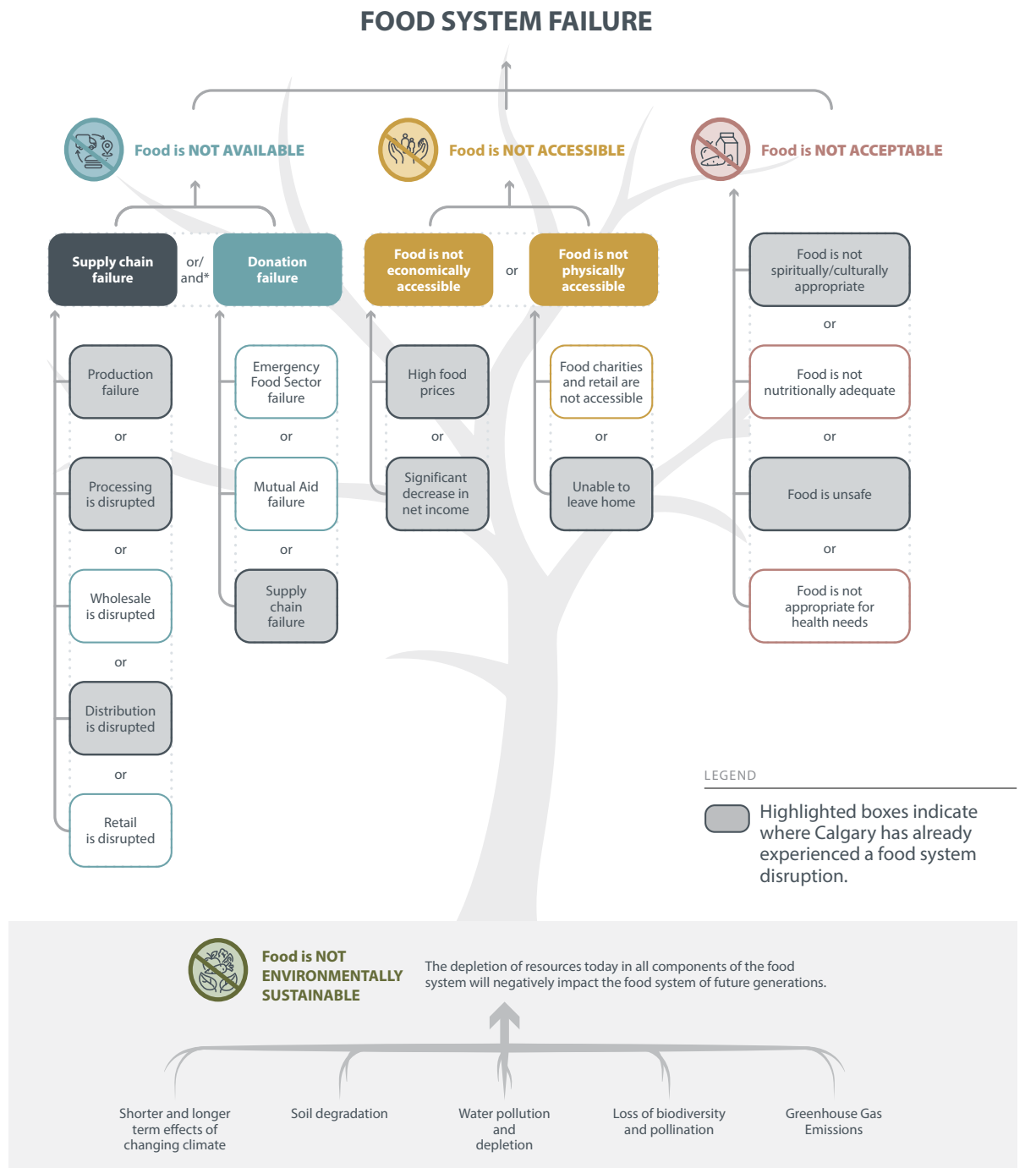
Six key states contribute to a resilient food system. As the Food Resilience Strategy was developed, objectives were confirmed to meet key resilience states. Progress towards these states will be monitored and assessed to ensure that the Food Resilience Strategy is enhancing resilience.

Key Resilience States	Example
Diversity The presence and variety of different elements in the food system that support adaptability and innovation.	The number and types of food businesses in a neighbourhood – supermarkets, boutique grocery stores, farmer's markets, convenience stores, restaurants.
Redundancy Multiple versions of a food system element that serve the same purpose, which is important for backup and continuity.	A neighbourhood that has multiple food businesses.
Community Individuals, households and groups know what role they play in the food system and can meaningfully participate.	Food focused community organizations who do different types of work: emergency provision, growing food, mutual aid, community kitchens, advocacy organizations.
Sustainability The capacity to meet current need without compromising future need. Can be ecological, economical, or social.	Ensuring that our growing practices care for the health of the soil, biodiversity, and natural systems.
Flexibility The ability to change food system elements during a disruptive event.	Community Associations becoming food distribution and storage points during an emergency.
Preparedness Having a plan in place to ensure food accessibility, availability, and acceptability during a disaster or emergency.	A preparedness plan for the emergency food sector.

iv Key resilience states adapted from Johns Hopkin's Centre for a Livable Future: *Food Systems Resilience: A Planning Guide for Local Governments.*

What is a food systems failure?

A food system failure occurs when food is not available (due to a production failure or a supply chain failure) not accessible (physically and/or economically), or not acceptable (culturally, spiritually, or nutritionally). These failures may occur if the food system is not sustainable. The depletion of natural resources today, compounded by the short and longer-term effects of changing climate, will impact all components of the food system. The fault tree model below demonstrates the conditions that lead to a food system failure. The fault tree model is not meant to be an exhaustive model of all the events that could cause a food system failure. Instead, it is meant to provoke discussion on preparedness, response and recovery.

FOOD SYSTEM FAILURE

Food is **NOT AVAILABLE**

Food is **NOT ACCESSIBLE**

Food is **NOT ACCEPTABLE**

| Supply chain failure | or/ and* | Donation failure | | Food is not economically accessible | or | Food is not physically accessible | | Food is not spiritually/culturally appropriate |

Production failure
or
Processing is disrupted
or
Wholesale is disrupted
or
Distribution is disrupted
or
Retail is disrupted

Emergency Food Sector failure
or
Mutual Aid failure
or
Supply chain failure

High food prices
or
Significant decrease in net income

Food charities and retail are not accessible
or
Unable to leave home

Food is not spiritually/culturally appropriate
or
Food is not nutritionally adequate
or
Food is unsafe
or
Food is not appropriate for health needs

LEGEND

Highlighted boxes indicate where Calgary has already experienced a food system disruption.

