



# RESILIENT CALGARY



# TABLE OF CONTENTS

<b>A Message from the Mayor</b> .....	4	Outcome 1B: Digital Disparity in Calgary is addressed so Calgarians have safe and equitable access to a connected economy and social realm .....	46
<b>A Message from the Chief Resilience Officer</b> .....	5	Action 1B.1: Understand Digital Disparity.....	47
<b>Executive Summary</b> .....	6	Action 1B: 2 Be 5G-Ready.....	48
<b>Resilient Calgary Strategy: An Overview</b> .....	11	Outcome 1C: Strengthening resilience through business continuity .....	49
<b>Calgary’s Stresses, Shocks, Challenges and Opportunities</b> .....	12	Outcome 1D: Calgary is able to coordinate efficiencies, levers and incentives to grow and attract business ..	51
<b>A History of Resilience</b> .....	15	Action 1D.1: Attraction, Growth and Resilience Dividend.....	53
<b>Calgary context</b> .....	16	Action 1D.2: Implement a Living Lab Strategy and Governance Model.....	55
<b>Our Journey Toward a Resilient Calgary</b> .....	17	Action 1D.3: The Future of Calgary’s Centre City ..	57
<b>Supporting Our Journey</b> .....	18	<b>Pillar 2 Inclusive Futures</b> .....	58
<b>We are Guided</b> .....	18	Outcome 2A: Calgary institutions include equity-seeking communities in decision-making and democratic processes .....	63
<b>We are Joined</b> .....	19	Action 2A.1: Diversify Representation on Boards .....	65
<b>We Are Not Alone</b> .....	21	Action 2A.2: Open Spaces for Inclusive Conversations .....	66
<b>We are Inspired</b> .....	22	Action 2A.3: Advance Equity in Organizations with a Multi-Sectoral Community of Practice.....	68
<b>A Letter from the 100 Resilient Cities</b> .....	24	Outcome 2B: Calgary institutions have trusted and informed relationships with Indigenous communities “in a good way”** .....	69
<b>Supporting Our City Vision</b> .....	25	Action 2B.1: Support the Revitalization of Indigenous Cultures and Languages.....	71
<b>Alignment to Council and/or Community Approved Plans, Policies and Frameworks</b> .....	27	Action 2B.2: Walk Parallel Paths Together in a “Good Way”.....	72
<b>Characteristics of Resilient Systems</b> .....	28	Outcome 2C: Calgary institutions value diverse governance paradigms.....	74
<b>The City Resilience Framework</b> .....	29	Action 2C.1: Build a Governance Systems Map....	75
<b>How to Read the Strategy Action Template Structure</b> .....	30		
<b>Shared Theme A Future-Focused Calgary</b> .....	31		
Action S.1: Deliver a Calgary Foresight Planning Method .....	35		
Action S.2: Use a Resilience Dividend Tool .....	36		
Action S.3: Review the Triple Bottom Line Policy .....	38		
<b>Pillar 1 The Future of Calgary’s Economy</b> .....	40		
Outcome 1A: Calgary’s workforce is ready for emerging economies .....	43		
Action 1A.1: Develop Talent for Emerging Economies.....	44		

Outcome 2D: Calgary institutions invest in equitable economic development.....	76	<b>Pillar 4 Future Ready Infrastructure</b> .....	103
Action 2D.1: Encourage Business Investments Addressing Inclusion .....	78	Outcome 4A: Calgary infrastructure investment is strategic, coordinated and future-focused .....	108
Action 2D.2: Develop a Social Procurement Policy and Strategy.....	79	Action 4A.1: Apply a Resilience Lens to Strengthen Public Infrastructure Investment Decisions .....	110
Action 2D.3: Explore Guaranteed Universal Basic Income Options .....	80	Action 4A.2: Maintain and Improve the Infrastructure That Supports Service Needs .....	111
<b>Pillar 3 The Future of Calgary's Natural Infrastructure</b> .....	81	Outcome 4B: Calgary services are supported by shock and stress resilient watershed systems.....	113
Outcome 3A: Calgarians are aware of our key natural infrastructure and its role in providing community benefits .....	87	Action 4B.1: Implement an Integrated Watershed Management Approach .....	114
Action 3A.1: Natural Infrastructure Awareness....	88	Action 4B.2: Develop a Watershed Investment Strategy.....	116
Action 3A.2: Natural Infrastructure Inventory....	90	<b>Resilient Calgary Strategy Summary</b> .....	118
Outcome 3B: Calgarians are supported through sound analysis of natural infrastructure value that informs decision-making.....	92	<b>Pillars, Outcomes, Actions Summary Table</b> .....	118
Action 3B.1: Natural Infrastructure Valuation Toolkit .....	93	<b>Acknowledgements</b> .....	121
Action 3B.2: Natural Infrastructure Integration into City Processes.....	95	<b>A Call to Action</b> .....	121
Outcome 3C: Calgarians are supported through strategic investment in natural infrastructure .....	97	<b>Appendices</b> .....	123
Action 3C.1: Natural Infrastructure Policy Integration .....	98	Appendix 1: Glossary.....	123
Action 3C.2: Natural Infrastructure Implementation Support.....	101	Appendix 2: References/Sources.....	128
		Appendix 3: Strategic Alignment .....	133
		Appendix 4: United Nations Sustainable Development Goals Alignment.....	135
		Appendix 5: Leveraging Existing Calgary Plans: Strategic Alignment to Council and Community Approved Documents.....	136

## A MESSAGE FROM THE MAYOR

I bring you greetings from a place called Moh'kinsstis — the Elbow, a place where two great rivers meet. In Calgary, we are all Treaty 7 people. It's the traditional Indigenous territory of the Blackfoot people (Siksika, Kainai, Piikani, Amskapi Pikuni), the Beaver people of the Tsuu T'ina Nation and the Stoney Nakoda Nations people (Bears paw, Chiniki and Wesley), a place where we walk in the footprints of the Métis and our Inuit sisters and brothers from across Canada and around the world.

People have been coming here for thousands of years to hunt, fish, trade, live and love - but above all, to build community.

On behalf of my City Council colleagues and the citizens of Calgary, I am very excited to be launching our Resilient Calgary strategy.

Calgary has been through many stresses and shocks. In fact, half of Canada's 10 costliest disasters have happened in Calgary. We have been through a devastating flood, a tree-crushing September snowstorm, hail and high wind events. We are continuing to recover from an economic downturn and the accompanying employment loss. Together, we have picked up and kept moving forward – continuously rebuilding and reimagining our community.

This Resilient Calgary strategy builds on the lessons applied through our historical stress and shock experiences, and focuses on our future. Resilience can mean many things. It is about community spirit, it is about being able to step in, help out and emerge stronger together. A truly resilient community is one where the economy, infrastructure, natural areas and an inclusive society empower everyone with the opportunity to make a great life in our city.

I want to thank everyone: our community partners, the citizens who participated in this work, our guiding stakeholders and City Administration for the part you have played in developing our Resilient Calgary strategy. Because it includes many of your voices and input, I hope you consider it yours.

This reflects the best of our city, and I know that with all of us working together as a community, we will become even more resilient.

Sincerely,



Mayor Naheed Nenshi





## A MESSAGE FROM THE CHIEF RESILIENCE OFFICER

Calgary: we are, indeed, resilient.

Our community is vibrant, hard-working, optimistic, diverse and energetic. There is a spirit to our city that welcomes guests, supports neighbours, finds solutions when faced with a challenge and shares joy in each other's success.

We are a great city because of our community spirit. As a community, we have risen above many stresses and shocks. We have in recent years, together, withstood a flood, managed damaging snow storms, cleaned up from hail and high winds, helped each other find approaches and solutions to mental wellness, welcomed new Canadian residents, engaged our community to create approaches to affordable housing and are innovatively addressing our persistent economic downturn. These examples demonstrate the true spirit of Calgary and the true strength of resilience.