Food is **NOT ENVIRONMENTALLY SUSTAINABLE**

The depletion of resources today in all components of the food system will negatively impact the food system of future generations.

Shorter and longer term effects of changing climate

Soil degradation

Water pollution and depletion

Loss of biodiversity and pollination

Greenhouse Gas Emissions

Adapted from the Baltimore Food System Advisory Report *A Framework for understanding events that contribute to a food system failure*. This figure shows disruptions that would likely lead to food system failure. [v]

What is the Food Resilience Strategy?

Developing food resilience is about more than ensuring that we have fuel for our bodies. Along with helping us survive, food is also emotional, cultural and relational. Food resilience is about recognizing that food itself is a source of joy and connection - helping us to develop the relationships required to build our collective resilience.

The Food Resilience Strategy included **an assessment of Calgary's current food system to help identify how The City of Calgary and its partners can support our food system to ensure food is consistently available, accessible, acceptable and sustainable.**

The purpose of this strategy is to help us prepare to respond to short-term shocks and contend with longer-term stressors, recognizing that trade-offs may arise as we strive to reach our outcomes. It creates pathways for action and still allows us to be flexible in a rapidly changing world – so that Calgarians can access the food they need.

This strategy uses an intersectional approach that intends to benefit all Calgarians, while ensuring that we prioritize Calgary's most food insecure people. It focuses both on basic food needs and on improving our larger systems.

The Food Resilience Strategy was developed with the voices of many different Calgarians. It is a guiding document to begin creating resilience in our city's food system. The work of implementing the Strategy requires ongoing relationship building, collaboration and engagement with many food providers and communities, especially those who are most affected by food insecurity.

The Food Resilience Strategy is intended to reflect a balance of interventions that support individual, community and municipal resilience. These types of resilience are not independent. Policies, programs and practices that encourage municipal resilience create the conditions for community resilience, which in turn ensures that the individuals living in these communities can also be resilient.

Defining Scales of resilience in the food system.

THE IMPACTS OF COVID-19

A key process and source of information that helped guide the development of the Food Resilience Strategy was the food security work done during and after the COVID-19 pandemic. When the pandemic hit early in 2020, it created an unprecedented crisis for Calgarians and the food system. While the consolidated global food supply chain that Calgary relies on is redundant and highly efficient, the pandemic exposed vulnerabilities in the food system. The pandemic caused widespread labour shortages and supply chain disruptions. This meant that grocery store shelves went bare, meat processing plants closed, fields of food were plowed back into the soil, and many families went hungry. Closed borders and the suspension of the temporary foreign visa program caused labour shortages, while closed restaurants and local businesses meant cancelled contracts for regional farmers and distributors. Although this list is not exhaustive, these disruptions caused temporary food shortages, excessive industrial food waste and food price volatility for Calgarians.

KEY PRINCIPLES OF INDIGENOUS FOOD SYSTEMS:

Food and access to food and land is a sacred gift: The land is an equal partner in our relationship with it. Food, medicine, land and culture are one and the same.

Centering collective participation and cultural identity: Practicing traditional ecological knowledge and sharing culturally acceptable food supports community wellness. Ritual and ceremony are at the center of Indigenous Food Systems.

Self-determination is necessary to create flourishing Indigenous Food Systems: It's necessary for Indigenous communities to respond to their own food needs in a culturally adapted way.

Stewardship of the land: We do not manage the land, only our behaviours in relation to it. Always look seven generations ahead when assessing the impacts of actions concerning the land.

3. GUIDING PRINCIPLES AND METHODOLOGY

Principles

Our approach was informed by five key principles guiding the development and design of the Food Resilience Strategy. They are inspired by the direction of the Calgary Climate Strategy – Pathways to 2050 as well as best practices from existing food resilience work.

Reconciliation and Indigenous Knowledge

The City is committed to building intentional and long-term relationships with Indigenous Peoples that center Indigenous knowledge and lived experience to create food systems resilience. The City also commits to collaborating and co-creating with the diverse Indigenous communities that call Calgary home and working to remove municipal barriers to the expression of contemporary Indigenous Food Systems.

Relational and Equitable

A resilient food system is built on relationships between people, institutions, businesses and land. The City is committed to supporting strong relationships that are grounded in practices of structural, distributional, procedural and intergenerational equity.

Trauma Informed and Healing Centered

The toxic stress of food insecurity has been demonstrated to create or exacerbate trauma for individuals and families.[vi] The City commits to pursuing food resilience in a manner that is trauma informed – grounded in safety, trustworthiness and transparency, collaboration and peer support, choice, intersectionality and empowerment. At the same time, rather than dwelling on the most difficult circumstances of people's lives, The City commits to focusing on the strengths and potential of individuals and systems – prioritizing a healing centered approach.[vii]

Data Informed

The City's Food Resilience Strategy is informed by data driven tools. It will continue to lean on and learn from best practices across different disciplines and will be accountable to relevant indicators and metrics for success. The implementation of the Food Resilience Strategy will include gathering of relevant data as needed. The City recognizes data as existing in many forms, including traditional knowledge, cultural knowledge and land-based teachings.

Contextually Relevant

The City works to create multiple pathways to food resilience that work for different communities, based on their unique contexts and needs.

How was the Food Resilience Strategy developed?

While developing the Food Resilience Strategy, The City worked collaboratively to create a Strategy that reflects the interconnected and complex work of food systems resilience. We systematically moved through a defined assessment and analysis process to identify food system assets, hazards and vulnerabilities.

City of Calgary policies and plans were reviewed for alignment. Food system and emergency response policies and plans were reviewed from other cities across North America. These policy scans informed the project strategy and approach.

The City listened to experts across Calgary, including non-profits, businesses and interested parties to learn more about the challenges and strengths of our food system. To ensure feedback was received from equity-denied Calgarians, The City partnered with organizations serving those communities. The City shared the proposed priority areas in targeted public engagement to receive feedback and ensure nothing was missing. This targeted public engagement supported The City in clarifying scope and role of the municipality. As this Strategy is implemented, actions will be co-created with equity-denied Calgarians in order to ensure this Strategy prioritizes communities most impacted by food insecurity.

We created maps to identify areas of the city most vulnerable to climate hazards. Food system assets were mapped (grocery stores, distribution centres, markets and emergency food providers) to better understand physical food access. We also created maps using existing data points from the Calgary Equity Index. These maps were a snapshot in time, but the analysis provided helpful insight into the physical hazards that may affect Calgary's food system.

We have learned that food system priorities for Calgarians continue to emerge in response to the trends and uncertainties that impact our city, such as inflation, population growth, housing shortages, climate change and others. Through strategy development, it became clear that The City would need to continue to engage the community to co-create impactful actions. **Implementation actions are ongoing and responsive to emergent issues.**

Timeline of Equity Work and Indigenous Engagement

2023

Equity Analysis - Internal

Q2

Q4

Indigenous Engagement and Conversations with - Internal & External

2024

Equity Analysis (Part 2) - Internal

Q1

Q1

Climate Resilient Communities Working Group Engagement - External

Indigenous Engagement and Conversations - Internal

Q2

Q2

Public Engagement with Equity Denied Communities - External

Ongoing Equity Analysis and Building Relational Framework for Indigenous Engagement

Q3 and beyond

How is the Food Resilience Strategy aligned with other City strategies?

Calgary Climate Strategy – Pathways to 2050

The Food Resilience Strategy is a component of the Climate Strategy under **Program 3: Developing Food Resilience.**

CalgaryEATS! Food Action Plan

The Food Resilience Plan connects to Calgary EATS! through its commitment to:

- Strengthening local and community food production for a stronger local economy.
- Diversifying and regionalizing food supply chains.
- Improving sustainability and reducing GHG emissions.
- Creating more equitable communities.

City Resilience Framework (Resilient Calgary Strategy)

The Resilient Calgary Strategy and Food Resilience Strategy are connected by the following commitments:

- All households have access to good quality, affordable and nutritious food.
- Food is supplied from reliable and sustainable sources, promoting local sources to minimize dependence on long supply chains.
- The City promotes healthy diets to protect against malnutrition in all its forms.
- Food is supplied from reliable and sustainable sources, promoting local sources to minimize dependence on long supply chains.

Other aligned plans and policies

- Biodiversity Strategy
- Cultural Plan for Calgary
- Drought Resilience Plan
- Environment Policy
- Goods Movement Strategy
- IMAGINE Calgary
- Industrial Strategy
- Land Use Bylaw
- Municipal Development
- South Saskatchewan Regional Plan
- Sustainanable, Environmental and Ethical Procurement Policy
- Triple Bottom Line Policy

Highfield Farm greenhouse, Calgary.

In 2023, 27.4% of people in Alberta lived in a food-insecure household.[xi] In the Calgary context, this means that more than 450,000 Calgarians struggle to afford the food they need.

4. ASSESSING AND ANALYZING CALGARY'S CURRENT FOOD SYSTEM

Hazard Assessment and Analysis

Hazards are potentially damaging phenomenon caused by humans, technology, the environment or the changing climate. Hazards can disrupt the food system in different ways, causing either shorter-term crisis events or longer-term stressors. Disruptions are consequences to the food system because of hazards that occur locally and globally. Some communities are more heavily impacted by food system disruptions. The Food Resilience Strategy acknowledges that communities already experiencing chronic food insecurity will likely experience food system disruptions more acutely.

Changing climate is increasing the frequency and severity of climate hazards, both globally and locally. These hazards include floods, droughts, extreme heat and severe storms, which can impact the food system. The historical climate trends of the last century paint a useful picture in illustrating how our climate has been changing and to identify significant trends and patterns that have impacted our food system. As we move forward in this changing world, climate projections provide a glimpse into the future to help identify risks to our food system. Using historical information together with climate projections helps us to identify hazards in Calgary that could disrupt the food system, along with other cascading effects that could negatively impact the food system.[viii]

The baseline hazard assessment for this work was informed by two corporate research documents:

- The Climate Risk Assessment: Identifies climate hazards that will impact Calgary; and
- The Disaster Risk Assessment: Identifies natural, anthropogenic and technological hazards that could impact Calgary.

Elements of the food system were analyzed to yield a unique list of hazards that might impact food system availability, accessibility, acceptability, and sustainability in Calgary. The hazard assessment did not form a comprehensive list of hazards. Instead, it provided a tool to provoke further exploration and analysis of cascading impacts to the food system in the context of Calgary.

Many hazards that might disrupt Calgary's food system could also occur elsewhere and still have an impact on our food system. We address this by considering supply chain disruption as a hazard and acknowledge that the current capacity of the Strategy can only address the areas where The City has an enabling or influencing role.

All hazards have the potential to compromise the availability, accessibility, acceptability and sustainability of Calgary's food system.
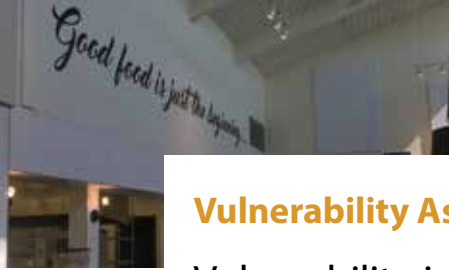
Vulnerability Assessment and Analysis

Vulnerability is when people, infrastructure, services, the natural environment or property are susceptible to the impacts created by a hazard.[ix] A vulnerability assessment helps us better understand the likelihood and consequences of hazards and changing conditions on the food system. Along with hazards, the assessment identified vulnerabilities that could produce a food system failure - where food is not available, accessible (physically or economically), or acceptable (either culturally or nutritionally).[x]

As with many Canadian cities, Calgary is highly reliant on the global food system to feed itself. Although local and regional food production is increasing, it will not replace Calgary's reliance on the global food system.

A critical issue in Calgary's food system is the ongoing crisis of chronic food insecurity and how this impacts the emergency food sector and emergency food response. The rising cost of food, housing, transportation and migration/population growth has increased the need for emergency food organizations to fill the gap. When organizations are stretched beyond their capacity, they are extremely vulnerable to shocks and stressors that impact food need.

Food System Vulnerabilities: Availability

Food is available if it is physically present and able to be consumed in a given location. [xii]

Supply Chains are Unpredictable and Long

Reliance on an Unpredictable Supply Chain: Calgary's reliance on the global food supply chain means that a production disruption from global food producers or a disruption in the transportation network could cause food shortages and food price volatility. The movement of food from farm to plate requires complex coordination of many systems. This puts the supply chain at risk for disruptions along the way.

Lack of Understanding of Regional Supply Chains: There is a need to better understand regional food supply chains and their ability to pivot to bring food into Calgary during an emergency event. Alberta's agricultural sector is the largest in Canada and employs more than 70,000 people yet most of the products grown and raised in Alberta are exported to international markets.[xiii] Urban and regional farming at all scales is growing but still represents a small share of Calgary's food supply chain. Small regional food-producing farms are challenged to find pathways to market to sell their products to Calgarians, either through grocery retail chains or at farmers' markets.