The development of this resilience strategy has been the result of consultations with our community, workshops with partners, connecting with organizations and subject matter experts, and learning from all of their research and experiences. Together, we have placed a lens on the most urgent resilience issues, lifted our awareness of each other's efforts to build resilience and leveraged our collective action. We have constructed this strategy on the foundation of resilience work that has come before us, and have linked this work to resilience work already in action. Without everyone's passion, dedication and knowledge, this strategy would not be possible.

Thank you for being a key part of Calgary's resilience.

Brad Stevens  
Chief Resilience Officer and Deputy City Manager



## EXECUTIVE SUMMARY

Calgary has a vision: a great place to make a living, a great place to make a life. We have a long history of imagining our community, developing actions to accomplish our collective goals, and together chartering new aspirations. Along this journey we have had our share of disruptions — the chronic stresses, such as not being inclusive of multiple perspectives, and employment rates that shadow our economic downturn, and acute shocks, such as the 2013 flood — that can keep us from reaching our vision. Time and time again, we join together, support each other, learn from our experiences, and use this shared journey to set new goals.

In 2013, Calgary experienced a significant disaster event that disrupted our community, our economy, our infrastructure and our natural environment. Water from our mountain-fed rivers, combined with saturated earth from a long winter and recent heavy rainfall created a flood not experienced in a century. Our downtown, the heart of Calgary, was closed as water drained from its streets. People and businesses were evacuated from their homes and livelihoods, and critical infrastructure impacts halted services. We learned a lot, together, about responding and recovering, repairing and funding, communicating priorities and setting recovery goals. What is most memorable is the community spirit that lifted our hearts, hands working together to support each other, and the commitment by all to regain our beloved Calgary.

This optimism and hope experienced during the 2013 flood has driven us to be better, to invest in resilience, and to continue efforts together to meet our vision

for Calgary. We have learned that a city's ability to function is often weakened by chronic stress (such as economic uncertainty, climate change, poverty, increased unemployment) and acute shocks (like financial crisis, extreme weather, infrastructure failure). Careful attention to local, regional and national trends and events, intentional goal setting and taking collective action can help a city improve its ability to respond effectively and serve its population.

After experiencing our 2013 flood, we decided to be intentional about understanding the things that could disrupt our quality of life. The journey to develop this Resilient Calgary strategy has helped us identify what our greatest stresses and shocks might be, encouraged us to explore these disruptors and gather knowledge about our readiness for them, and compelled us to identify the specific goals and actions to move us forward toward our vision of Calgary as a sustainable, resilient place.



View of downtown  
during 2013 flood,  
**June 22, 2013**

The strategy development occurred in three specific phases. The first was to host a conversation about resilience in our community and gather perceptions of what our stresses and shocks might be. This was a natural conversation in Calgary following the 2013 flood event. As we worked on flood recovery, we analyzed our vulnerabilities during that event and recognized there were specific focus areas that required deliberate recovery and resilience efforts. These included intentionally supporting our community with services as they rebuilt their homes and businesses, ensuring our critical infrastructure was able to support service delivery, managing the financial impacts of the event to keep our economy and City finances strong and communicating our recovery progress and resilience building as a community.

Through our flood recovery work, and early conversations about the pending economic downturn, we built on the heightened awareness of resilience present in our community. Council supported the maturation of the recovery team into a resilience team in the 2014-2018 budget and business plan. It was this resilience focus that supported our application to the 100 Resilient Cities network, and we were accepted as a member in 2016. Our Deputy City Manager was appointed as Chief Resilience Officer in 2017. We participated in engagement activities such as the Agenda Setting Workshop and the Downtown Economic Summit in 2017, conducted focus group sessions and gathered information through The City of Calgary Customer Satisfaction Survey among other sources of data.

This first phase of intentionally building resilience awareness was quickly followed by phase two: the opportunity to pair our shock and stress perceptions with statistical information and research, activities underway in our community, and the goals and actions identified in many City and community strategies and plans. The Preliminary Resilience Assessment (available at [www.calgary.ca/resilientcalgary](http://www.calgary.ca/resilientcalgary)) was shared with Council in March of 2018 and reflected our assessment of these stresses and shocks, supported the One Calgary 2019-2022 service plan and budget process, and helped us prioritize the four discovery areas for the third phase of work to develop the strategy. From June 2018 until March 2019, working collaboratively with community, an opportunity assessment was conducted resulting in the Resilient Calgary strategy.

The outcomes, goals and actions of the strategy support Citizen Priorities and Council Directives identified within the One Calgary 2019-2022 service plans and budgets. Our community has joined us in this conversation along the way as we worked to understand our potential risks and to develop the key strategies and actions to address these risks. The result is a strategy that enables Calgary to continue our long tradition of resilience. We are acting now, are future-focused and flexible for technological innovation, economic diversity, strong infrastructure, environmental sustainability and social change for our community: for today and for generations to come.



The fabric of Calgary is woven from the many colourful threads of its people, its landmarks and its stories. Calgary's Poet Laureate and Resilience Strategy champion, Sheri-D Wilson, reached out to Calgary's arts community, asking people to share their thoughts on resilience through perspectives of our landmarks, our shared memories and our journey together. They were asked to fill in the following:

**"I'll meet you at (a real place or landmark in Calgary) and then we'll (a publishable activity)."**

This journey can be found throughout the strategy reflecting our past while we dream of our future.



**Alberta University of the Arts** The inspiring illustrations used throughout this resilience strategy are the result of a collaboration between The City of Calgary and Alberta University of the Arts. Under the guidance of the Resilience team and AUA faculty, students were asked to create artwork that represented the challenges facing Calgary and its need for becoming a resilient city. What appears on these pages are the expressions of their talent and imagination.



# The Resilient Calgary strategy includes four pillars and a shared theme:

Pillar 1: The Future of Calgary's Economy

Pillar 2: Inclusive Futures

Pillar 3: The Future of Calgary's Natural Infrastructure

Pillar 4: Future Ready Infrastructure

Shared theme: A Future Focused Calgary

Actions are described in each pillar that highlight the collaborative interests of resilience work and goals to achieve.



## Pillar 1: The Future of Calgary's Economy

Our urban environment and the economic engine that supports it are interconnected.

As a resource-based economy, Calgary is often at the mercy of global forces. In 1981, world oil prices collapsed leading to high unemployment and bankruptcy. Again in 2015, dropping prices led to thousands of job losses and a provincial recession. We remain committed to a strong economy, are preparing for a digital and technological shift, and want our community to have skills that support the jobs of the future. We are in the midst of a structural economic change, and our can-do attitude and willingness to embrace innovation bring brightness to an otherwise testing time.



## Pillar 2: Inclusive Futures

The people of our community support one another, working together to keep our city's heart beating proudly. We welcome new people and work to find homes for all of our community members. We collectively share resources and ideas to address wellness. Since the 2013 flood, we join together each year in June for Neighbour Day, we proudly shop locally, and we are vocal about the values we hold dear. We are learning ways of knowing, engaging, building relationships and moving toward equitable environments with Indigenous peoples. Our greatest strength in Calgary is that of the people who live, visit and dream of being here. This strategy aims to nurture personal resilience through our connections to each other, our equity-seeking communities, our environment and the services we enjoy that support our quality of life.





### **Pillar 3: The Future of Calgary’s Natural Infrastructure**

Our connection to our natural environment is deeply tied to our daily activities: during any season, we are acutely aware of the icy coldness dropping temperatures can bring, the warmth of a winter Chinook, the long dry and hot days of our summers. We bravely face these weather changes, none more great in recent memory than the perfect storm of snow in our mountains, our water-saturated earth, and a well placed rainstorm to the west. The flood of 2013 galvanized a city-wide response as rising waters forced the evacuation of thousands of people from more than 26 communities. This was not the first time Calgary faced flooding — in 1929 and 1932, both the Bow and Elbow Rivers breached their banks after heavy rain. We have learned from our past and are preparing for our future by learning the value of natural infrastructure and will be better at considering it as an asset when budgeting, planning and developing Calgary communities.