Understanding how food flows in and out of Calgary helps us develop awareness of events that could impact supply chains and support preparedness. Key questions include:

- Where does Calgary's food come from and how does it get here?
- How and where is food processed and distributed in Calgary/Alberta/Western Canada?
- What retailers account for the largest market share?
- How can we learn more about culturally specific food importers, challenges and opportunities?

The goal is not to replace the global food system but rather to encourage a diverse supply chain by strengthening the regional food system.

The Emergency Food Sector is at Capacity

Not-for-profit emergency food organizations are already beyond capacity due to inadequate household income, inflation, affordability, and increased immigration and migration. Though these organizations are intended to be short-term supports for Calgarians, the current economic reality for many people means they rely on emergency food support programs longer-term. During a short-term crisis event, emergency food organizations may not have the capacity to meet increased demand. This puts food insecure Calgarians even more at risk during emergencies.

Emergency Food Response Planning

The City of Calgary and partner emergency food organizations lack a framework for coordinating emergency feeding efforts or a group response that may be activated during a range of disaster situations. Continued access to food is a basic need that impacts a community's resilience to withstand and recover from disaster events. While a whole-of-government approach to emergency food provision is not practical, anticipating disruptions and working with the emergency food sector to restore flows of food as quickly as possible can be achieved with planning.

Planning and Coordination for Long-term Food Supply

There are very few examples of long-term urban planning for food supply in cities. Unlike other systems that provide essential goods and services like water and energy, planning and preparing for a healthy, reliable, and resilient long-term food supply is minimal. Uncoordinated preparedness planning among orders of government and community organizations will impact response and recovery to a food system disruption.

Food System Vulnerabilities: Accessibility

Food is accessible if it is both economically and physically accessible to all people in a community. [xiv]

Economic Food Access: Poverty and Food Insecurity

The high rate of food insecurity in Calgary presents challenges for resilience planning. In 2023, food insecurity impacted 27.4% of Albertans, up from 18.4% in 2019.[xv] Equity-denied communities are more likely to experience food insecurity. A key cause of food insecurity is inadequate household income. [xvi] Beyond income, inflation and food price affordability is also a contributing factor to food insecurity. Calgarians already facing food insecurity become more vulnerable when a food system failure occurs.

Food Price Volatility

The inter-connectedness of the global food supply chain means that many factors contribute to food price volatility including labour action, energy and fuel prices, geo-political events and climate events. Calgarians already facing food insecurity become more vulnerable when food prices increase. Food prices also play an important role in the type of food purchased and where Calgarians choose to shop, causing vulnerabilities in physical food access and the dietary and cultural acceptability of foods for Calgarians.

Community and Household Food Production

Community gardens and backyard gardens can supplement fresh produce for Calgarians during the growing season and if the global food supply chain is disrupted. Although an exact measure does not exist, community and household food production represent a very small share of food production, especially with the short growing season that Calgary experiences. Finding space to grow food is especially challenging for Calgarians living in multi-residential housing and consequently for many equity-denied Calgarians.

Physical Food Access

Physical access to food is dependent on distance to grocery stores, how Calgary communities are planned and designed and public mobility infrastructure and services. Many communities have been designed for motor vehicle transportation. Many residents across Calgary rely on walking, wheeling, or transit to access grocery stores. This means that in communities with insufficient food assets, residents have limited access to a grocery store or healthy affordable food. People who live in these areas and depend on transit services might struggle to access food when transit services are disrupted.

Food System Vulnerabilities: Acceptability

All people, at all times, have physical, social and economic access to sufficient, safe, healthy and nutritious food to meet their dietary needs and cultural food preferences. [xvii]

Culturally Appropriate Food Resources

The availability of culturally appropriate food resources (both emergency and day to day) is limited. This includes language translation for public information and community food programs.

Capacity of Emergency Food Sector

Not all emergency food organizations and programs have the capacity to provide foods that meet dietary needs and cultural food preferences, and food distributed as part of an emergency food response following a disaster may not meet these needs.

Need for More Data

Calgary's population continues to grow through immigration and migration. There is limited information available to understand culturally appropriate food needs and to support newcomers with resources to support their food needs. Many Calgarians rely on imported food to meet their cultural and spiritual needs. There is limited data on the impact of supply chain disruptions on food acceptability. More data is needed to inform further actions.

Sabzi Mandi Supermarket, Northeast Calgary.

Culturally acceptable spices.

Food System Vulnerabilities: Sustainability

Dependence on Non-Renewable Resources

The way we grow, transport and consume food directly impacts our climate and local environment. Relying on non-renewable resources such as oil and gas in our food system contributes to global climate change and local environmental degradation. Transitioning towards renewable alternatives is essential for sustainability, resilience and equitable access to food in the long-term.

Food Loss and Waste

There are high amounts of food loss and waste at every level of the food system, across the supply chain and at the consumer level.

Changing Climate, Water and Land Constraints

Changes in temperature and precipitation patterns, unpredictable growing conditions and increases in extreme weather events may make the sustainable production of food more challenging. Sustainable production requires management of water resources and land use. As the Calgary region faces water scarcity and environmental degradation, maintaining conditions for sustainable food production may present challenges.

Soil Degradation

Soil degradation is a global problem that has already impacted a third of agricultural soil globally, reducing the quality and quantity of crops and food produced and ecosystem biodiversity. The United Nations Food and Agriculture Organization predicts that 90 percent of the earths topsoil will be gone by 2050. [xviiii]

Consumer Preferences

Shifting consumer preferences towards sustainable food sources is essential but can be challenged by price considerations, social and political constructs and marketing influences.

Cracked dry mud, Nose Hill Park, Calgary.

Emergency food access.

Farmstand Program, Calgary.

Community Gardening, Calgary.

HOW IS THE CITY ALREADY PRACTICING FOOD SYSTEMS RESILIENCE?

The City has been working to build a more sustainable and resilient food system through the implementation of the CalgaryEATS! Food Action Plan. Over the past decade, The City has supported growth in urban agriculture (both indoor and outdoor).

The City provides more opportunities for regional farmers to sell produce to communities all across the city through the Farm Stand Program. The City convenes the YYC Food Collaborative, which comprises of a number of emergency and non-emergency food organizations across Calgary who are interested in addressing both immediate needs (short-term crisis) as well as root causes (longer-term stressors) of food insecurity.

Emergency food planning is an emerging field of practice in response to global lessons learned about being prepared to respond to food security and insecurity challenges. Preparedness involves the ongoing activities, communications and collaboration by residents, food system organizations, and The City to anticipate, prepare for, respond to, and recover from a food system disruption. Calgarians have demonstrated resilience through many crisis events, and through longer-term stressors, supporting one another through the floods of 2013, the COVID-19 pandemic, and ongoing stressors to the food system like inflation. A part of developing resilience is amplifying the strength of the mutual aid networks and preparedness that already exists in this city.

The City can do more to be better prepared to address food access challenges in the face of rising food insecurity as well as during emergency events.

BARRIERS TO RESTORING INDIGENOUS FOOD SYSTEMS

1) The historical and ongoing impacts of colonial displacement, forced movement, and residential schools. This includes a loss of generational transmission of knowledge and an increased reliance on colonial food systems.

2) The impacts of assimilation, which include requirements to enroll children in public schools that lack education rooted in traditional ecological knowledge. This has resulted in changes to family structures and traditional ways of teaching that impact cultural learning.

3) Individual and rights-centric land management systems, justice systems and policies do not consider community-based, restorative and participatory approaches.

4) Ongoing access issues to traditional gathering grounds, as well as diminishing access to wild foods and medicines because of climate change.

PERSPECTIVES FROM CALGARIANS ON FOOD RESILIENCE – WHAT WE HEARD

The City engaged residents and community organizations both formally and informally throughout the development of the Food Resilience Strategy. This included online engagement through the web portal Engage, and full reports for this engagement can be found for both the public and non-profit sector.

Throughout these engagements, The City aimed to do three things:

- Confirm assumptions about the boundary and scope of food systems work in municipalities;
- Identify any potential gaps;

- Learn more about existing practices of community resilience that already exist in Calgary.

The results of public engagement indicated overall support and enthusiasm for the identified outcomes, with an emphasis placed on the importance of economic access and local food. Many of the gaps identified in the engagement reflected implementation ideas that are in service of the four outcomes. This input has been noted and will be revisited as The City moves into implementation planning.

While approximately three quarters of those who were engaged did not have household emergency food kits, many participants reflected on the ways in which they take care of their neighbours and affinity groups during a crisis and beyond. Many of these relational resilience practices featured food-sharing – including community bulk buying, cooking together, sharing food, gardening and sharing harvests, and stocking community food pantries. Community organizations encouraged The City to build on the resilience that already exists in Calgary, and to implement based on these strengths.

GROWING COMMUNITY RESILIENCE, TOGETHER

The Nepalese community in Calgary is closely connected. Many community members use their green thumbs to grow various crops in backyards across Calgary. They coordinate production, harvests and processing together, which means that even in the middle of winter the community can enjoy the bounty of what they grew in the summer. Their food growing programs have been so successful that they have recently leased land south of the city to grow even more culturally appropriate food, which will continue to contribute to their collective food resilience.

AUTHENTICALLY SUPPORTING INDIGENOUS FOOD SYSTEMS

Indigenous Nations will lead the restoration of their cultural food systems. It's important for The City to center relationships around truth, reconciliation and authentic engagement, in a way that supports Indigenous self-determination. This responsibility extends beyond the borders of the city, and into the region and territory. To support Indigenous Food Systems, The City can:

1) Recognize Indigenous Peoples and communities as equal partners in policy development, land management and stewardship.

2) Commit to principles of honesty and respect.

3) Pursue actions that are in the best interests of Indigenous peoples and cultures.

4) Educate public servants and decision-makers in local Indigenous knowledge.

5) Recognize distinctions between individual Indigenous peoples and Nations.

6) Authentically engage with Urban Indigenous Peoples from all walks of life.

Chef at Grey Eagle restaurant. Photo by: Tourism Calgary | Colin Way

The Bow and Elbow river confluence, Calgary.

A regional bison farm, Alberta.

5. A FOOD RESILIENT CALGARY

VISION: Calgary has a resilient food system, where food is reliably **AVAILABLE**, **ACCESSIBLE**, **ACCEPTABLE** and **SUSTAINABLE**.

OUTCOMES:

A.
Food Availability:
Calgary's food supply is reliably available from a diverse mix of sources through daily life and emergencies.

B.
Food Accessibility:
Food is physically and economically accessible to Calgarians.

C.
Acceptable Food:
Calgary's food system meets the social, cultural and dietary needs of Calgarians.

D.
Environmental Sustainability:
Calgary's local food system contributes to net-zero goals, climate resilience, and a healthy environment.

OBJECTIVES:

Food is Available

A1. More food is produced and harvested in Calgary and region to be sold, donated and shared in Calgary.

A2. Supply chains are shorter, stronger and more diverse.

A3. Calgary has a thriving local food economy.

A4. Calgary communities have Food Resilience Plans.

A5. Calgary has an emergency food response plan.

A6. The City of Calgary has partnerships across all orders of government, community, non-profits and the private sector for emergency preparedness and response.

A7. Critical food system infrastructure is resilient to hazards.

Food is Accessible

B1. Calgarians can easily access food in their communities by walking, wheeling, a short transit trip or delivery.

B2. Calgarians have enough income to meet their basic needs.

B3. Calgarians' right to food is not limited by lack of income.

Food is Acceptable

C1. Calgary's food system supports access to diverse culturally a and spiritually acceptable foods.

C2. Calgarians have food that is nutritious and safe for their dietary needs.

C3. Calgary's food system provides opportunities for social and community connection.

Our Local Food System is Sustainable

D1. Calgarians, businesses and institutions adapt food systems to a changing climate.

D2. Calgary has a circular food system.

D3. Natural assets in Calgary are valued as food system assets.

D4. The food system supports ecosystem services, biodiversity and soil health.

D5. Calgary's local food system is net zero by 2050.

Vision: Calgary has a resilient food system, where food is reliably **AVAILABLE**, **ACCESSIBLE**, **ACCEPTABLE** and **SUSTAINABLE**.
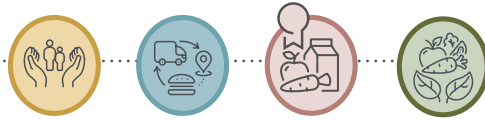
The vision features four themes, which are further expanded upon through four outcome statements. The outcomes express the ideal state of our food system. Each outcome is further expanded by objectives and are key areas of focus because they are connected to the most key resilience states, which were identified on page 10.

FOOD IS AVAILABLE **Outcome: Food supply is reliably available from a diverse mix of sources, through daily life and through emergencies.**

How this contributes to a resilient food system: A reliable supply of food is critical for food resilience. Availability is the physical presence of food in our city, no matter what may be happening locally or globally.

Vulnerability: Supply chain failures may interrupt the flow of food in and out of the city. Supply chain failures could be the result of global conflict, pandemics, severe weather locally or globally, or crop failures due to changing climate. These failures impact production, processing, distribution, wholesale and retail.