### **Pillar 4: Future Ready Infrastructure**

Cities globally struggle with balancing new infrastructure needs and operations and maintenance of existing community assets. Intentional investment in infrastructure will support our resilience to technological advances, shocking weather events and chronic aging of our assets.



### **Shared theme: A Future Focused Calgary**

These four pillars of the strategy are supported by outcomes of population wellness and performance change by government, business and institutions. The pillars are supported by a shared theme, A Future Focused Calgary, that includes the development of resilience tools to support our measurement and sustained resilience approach to planning and decision making.

Micheline Maylor

**“I’ll meet you at Edworthy Park and then we will hear the chickadees and the pine-boughs whisper.”**

### **Resilience in Action**

A key learning through the development of the strategy is that there are incredible examples of resilience activities already occurring in Calgary that support our community’s resilience. Resilience in Action stories in the strategy showcase great work already being championed in our community that support the strategy outcomes.

Being a vibrant, great city that is world revered, is the result of our community spirit, our hardworking ethic, our welcoming kindness and the natural beauty within and around our city. The rest of the world has been watching. In 2018, The Economist magazine ranked Calgary as the best city to live in North America, and the fourth best city in the world. Even with these strengths, Calgary will continue to face stresses and shocks as we strive to reach our vision of being a great place to make a living and a great place to make a life.

The Resilient Calgary strategy belongs to us all, and as we work together to implement the strategy, we will continue to identify new risks, support those with collective effort, and sustain our great city’s resilience into the future.



## RESILIENT CALGARY STRATEGY: AN OVERVIEW

To keep Calgary strong, we must be prepared for stresses and shocks. The Resilient Calgary strategy supports a vision of resilience for Calgary that considers events that weaken the people, natural environment, economy and urban systems of our city.

The strategy places Calgary's resilience challenges and opportunities into four over-arching pillars and one shared theme. From infrastructure and economy to environment and inclusion, we have taken a deep dive into these pillar areas and have identified 13 outcomes, 29 actions and more than 39 success measures that help shape our plan going forward. With the guidance of community, partners, our steering committee and diverse stakeholders, we state creative, bold and innovative actions to get us there.



### SHARED THEME: A Future Focused Calgary

All pillars use a future-focused lens when advancing resilience outcomes and actions.



#### PILLAR 1:

### The Future of Calgary's Economy

All community members are encouraged and able to participate in a diverse and strong economy.



#### PILLAR 2:

### Inclusive Futures

Institutions have trusted and informed relationships with Calgary's equity-seeking communities.



#### PILLAR 3:

### The Future of Calgary's Natural Infrastructure

Natural infrastructure assets are identified, protected, tracked, managed and used to inform investment and planning decisions.



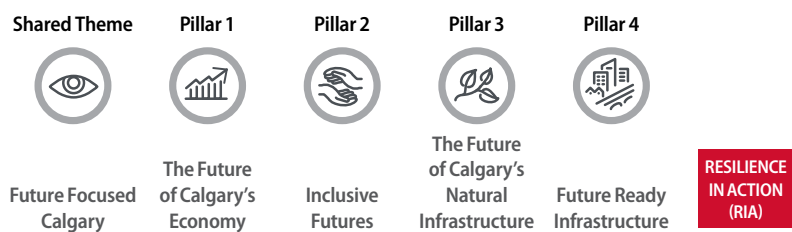
#### PILLAR 4:

### Future Ready Infrastructure

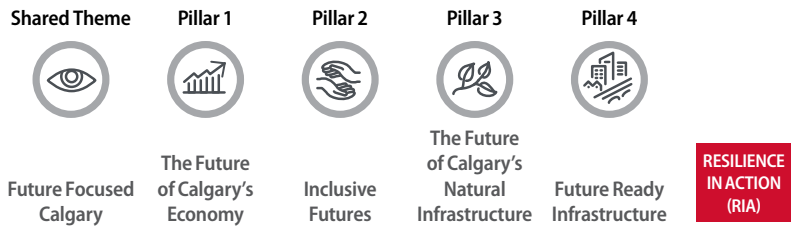
Calgarians are supported through strategic investment in future-focused and resilient infrastructure.

# CALGARY'S STRESSES, SHOCKS, CHALLENGES AND OPPORTUNITIES

Our past experiences must help inform future decisions. Calgary faces many challenges including chronic stresses (slow moving activities that weaken the fabric of a city over time) and acute shocks (sudden, sharp events or disasters that threaten a city). We investigated these stresses and shocks during our [Preliminary Resilience Assessment](#). Together as a community, we have assessed our risks and vulnerabilities, taken stock of our existing efforts to reduce these risks, and identified the priority areas for our continued efforts to build resilience. Embedded in each pillar of the Resilient Calgary strategy are outcomes that describe our resilience goals, actions that identify the work we will take on together, and Resilience in Action (RIA) stories that showcase some of the many Calgary community activities well underway. The table below ties together the key pieces of the strategy: our stresses and shocks, the strategy pillars, outcomes and actions, and illustrations of resilience champions at work.



Stresses, Shocks, Challenges and Opportunities	Outcomes	Outcomes	Outcomes	Outcomes	Outcomes	
Difficulty attracting business, venture capital, and talent		1A, 1B, 1D	2D	3A, 3C		RIA.2, RIA.4, RIA.5, RIA.9
Economy vulnerable to boom and bust cycles	S2	1A, 1B, 1D	2D			RIA.2, RIA.4, RIA.8
Address prolonged office space oversupply and mitigate tax impact on tax base		1A, 1B, 1D				RIA.4,
Increased unemployment		1A, 1B, 1C, 1D	2A, 2D			RIA.4, RIA.8, RIA.14
Business continuity efforts underway to strengthen resilience in business and non-profit sectors		1C				RIA.6, RIA.7
Unknown impacts of climate change	S1, S3			3A, 3B	4A, 4B	RIA.15, RIA.18
Managing urban water through flood and drought				3B, 3C	4B	RIA.18, RIA.21, RIA.23
Extreme weather incidents		1C		3B, 3C	4B	RIA.6, RIA.7, RIA.16, RIA.18, RIA.19, RIA.22
Capitalize on Biodiversity Action Program				3A, 3C		RIA.17, RIA.18, RIA.19
Capitalize on climate resilience & environmental well-being regulation				3A, 3C	4B	RIA.21
Increase our food security		1D		3B, 3C		RIA.14, RIA.20
Traditional funding models at risk for infrastructure needs, including operating, capital maintenance, and capital growth				3B, 3C	4A	RIA.3
Growing risk of cyber-attack and telecommunications breakdown	S1, S2	1C			4A	RIA.6
Insufficient/aging, appropriate infrastructure at the community level negatively impacts quality of life					4A	RIA.14



Stresses, Shocks, Challenges and Opportunities	Outcomes	Outcomes	Outcomes	Outcomes	Outcomes	
Living in a VUCA city (Volatile Uncertain Complex and Ambiguous)	S1	1A, 1B, 1C, 1D	2A, 2B, 2C, 2D	3B		RIA.1, RIA.9
Growing prominence of a regional governance model	S1			3C		RIA.3
Organizational effectiveness	S1, S2, S3		2A, 2C	3B	4A	RIA.3, RIA.6
Lack of innovation due to a risk-averse culture	S1, S2	1A, 1B, 1D	2A	3C	4A	RIA.9
Mental Health and Addiction						RIA.1
Poverty/access to housing and homelessness						RIA.8, RIA.11, RIA.14
Inequality and lack of social cohesion			2A, 2B, 2C, 2D			RIA.8, RIA.10, RIA.12, RIA.14
Calgary's commitment to housing						RIA.8, RIA.11 RIA.14
Leveraging social and intellectual capital of Calgary's diverse communities	S1	1A, 1B	2A, 2B, 2C, 2D			RIA.10, RIA.12, RIA.14
Inclusive leadership and decision-making	S1		2A, 2B, 2C	3B		RIA.12, RIA.13