Strategy: Focus on supporting Calgary to have a reliable supply of food by enhancing local-regional production, developing emergency plans at the household, community and municipal level, and ensuring that critical infrastructure that impacts the movement of food supply is resilient to hazards.

Objective(s)	Key Resilience States Achieved
Daily life: More food is sustainably produced, harvested and processed in the Calgary region to be sold, donated and shared in Calgary.	Diversity, Redundancy, Flexibility, Sustainability, Community
Daily life: Supply chains are shorter, stronger, and more diverse.	Diversity, Redundancy, Flexibility
Daily life: Calgary has a thriving local food business economy.	Diversity, Redundancy, Sustainability, Flexibility
Emergencies: Calgary communities have Food Resilience Plans.	Community, Flexibility, Preparedness
Emergencies: The City of Calgary has an emergency food response plan.	Flexibility, Preparedness
Emergencies: The City has partnerships across multiple orders of government, community and the private sector for emergency preparedness and response.	Community, Flexibility, Preparedness
Emergencies: Critical food system infrastructure is resilient to hazards.	Diversity, Redundancy, Flexibility, Preparedness

Outcome: Food is physically and economically accessible to Calgarians.

How this contributes to a resilient food system: A key aspect of food resilience is access. Access is our ability to physically get to various food assets like grocery stores, gardens and markets or have our food come to us. It is also our ability to purchase food (or supplies to grow it) from these places.

Vulnerability: All hazards have the potential to compromise physical access to food assets. Economic access to food is challenged by a variety of stressors that increase the cost of living or decrease income. These stressors include income inequality, housing affordability, utility affordability, transportation affordability, geopolitical conflict, wage stagnation, inflation, and changing climate.

Strategy: Improving physical access enhances resilience by ensuring that we do not have to travel long distances to be able to eat – everything we need can be easily found in our communities. This supports us in our day-to-day lives but also ensures that if our ability to move around the city is compromised by a hazard, we can still eat. Economic access also matters; when all Calgarians have the income they need to purchase food and other basic needs, their resilience increases.

Objectives

Objective	Key Resilience States Achieved
Calgarians can easily access food in their communities by walking, wheeling, a short transit trip, or delivery.	Diversity, redundancy, flexibility, preparedness, community, sustainability
Calgarians have enough income to meet their basic needs.	Flexibility, preparedness, sustainability
Calgarians' right to food is not limited by lack of income.	Flexibility, preparedness, sustainability, community

Farmstand Program, Calgary.

Farmstand Program, Calgary.

FOOD IS ACCEPTABLE Outcome: Calgary's food system meets the social, cultural and dietary needs of Calgarians.

How this contributes to a resilient food system: Calgarians have a diverse range of food needs that are informed by their health, spirituality, and culture. An acceptable food system accounts for those needs and can produce and distribute food that meets them. When this happens, people are physically healthier. They see themselves reflected in the food system and see it as something that connects us to land, history and to each other.

Vulnerability: Acceptable food systems are tied to accessible food systems and are impacted by all hazards. A hazard that may impact Calgarians' capacity to access acceptable foods is supply chain disruption. These disruptions can impact the flow of imported ingredients that many Calgarians depend on to make foods that nourish their cultural needs. Other vulnerabilities include limited culturally or dietarily acceptable food resources – the emergency food sector might struggle to meet the diverse needs of Calgary's demographics.

Strategy: Actions and objectives aimed at helping Calgarians access foods that meet their needs focus on increasing the production of culturally and dietarily appropriate ingredients. They also emphasize ensuring community food resources reflect cultural preferences and empowering Calgarians to celebrate and express their food cultures.

Objective	Key Resilience States Achieved
Calgary's food system supports diverse cultural and spiritual traditions.	Diversity, redundancy, community, sustainability
Calgarians have food that is nutritious and safe for their dietary needs.	Diversity, flexibility, preparedness, sustainability
Calgary's food system provides opportunities for social and community connection.	Diversity, redundancy, flexibility, community, preparedness, sustainability

Business providing acceptable food, Calgary.

Culturally acceptable food bank, Calgary.

FOOD IS SUSTAINABLE Outcome: Calgary's local food system contributes to net-zero goals, climate resilience, and a healthy environment.

How this contributes to a resilient food system: It's important to consider the role Calgary's local food system plays in sustaining a healthy environment. Improving sustainability ensures that we are considering the needs and limits of the planet when we are designing resilient food systems. When we consider the natural assets we have in Calgary and how our food system may be impacting them, as well as how we may adapt to this changing climate, we enhance our long-term resilience, preserving food availability, accessibility and acceptability for future generations.

Vulnerability: Changing climate makes our local food system extremely vulnerable – changing weather patterns, unpredictable severe weather events, and other impacts of changing climate have impacted all levels of the food system. Our current food system includes unsustainable practices that contribute to global climate changes and diminishing biodiversity, and local environmental degradation.

Strategy: Actions and objectives support all Calgarians in adapting to our changing climate. We focus on reducing food waste, preserving our natural and Indigenous food assets, encouraging more Calgarians to produce and process our own food. We ensure that practices support the health of the land and the biodiversity in Calgary, and that our local food system contributes to municipal net zero emissions targets.

Objectives

Objective	Key Resilience States Achieved
Calgarians, businesses and institutions adapt food systems to a changing climate.	Diversity, Redundancy, Flexibility, Sustainability, Preparedness
Calgary has a circular food system.	Diversity, Redundancy, Flexibility, Sustainability, Preparedness
Natural assets in Calgary are valued as food system assets.	Diversity, Redundancy, Flexibility, Sustainability, Preparedness
The food system supports ecosystem services, biodiversity, and soil health.	Diversity, Flexibility, Sustainability
Calgary's local food system contributes to municipal net zero targets.	Diversity, Flexibility, Sustainability

City of Calgary from farmer's field.

City of Calgary Compost facility.

HOW WILL WE GET THERE?

The implementation of this strategy will be co-created with community partners and Calgarians, ensuring that it abides by our principles – with an emphasis on equity. The preliminary food system assessment yielded a large list of potential implementation action ideas. Coupled with the expertise of community and accountability to key resilience states, The City will work in emergence with community to advance implementation of food resilience actions. This allows us to be nimble and focus on communities most impacted by food insecurity.

YYC Food Collaborative at The Calgary Foundation.

Because food systems are non-linear and complex, many actions benefit multiple outcomes and objectives. Food resilience actions belong to <u>one of three</u> categories:

Foundational Actions	**Connected Cross-Corporate Actions**	**Emergent Actions**
An initial action that must be completed in advance of other actions. Foundational actions will provide the data needed or knowledge required to better understand a food system challenge and move forward.	These actions build on cross-corporate work that is currently being done with The City and its partners.	These actions are not named in the Food Resilience Strategy but will emerge because of increasing uncertainty and unpredictability. They strike a balance between implementing a plan and being responsive. By leaving room for emergent actions, we ensure alignment with two key resilience states: flexibility and sustainability.

FOUNDATIONAL ACTIONS

Action	Outcomes				Timeline
Continue to build relationships with Indigenous communities for collaboration and co-creation.	🟢	🟡	🔴	🔵	Ongoing
Develop municipal emergency food response plan.	🟢		🔴	🔵	Long-term
Conduct a food flow analysis to better understand Calgary's supply chain.				🔵	Mid-term
Develop a set of metrics to measure the resilience of Calgary's food system.	🟢	🟡	🔴	🔵	Short-mid-term
Build role clarity across different orders of government for both daily life food resilience as well as emergency food resilience.	🟢	🟡	🔴	🔵	Mid-term
Develop Community Food Resilience Plans in Priority Food Communities.	🟢	🟡	🔴	🔵	Mid-long term
Develop tools and best practices that advance the Food Resilience Strategy's five principles.	🟢	🟡	🔴	🔵	Short-mid-term
Develop implementation plan	🟢	🟡	🔴	🔵	Short-term
Utilize strategic foresight to inform possible food futures.	🟢	🟡	🔴	🔵	Ongoing

LEGEND:
- Short term: Within 1 year
- Mid term: 2-4 years
- Long term: 5 years+

🟡 **AVAILABLE**
🔵 **ACCESSIBLE**
🔴 **ACCEPTABLE**
🟢 **SUSTAINABLE**

CONNECTED CROSS-CORPORATE ACTIONS

Action	Outcomes	Timeline
Support the YYC Food Collaborative to: • Ensure dignified and thoughtful provision of emergency food. • Address root causes of food insecurity.	AVAILABLE ACCEPTABLE ACCESSIBLE	Ongoing
Complete a business continuity sector plan with the emergency food sector.	ACCESSIBLE	Short-term
Support initiatives that enhance access to healthy food in communities.	AVAILABLE ACCEPTABLE	Short-mid-term
Create food sector plans to reduce waste, especially during emergencies.	SUSTAINABLE AVAILABLE	Mid-term
Advance economic food access through collaboration with climate equity, housing, transit and fair entry.	AVAILABLE	Ongoing

LEGEND:
- Short term: Within 1 year
- Mid term: 2-4 years
- Long term: 5 years+

AVAILABLE
ACCESSIBLE
ACCEPTABLE
SUSTAINABLE

Accountability

Progress on the implementation of this Strategy will be reported through The City's Climate Progress Report.

RESTORING INDIGENOUS FOOD SYSTEMS: CULTIVATING ACCOUNTABILITY

Accountability is relational. As the Food Resilience Strategy continues into implementation, committing to ongoing learning and relationship-building is key. This will form the foundation for practices of accountability that are identified by Indigenous community members. While the restoration of Indigenous Food Systems is rooted in self-determination, The City can share resources, land, and knowledge. The City can also work to better understand and embody the worldviews of Nations who have stewarded this land since time immemorial.

ACKNOWLEDGEMENTS

GLOSSARY

Term	Definition	Reference
Circular Food System	A circular food system is part of a broader circular economy, one that eliminates waste and pollution, and conserves resources. It is a shift from a throw-away to a circular mindset to extend the lifecycle of goods, food, and resources through better design and continuous reuse, so nothing goes to waste.	The City of Calgary, 2024
Climate Adaptation	Refers to the actions, policies, programs, tools and strategies intended to reduce the negative impacts of climate change on our city's infrastructure, natural assets, economy, and people.	The City of Calgary, 2022
Climate Change	A long-term change in the average weather patterns that have come to define earth's local, regional and global climates due to the increase in atmospheric greenhouse gases caused by human activities.	The City of Calgary, 2022
Climate Mitigation	The actions intended to reduce and prevent greenhouse gas emissions from going into the atmosphere, or those activities that remove these greenhouse gases from the atmosphere through natural or technological means.	The City of Calgary, 2022
Climate Risk	A metric used to understand climate impacts, determined by the interactions between climate hazards, the exposure to each hazard and the community vulnerability of the affected system or human to the hazards	The City of Calgary, 2022
Critical Infrastructure	Critical infrastructure refers to processes, systems, facilities, technologies, networks, assets and services essential to the health, safety, security or economic well-being of Canadians and the effective functioning of government.	Public Safety Canada: National Strategy for Critical Infrastructure, 2017 www.publicsafety.gc.ca/cnt/rsrcs/pblctns/srtg-crtcl-nfrstrctr/index-en.aspx
Decolonization (of food system)	Utilizing food sovereignty as a tool to revitalize Indigenous food practices and ecological knowledge as an approach to food system reform.	Lee, C. (2020). " Indigenizing " Food Sovereignty. Revitalizing Indigenous Food Practices and Ecological Knowledges in Canada and the United States" Retrieved April 10, 2024 from: (PDF) " Indigenizing " Food Sovereignty. Revitalizing Indigenous Food Practices and Ecological Knowledges in Canada and the United States	Chansik Lee - Academia.edu

Term	Definition	Reference
Disaster Risk	The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.	United Nations Office for Disaster Risk Reduction. Disaster risk	UNDRR
Diversity (Food Systems Resilience Attribute)	The presence and variety of different elements in the food system that support adaptability and innovation.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Equity – Distributional	The benefits and burdens of food system planning are equitably distributed.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Equity – Intergenerational	Consideration is given for actions taken today will conserve resources and benefit future generations.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Equity – Procedural	Procedures are transparent, fair and inclusive in food resilience planning, implementation and evaluation processes.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Equity – Structural	Resilience planning and implementation aim to uproot long-term, embedded structures that perpetuate inequitable food system and resilience outcomes.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Economic Food Access	Economic food access refers to an individual or household ability to afford and obtain the food necessary to meet dietary, cultural, and nutritional needs.	The City of Calgary, 2024
Emergency Food Provider	Food banks, food pantries, meal delivery programs, soup kitchens and other organizations that collect and distribute food to communities or individuals.	Zeuli, K., Nijhuis, A. & Gerson-Nieder, Z. (2018). Resilient Food Systems, Resilient Cities. A High-Level Vulnerability Assessment of Toronto's Food System.
Environmental Sustainability	The practice of conserving, protecting and reducing our impact on and use of the planet's natural resources; it reflects the need to live within the planet's carrying capacity to ensure quality of life, human and ecological health and well-being is maintained and thrives now and in the future.	The City of Calgary, 2021
Equity	Conditions are adjusted to meet people's diverse needs, strengths and social realities. It requires recognition that different barriers (often systemic) exist for diverse individuals or groups. The result of equity is all people have the opportunity to benefit equally from City services.	The City of Calgary, 2022
Flexibility (Food System Resilience Attribute)	The ability to make modifications to food system elements during disruptive events when needed.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Food Accessible	Food is accessible if it is both economically and physically accessible to all parts of the population.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.