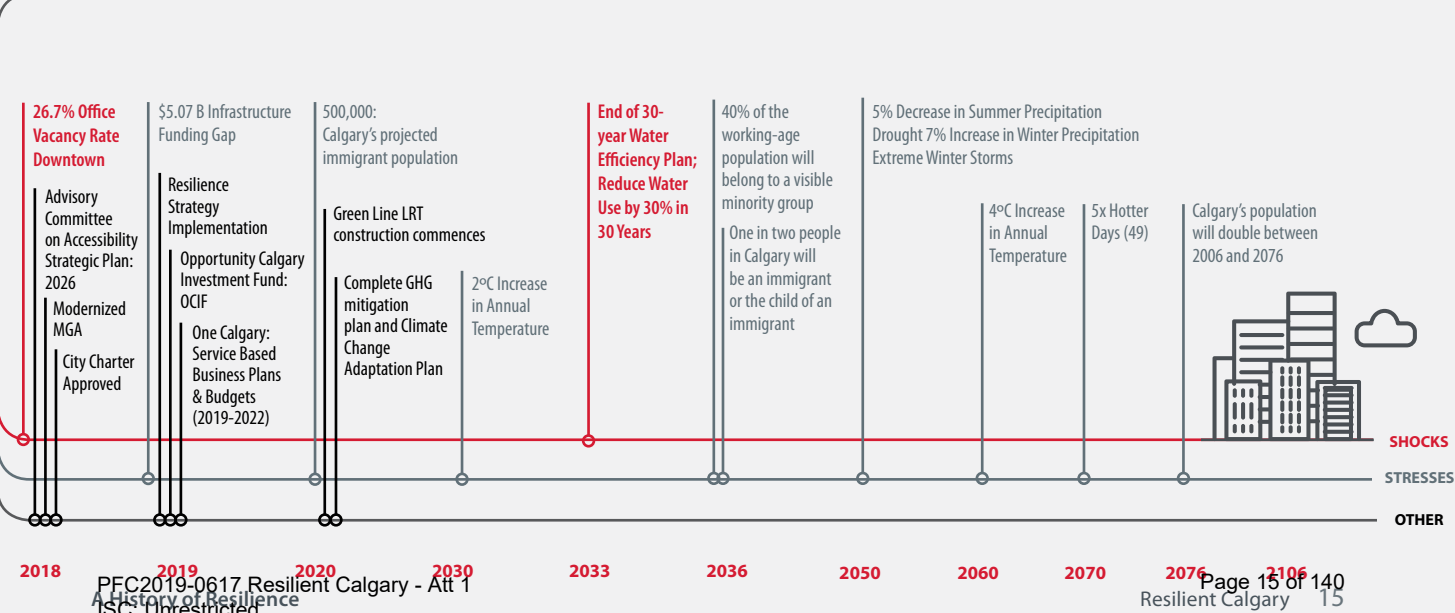
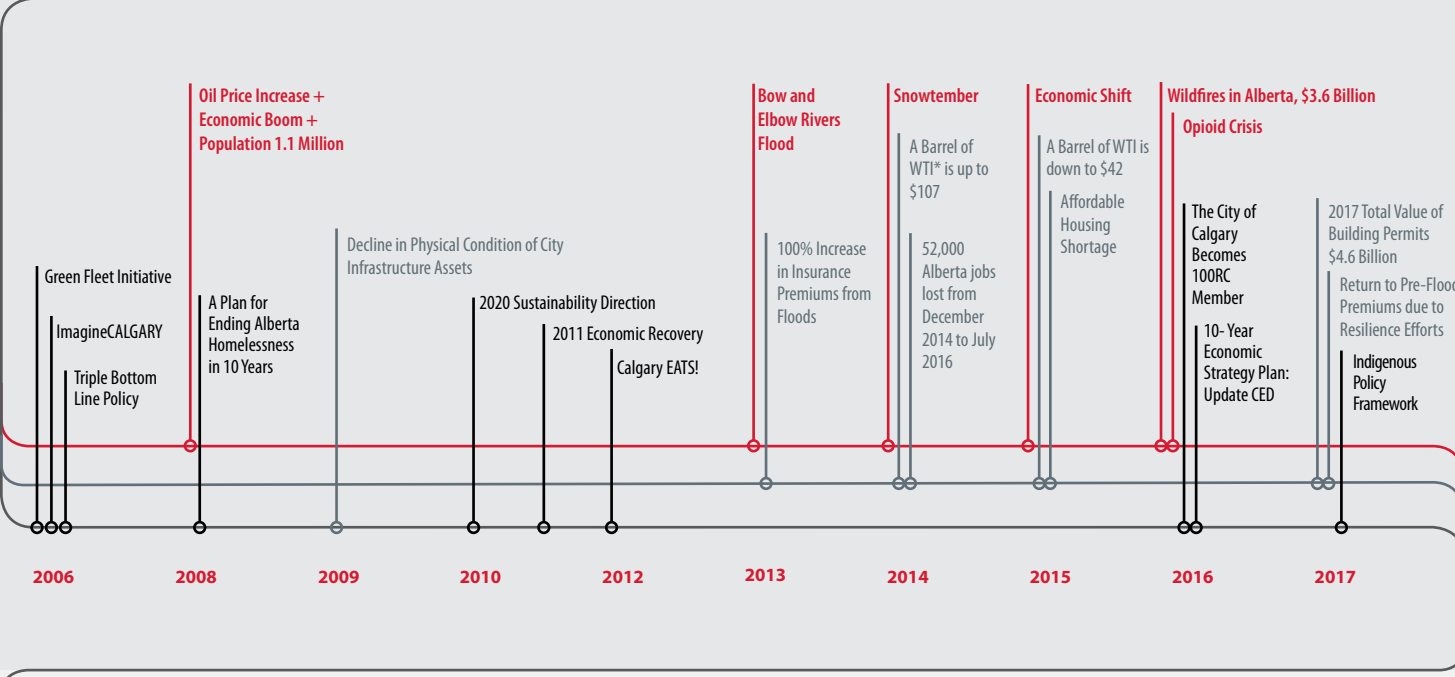
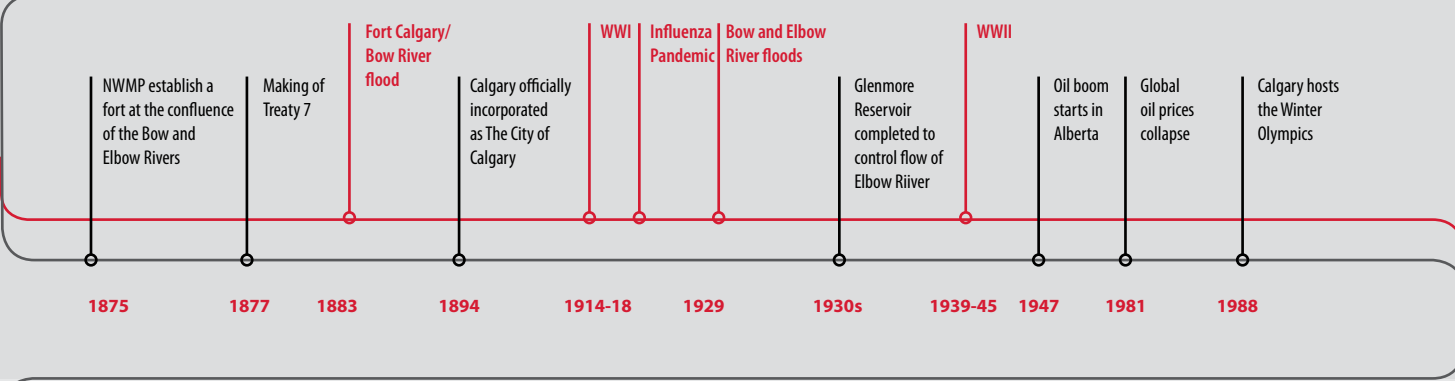
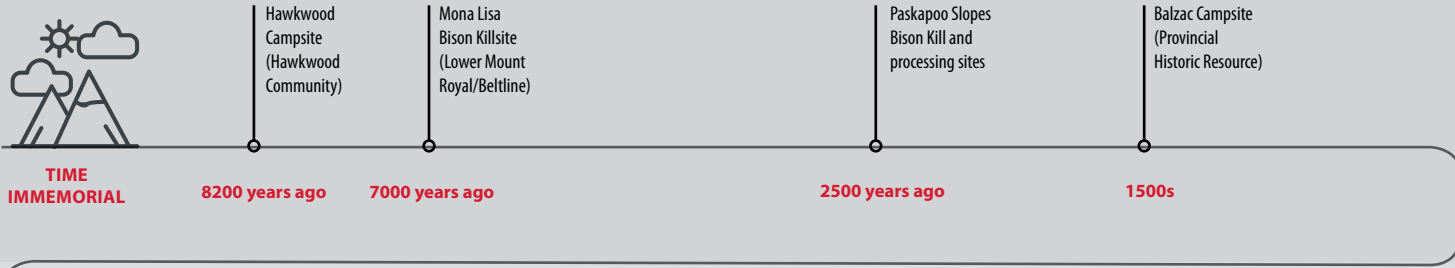


Helen Hajnoczky

**“I’ll meet you on the rocks at Prince’s Island Park, looking south toward the city, and then we’ll write poems and sketch drawings about the trees reflecting in the waves, and the memories that water will take back to the Bow River.”**



# A HISTORY OF RESILIENCE



## CALGARY CONTEXT

Calgary, Alberta, Canada is located where two Rocky Mountain-fed rivers, the Bow and the Elbow, meet.



- Calgary sits in the sunny eastern foothills of Canada's Rocky Mountains
- 848 square kilometres in size
- Sits at an elevation of 1,048 metres above sea level
- Calgary is among the top 5 most livable cities on earth
- 4th largest city in Canada
- Calgary has more volunteers per capita than any other city in the world

Sandi Somers

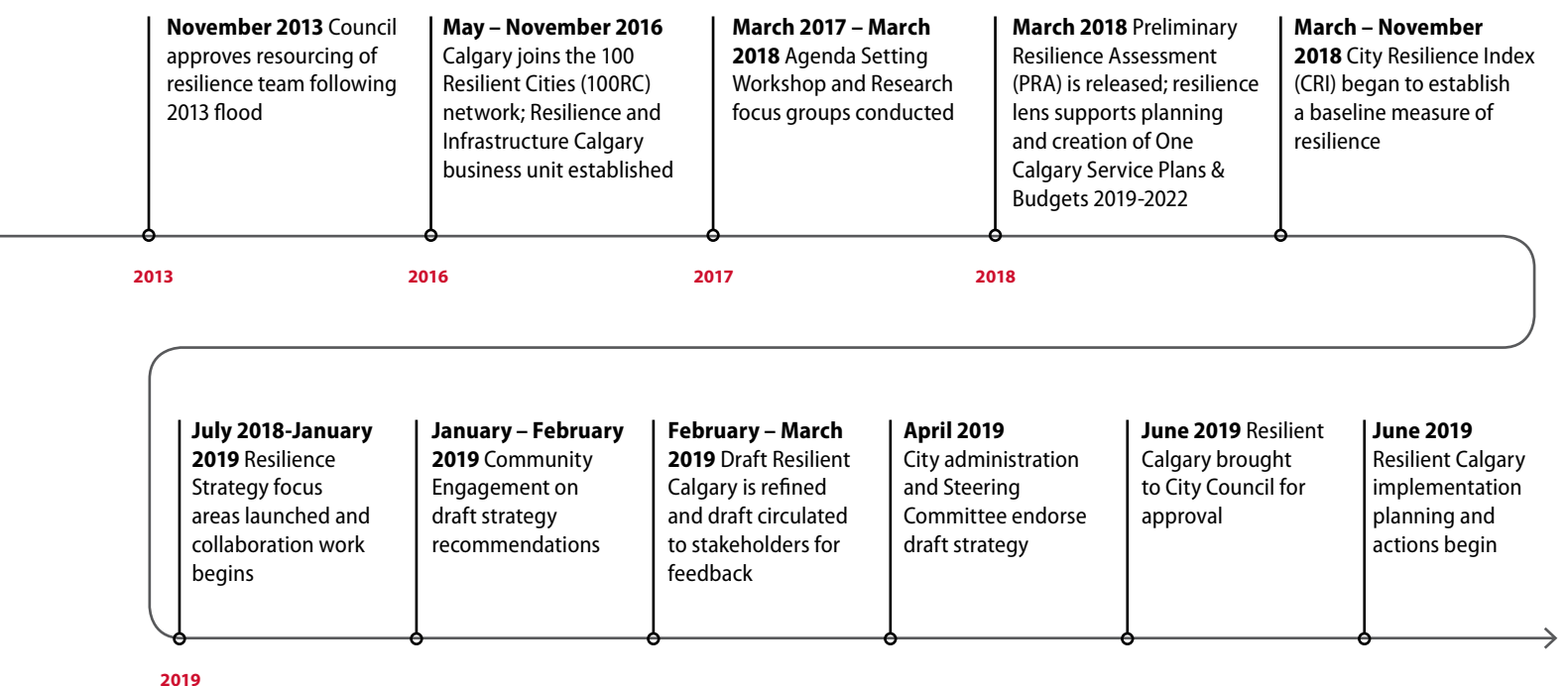
**"I'll meet you at the confluence and then we'll drink coffee and count the birds and cars."**



## OUR JOURNEY TOWARD A RESILIENT CALGARY



The process to develop the Resilient Calgary strategy has been a shared journey. We have gathered in workshops, engaged at open houses, captured ideas online and in focus group sessions, meetings and key stakeholder discussions. Face to face, steering committee members, colleagues and collaboration circle members have shared and planned together. The voices of many diverse stakeholders were heard including community partners, Indigenous groups, platform partners, subject matter experts and City of Calgary business units.



## SUPPORTING OUR JOURNEY

### We are Guided

#### A Letter from the Resilient Calgary Steering Committee

The members of the steering committee are honoured to be a part of the development of the Resilient Calgary strategy. We bring perspectives from many different backgrounds, with a variety of interests and working in an array of professions and businesses. Our conversations as a steering committee have helped elevate critical issues of importance in the strategy development, of our collective work, and more knowledge of our ever-changing world where we all face complex stresses and shocks.

Resilience should be the cornerstone of the future of our communities. The work that went into creating the strategy and the actions in this document demonstrate the value of resilience to help achieve a good quality of life in our city for all of its people. A resilient economy, natural infrastructure, and inclusive communities supported by sound infrastructure are key for the well-being of our people and help achieve our best quality of life.

Calgary is a strong community, and our goal has been to build on that foundation of strength. As a steering committee we feel that this Resilient Calgary strategy is an important step taken together to help future generations survive and thrive through the many stresses and shocks that Calgary will face. The different pillars, outcomes and actions in this strategy document create an opportunity for us to lift our collective awareness of stress, shocks, challenges and opportunities, place a lens on each other's good work, and leverage our collective effort to seek resilience value for Calgary.

We are grateful to be part of this journey, and we anticipate continuing to champion this work through its implementation to help ensure that our communities remain on this resilience path. It is our hope that the work initiated through Resilient Calgary will continue to be embedded in our plans, actions and efforts — supported by each other — so that we can continue being a community that is optimistic, future-focused and resilient.