Term	Definition	Reference
Food Available	Food is available if it is physically present and available to consume in a given location.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Food Acceptable	Food is considered acceptable if it is spiritually and culturally acceptable for the person eating it, nutritionally adequate and safe to eat.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Food Insecurity	The inability to purchase food due to financial constraints.	Zeuli, K., Nijhuis, A. & Gerson-Nieder, Z. (2018). Resilient Food Systems, Resilient Cities. A High-Level Vulnerability Assessment of Toronto's Food System.
Food Security	Food security means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.	Food Security	IFPRI : nternational Food Policy Research Institute
Food System	A network connecting food production, processing, distribution, access & preparation, consumption and food waste recovery.	The City of Calgary. (2012)
Food System Asset	Natural, physical/built, political or social assets that are vital to ensuring a well-functioning food system before, during and after a disruptive event.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Food System Resilience	The capacity over time of a food system and its units at multiple levels, to provide sufficient, acceptable, and accessible food to all, in the face of various and even unforeseen disturbances.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Indigenous Food System	Indigenous food systems include all of the land, air, water, soil and culturally important plant, animal and fungi species that have sustained Indigenous peoples over thousands of years.	Indigenous Food Systems Network. (2024). Indigenousfoodsystems.org
Intersectionality	A concept that shows how race, gender, class and other factors are interconnected and affect people's quality of life.	Oxford English Dictionary (https://www.oed.com/dictionary/ intersectionality_n?tab=meaning_ and_use#335059764)
Natural Hazard	A naturally occurring event that threatens lives, property and other assets.	The City of Baltimore, Maryland. (2017). Baltimore Food System Advisory Report.
Net Zero	A state in which greenhouse gas (GHG) emissions emitted into the atmosphere are balanced by the removal of GHG out of the atmosphere	The City of Calgary, 2022
Non-Natural Hazard	Non-natural hazards are disruptive events that result from a failure in a human-created system or infrastructure component.	The City of Baltimore, Maryland. (2017). Baltimore Food System Advisory Report.
Preparedness (Food System Resilience Attribute)	A plan in place for how to ensure food access, availability, and acceptability during a disruptive event.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Redundancy (Food System Resilience Attribute)	Multiple or duplicative food system elements that can serve the same purpose.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.

Term	Definition	Reference
Relational	Indigenous relationality takes as its starting point to be the multiplicity of relationships that humans have with each other and the natural world. Understanding how we are situated within a dense series of relationships is a way of both describing and understanding the world. Such an emphasis on relationships is not neutral but provides lessons on how we should order our societies.	https://journals.sagepub.com/doi/full/10.1177/11771801231168380
Resilience	The capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.	The City of Calgary, 2018
Resilience Attribute	A characteristic that has been linked with more resilient food systems.	John Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.
Shock	Sudden, sharp events or disasters that threaten a city.	The City of Calgary, 2018
Stressor	Slow moving activities that weaken the fabric of a city over time.	The City of Calgary, 2018
Structural Racism	Refers to the functioning of economic and social institutions through which racialized groups become systematically marginalized, discriminated and disadvantaged as those who form part of the dominant community assert their authority and power.	The City of Calgary, 2018
Sustainability (Food System Resilience Attribute)	Food system elements that contribute to the long term health of the food system by achieving social, economic and environmental benefits.	City of Calgary, 2024.
Traditional Ecological Knowledge	The on-going accumulation of knowledge, practice and belief about relationships between living beings in a specific ecosystem that is acquired by indigenous people over hundreds or thousands of years through direct contact with the environment, handed down through generations, and used for life-sustaining ways.	US National Park Service (2024). Overview - Indigenous Knowledge and Traditional Ecological Knowledge (U.S. National Park Service) (nps.gov)
Transformative Capacity	The capacity to make intentional change to stop or reduce the causes of risk, vulnerability, poverty, and inequality, and ensure the more equitable sharing of risk so it is not unfairly borne by people living in poverty or suffering from discrimination or marginalization.	Jeans, H., Castillo, G.E., & Thomas, S. (2017). Absorb, adapt, transform: Resilience capacities.
Trauma-informed Approach	Trauma-informed approaches are policies and practices that recognize the connections between violence, trauma, negative health outcomes and behaviours.	Trauma and violence-informed approaches to policy and practice - Canada.ca
Two-eyed Seeing	Two-Eyed Seeing invites us to recognize the value of both Indigenous knowledge and Western scientific knowledge. By weaving between these ways of knowing, we can make informed decisions that honor the interconnectedness of all life and contribute to a better world for future generations.	https://www.2eyedseeing.ca/about-5
Vulnerability	The degree to which a system may be adversely affected; vulnerability encompasses a variety of concepts including sensitivity or susceptibility to harm and system response capacity	The City of Calgary, 2022

ENDNOTES

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ix   Johns Hopkins Center for a Livable Future. (2022). Food Systems Resilience. A Planning Guide for Local Governments.

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xvii The City of Calgary. CalgaryEATS! Food Action Plan. (2012). Pg. 17

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INDIGENOUS FOOD SYSTEMS REFERENCES

The Boxes throughout the Food Resilience Strategy were developed through conversations and the food team's own collective learning process. Because we wanted to capture the narrative quality of the Boxes, we have chosen to save all of our references for the end. Along with the references below, we engaged in conversations with people who have long histories in Treaty 7. There were many commonalities in what they shared, and the content in the boxes is a reflection of our understanding of this sharing.

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- Box I references: 1, 2, 3, 4, 5, 6
- Box II references: 1, 2, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
- Box III references: 1, 2, 6, 12, 15, 16, 17
- Box IV references: 1, 2, 5, 6, 7, 10, 16, 18
- Box V references: 1, 2, 3, 7, 8, 9, 12, 16, 17, 18, 19, 20, 21, 22
- Box VI references: 1, 2, 5, 6, 8, 10, 11, 16, 17, 19, 21, 23

i   1st Annual Interior of B.C. Indigenous Food Sovereignty Conference Final Report (2006). Dawn Morrison. Prepared for the Interior of B.C. Indigenous Food Sovereignty Conference Planning Committee.

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