#### Steering Committee and members

The Role of the ResilientYYC Steering Committee is to advise Calgary's Chief Resilience Officer, help identify resilience opportunities and challenges, identify and resolve issues and risks as well as be Calgary's resilience champions in the community. The ResilientYYC Steering Committee includes the following members:

- Brad Stevens, The City of Calgary, Chair
- Mark Bennet, Bow River Basin Council
- Derek Cook, Canadian Poverty Institute, Ambrose University
- Dr. Genevieve Fox, Blackfoot Confederacy Tribal Council
- Dr. Michelle Gagnon, The Alberta Family Wellness Initiative
- Dr. David Hogan, Age Friendly Steering Committee
- Penny Hume, Youth Central
- Umair Pervez, Global Shapers
- Dr. Susan Skone, University of Calgary
- Dr. David Strong, Alberta Health Services
- Karen Young, United Way of Calgary and Area



#### Richard Harrison

**“Let’s go to McHugh Bluff where we can see the whole city, and we’ll talk of our favourite places, and how we made it through the flood.”**

## We are Joined

### By partners, experts, community and thought leaders in Calgary

Calgary is enriched by a diversity of people and businesses, professional and technical experts, foundations, non-profits, social service providers and academic institutions — all of whom are committed to resilience. The creation of the Resilient Calgary strategy is the result of many thought leaders who dedicated their time, expertise and research to shape its direction. Experts and community leaders offered countless hours to attend stakeholder workshops, steering committees and discovery area collaboration circles. Together, we articulated Calgary’s resilience goals and recognized our potential for a brighter future. We wish to acknowledge the following:

Sam Warwick

**“I’ll meet you at the dog-friendly patio of La Boulangerie Café, where we will order lattes, and then walk our pups along the Elbow River and hike the sandy bluffs that overlook the snow-capped mountains.”**



#### Pillar 1: The Future of Calgary’s Economy

17th Ave Retail & Entertainment District
Alberta Innovates
ATB Financial
BILD Calgary Region
Bow Valley College
Calgary Chamber
Calgary Economic Development
Calgary Film Centre
Chinatown District Business Improvement Area (BIA)
Calgary Municipal Land Corporation (CMLC)
Calgary Downtown Association
Calgary Drop-In & Rehab Centre
Energy Disruptors
ENMAX
Federation of Calgary Communities
Government of Alberta
Kensington Business Improvement Area (BIA)
Manpower
Mount Royal University
Southern Alberta Institute of Technology (SAIT)
TELUS Spark
United Way of Calgary and Area
University of Calgary



#### Pillar 2: Inclusive Futures

Advisory Committee on Accessibility
Alberta Government
Alberta Health Services
Alberta Human Rights Commission
Alberta Urban Municipalities Association (AUMA)
Ambrose University
Blackfoot Confederacy Tribal Council
Bow Valley College
Calgary Bridge Foundation for Youth
Calgary Catholic Immigration Society
Calgary Foundation
Calgary Queer Arts Society
Carya
F.O.C.U.S. on Seniors
Federation of Calgary Communities
Llewellyn Law
Mount Royal University
Platinum Consulting Ltd.
Sinneave Family Foundation
Equity-seeking Community Members
United Nations Association of Canada – Calgary Chapter
United Way of Calgary and Area
University of Calgary
Vibrant Communities Calgary
YMCA Calgary



### Pillar 3: The Future of Calgary's Natural Infrastructure

AECOM
BILD Calgary
Alberta Health Services
University of Calgary
Alberta Government
Miistakis Institute
Alberta Land Institute
Innotech Alberta
Calgary Board of Education
reGenerate Design
Evergreen
Source 2 Source
Canadian Parks and Wilderness Society
Bow River Basin Council



### Pillar 4: Future Ready Infrastructure

AECOM
100 Resilient Cities – City Resilience Framework



### Shared Theme: A Future Focused Calgary

AECOM
Calgary Economic Development
Evergreen
Federation of Canadian Municipalities
United Way of Calgary and Area

An integrated team of City services works together as one to help keep our city resilient.

Assessment	Infrastructure Calgary Program Management Office
Calgary City Council	Infrastructure Calgary Steering Committee
Calgary Approvals Coordination	Infrastructure Support
Calgary Fire	Intergovernmental & Corporate Strategy
Calgary Neighbourhoods	Law
Calgary Growth Strategies	Mayor's Office
Calgary Police Service	Parks
Chief Resilience Officer and Deputy City Manager	Procurement and Supply
City Planning and Policy	Recreation
Corporate Analytics & Innovation	Real Estate & Development Services
Corporate Economics	Resilience and Infrastructure Calgary
Customer Service & Communications	Roads
Emergency Management & Business Continuity (CEMA)	Supply Management
Environmental & Safety Management	Transportation
Facility Management	Transportation Planning
Financial Support	Urban Strategies
Green Line Project	Water Resources
Human Resources	Water Services
Information Technology	

Weyman Chan

**"I'll meet you at Queen's Park Cemetery at the offerings altar in the Chinese section, where we will write poems and tributes to the hard-won struggles of our ancestors, whose stories cannot be forgotten."**



## We Are Not Alone

### Why Urban Resilience Matters

The world is rapidly changing. As urbanization and urban populations keep rising, cities will be increasingly exposed to different challenges and risks. Climate change, increase in migration, aging and diverse populations, infrastructure demands, the transformation of public management and social inequality are all challenges to which cities must be able to respond.

#### What makes a city vulnerable?

Cities are complex systems. Their cultural, social and economic wealth is based largely on the extensive network of connections between people, institutions, stakeholders, infrastructure and ecosystems. If the risks and extent of the consequences are not known, complex urban systems may become vulnerable to stresses and shocks. It's important to identify the outside factors that contribute to the transformation of the environment, just as it's important to identify the potential shocks and stresses of the city.

#### Chronic Stresses and Acute Shocks

Cities are the primary centres of economic activity, social connection, opportunity and innovation. A city's ability to function is often weakened by acute shock (financial crisis, extreme weather, cyberattack, etc.) and chronic stress (economic uncertainty, climate change, poverty, increased unemployment, etc.). Unexpected shock or stress situations that accumulate may lead to social unrest, the collapse of infrastructure or even the economic decline of a city. The challenge of shock and stress situations may, however, create interest and opportunities to build resilience.

#### What is Urban Resilience?

Urban resilience is the capacity of individuals, institutions, businesses and systems within a city to adapt, survive and thrive no matter what kind of chronic stresses and acute shocks they experience.

#### Who else is focused on Urban Resilience?

100 Resilient Cities (100RC), is a network established in 2013 to help cities around the world become more resilient to the physical, social and economic challenges that are a growing part of the 21st century. 100RC supports the adoption and incorporation of a view of resilience that includes not just the shocks but

also the stresses that weaken the fabric of a city on a day-to-day or cyclical basis. By addressing both the shocks and the stresses, a city becomes more able to respond to adverse events, and is overall better able to deliver basic functions in both good times and bad, to all populations.

#### Four main pathways

Cities in the 100RC network are provided with the resources necessary to develop a roadmap to resilience along four main pathways:

1. Financial and logistical guidance for establishing an innovative new position in city government, a Chief Resilience Officer, who will lead the city's resilience efforts.
2. Expert support for development of a robust resilience strategy.
3. Access to solutions, service providers and partners from the private, public and NGO sectors who can help them develop and implement their resilience strategies.
4. Membership in a global network of member cities who can learn from and help each other.

Through these actions, 100RC helped individual cities become more resilient, and has facilitated the building of a global practice of resilience among governments, NGOs, the private sector and individual citizens.

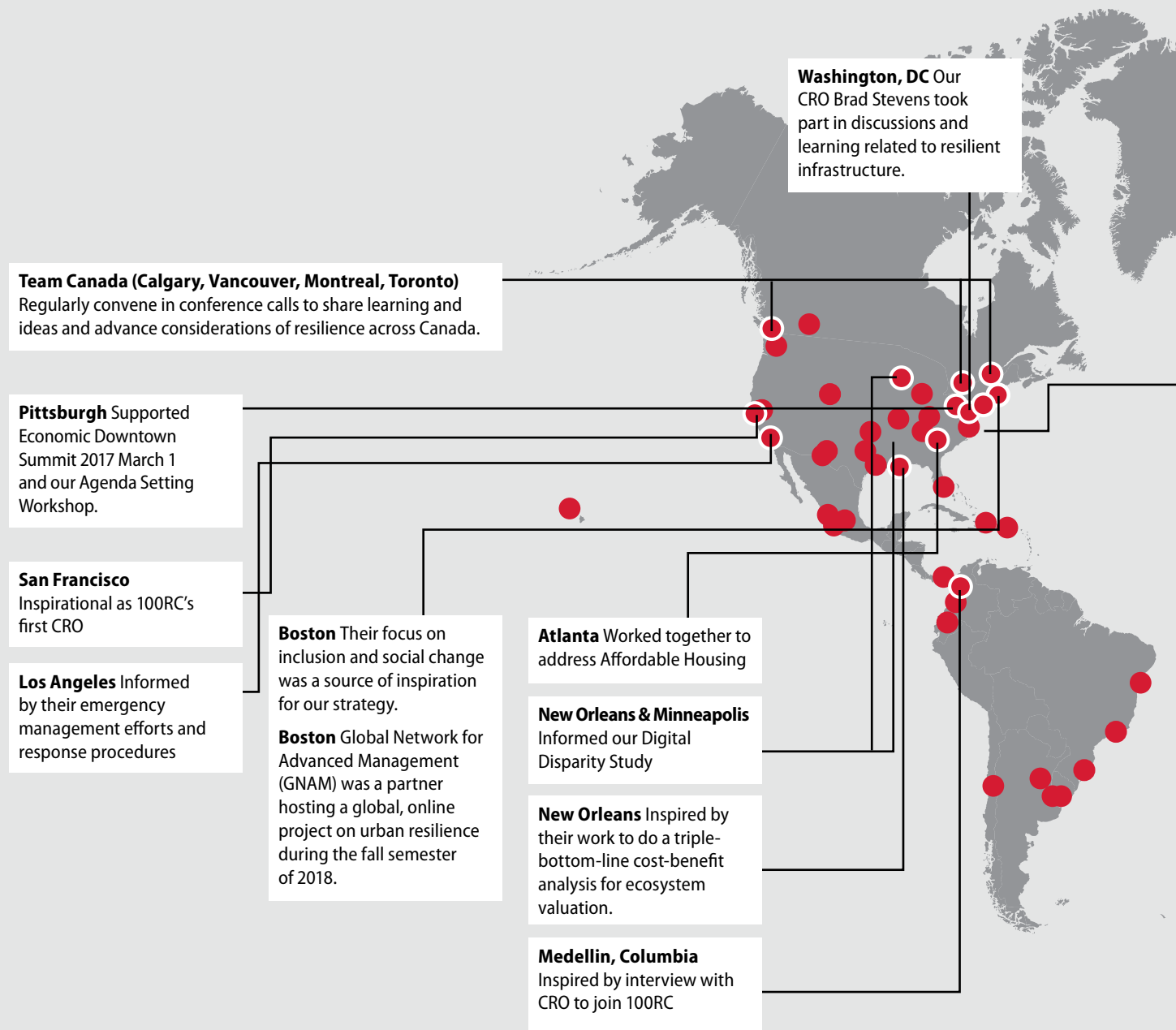
#### Calgary invited to join

The City of Calgary was among the third and final cohort of cities invited by 100RC to embark on an exciting opportunity to examine city resilience and develop a strategy that is customized according to individualized needs and capacity. Calgary has participated in the 100RC Network membership from the onset of our Agenda Setting Workshop in 2017, and we will remain a member until the end of July, 2019 when the 100 Resilient Cities program will formally end. The connections made through the international membership network, the support of a strategy partner and platform partners, and the coaching from resilience minded subject matter experts was an important contributor to Calgary's resilience strategy development.

## We are Inspired

### Global Resilience Efforts

Calgary has learned from and connected with many global cities as a result of our membership in the 100 Resilient Cities network. This connection to other Chief Resilience Officers, network members, partners and resilience champions has inspired and informed the development of our strategy.

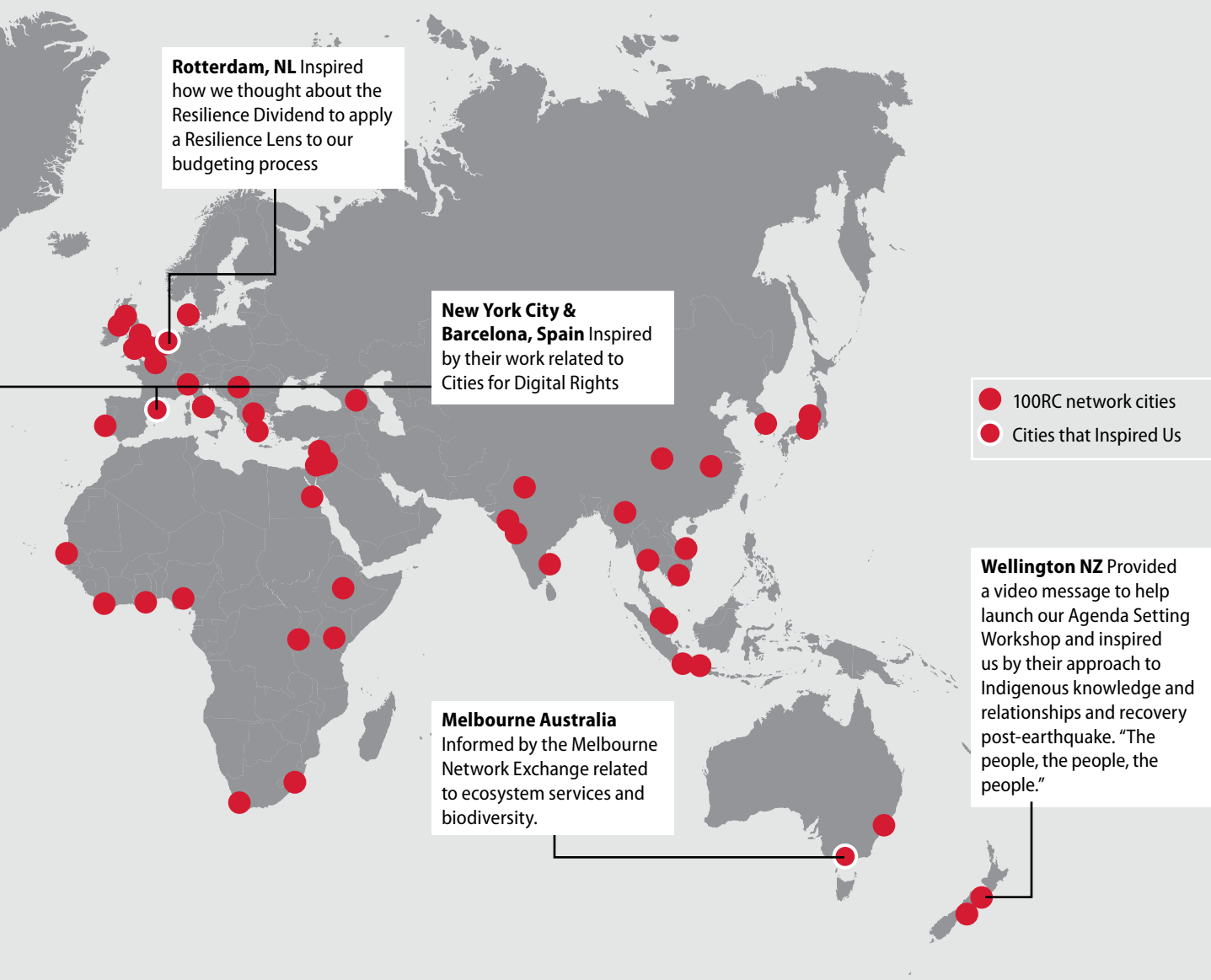


**Team Canada:** Along with Montreal, Toronto and Vancouver, Calgary is one of four Canadian cities in the 100RC network. The four member cities participate in monthly conference calls. The purpose of convening is to bring together the four Chief Resilience Officers (CROs) and their teams, as well as resilience practitioners from Canada and elsewhere to:

- a) Advance and illuminate the state of urban resilience in Canada. The four Canadian member cities of the 100RC network each have unique challenges and opportunities — the diversity of urban centres and metropolitan areas is vast in Canada. Each of the CROs are leading their cities through a transformational process to institutionalize resilience in their operations and partnerships.
- b) Share emerging learnings, best practices and innovations. Since cities are different, they often also adapt to change and innovate in different ways — but solutions and ideas can be shared to build regional or national economies of scale.

c) Connect with national and international practitioners and thinkers to advance urban resilience in Canada. Municipal governments alone cannot build resilience in communities — it takes great partnerships, new technologies, resources and leadership. Leading experts have presented on a wide range of topics including urban modelling, strategic foresight, risk profiling tools, Future of Work in Canada, Truth & Reconciliation and more.

d) Initiate conception of a national Urban Resilience Agenda for Canada. A significant proportion of the Canadian population is represented by cities building their resilience. Opportunities are being explored for national engagement and national impact, cross-city solutions, and new philanthropic investment in a pan-Canada initiative.



## A letter from the 100 Resilient Cities

At 100 Resilient Cities, we have worked with cities across the globe on their journeys to becoming more resilient. The release of Resilient Calgary marks an important milestone on Calgary's path. With its high capacity resilience team and ambitious political leadership, The City of Calgary has made bold moves to change the way it does business to ensure that the community will be more resilient over the long-term. In doing so, Calgary will be ready to face its most pressing stresses and shocks while prioritizing the needs of its communities and residents.

Calgary, the fourth largest city in Canada, began its resilience journey long before it joined the 100RC network in 2016. Home to many Indigenous communities, Calgary is proud of its history, growing diversity, and rich natural environment. Calgary's story, however, is also one of loss and rebuilding. Through the devastating floods of 2013 and the hard but steady recovery from an economic recession that began in 2015, the City of Calgary has been steadfast, reflecting on the impacts of these events and taking action to withstand both acute shocks and slowly emerging stresses, while bringing opportunity and prosperity to its community.

To this end, 100RC is humbled to be a partner in Calgary's resilience journey. Calgary has been a leader in the global resilience movement; from sharing best practices and lessons learned with other cities at the 2018 Building Resilient Infrastructure Workshop in Washington D.C. to working with our Platform Partners, such as Earth Economics, who partnered with Calgary to develop an innovative natural assets decision-making tool. We are excited to see our partnership culminate, under the leadership of Chief Resilience Officer Brad Stevens and the Calgary resilience team, with the release of Resilient Calgary.

This strategy is a comprehensive action plan to institutionalize resilience as an anchor for city decision-making and long-term planning. The Resilient Calgary strategy is the result of the made-in-Calgary "3L" approach: an intentional effort to place a lens on the most pressing resilience risks and issues, to lift awareness of the good work already underway and to identify areas to fortify, and to leverage the collective effort of many to reach shared resilience goals. This approach positions The City and its community to make decisions and investments that are risk-aware, inclusive and integrated, while producing economic, social, and physical benefits for all.

Calgary is now poised to be a global example of how cities can leverage resilience strategies to embed the practice of resilience and catalyze action through implementation. On behalf of 100RC, I would like to congratulate Mayor Nenshi and Calgary City Council, the City of Calgary, and its residents and stakeholders on the release of Resilient Calgary and share our excitement for your continued journey toward achieving the vision set forth in this very important strategy.



Michael Berkowitz  
President, 100 Resilient Cities





## SUPPORTING OUR CITY VISION

# CALGARY: A great place to make a living, a great place to make a life.

For thousands of years, people have met at the confluence of two vital rivers to imagine and realize their futures. Together, we have built a city of energy, born of a powerful convergence of people, ideas and place.

Together, we continue to imagine a Calgary and a community where:

**We are each connected to one another.**

Our diverse skills and heritage interweave to create a resilient communal fabric, while our collective spirit generates opportunity, prosperity and choice for all of us.

**We are each connected to our places.**

We treasure and protect our natural environment. Magnificent mountain vistas and boundless prairie skies inspire each of us to build spaces worthy of our surroundings.

**We are each connected to our communities.**

Whether social, cultural or physical, these communities are mixed, safe and just. They welcome meaningful participation from everyone, and people move freely between them.

**We are each connected beyond our boundaries.**

We understand our impact upon and responsibility to others. Our talent and caring, combined with a truly Canadian sense of citizenship, make positive change across Alberta, throughout Canada and around the world.

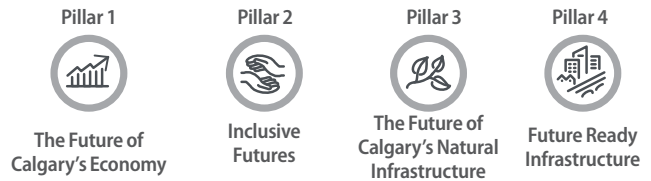
# We can make it happen!

– imagineCALGARY

**imagineCALGARY** is The City of Calgary's 100-year vision, launched in 2005. More than 18,000 Calgarians added their voice to imagineCALGARY, to produce a long-range urban sustainability plan for the community.



# ALIGNMENT TO COUNCIL AND/OR COMMUNITY APPROVED PLANS, POLICIES AND FRAMEWORKS



	Pillar 1	Pillar 2	Pillar 3	Pillar 4
100 Resilient Cities Framework	●	●	●	●
2013 Riparian Strategy			●	
Calgary 2020			●	
Calgary Corporate Accessibility Policy		●		●
Calgary Local Immigration Partnership (CLIP)		●		
Calgary Transportation Plan	●		●	●
Capital Infrastructure Investment Principles	●	●	●	●
Centre City Plan Refresh	●	●	●	●
Centre City Refresh	●	●	●	●
Citizen Priorities	●	●	●	●
City Charter	●	●	●	●
City of Calgary's Indigenous Policy		●	●	●
Climate Resilience Strategy & Plans			●	●
Council Directives	●	●	●	●
Economic Development Strategy	●	●		●
Enough For All Strategy	●	●		●
Environmental Policy			●	●
Gender Equity and Diversity Strategy	●	●		
Human Resources' Diversity and Inclusion in the Workplace	●	●		
imagineCalgary	●	●	●	●
imagineParks			●	
Industrial Land Strategy	●		●	●
Integrated Pest Management			●	
Integrated Watershed Planning Strategic Framework			●	●
Living Lab Strategy	●			
Municipal Development Plan	●	●	●	●
Multicultural Marketing Strategy		●		
One Calgary	●	●	●	●
Quality of Life Alignment	●	●	●	●
Riparian Action Program			●	
Seniors Age Friendly Strategy		●		
Smart City Strategy	●			●
Social Well-being Principles		●	●	
Source Water Protection Plan			●	●
Triple Bottom Line Policy	●	●	●	●
UN Sustainability Goal	●	●	●	●
United Way of Calgary and Area Strategic Plan	●	●		
Urban Forestry			●	

## CHARACTERISTICS OF RESILIENT SYSTEMS

Resilient systems possess seven qualities that enable them to withstand, respond to and adapt more readily to shocks and stress by taking appropriate or prompt action. A resilient system is: **reflective, resourceful, inclusive, integrated, robust, redundant, flexible.**



### Reflective

Using past experiences to inform future decisions.



### Integrated

Bring together a range of distinct systems and institutions.



### Inclusive

Wide-ranging consultation and sharing in decision-making processes.



### Redundant

Spare capacity purposively created to accommodate disruption.



### Robust

Well-conceived, constructed and managed systems.



### Resourceful

Recognizing alternative ways to use resources.



### Flexible

Willingness, ability to adopt alternative strategies in response to changing circumstances.



Pam Rocker

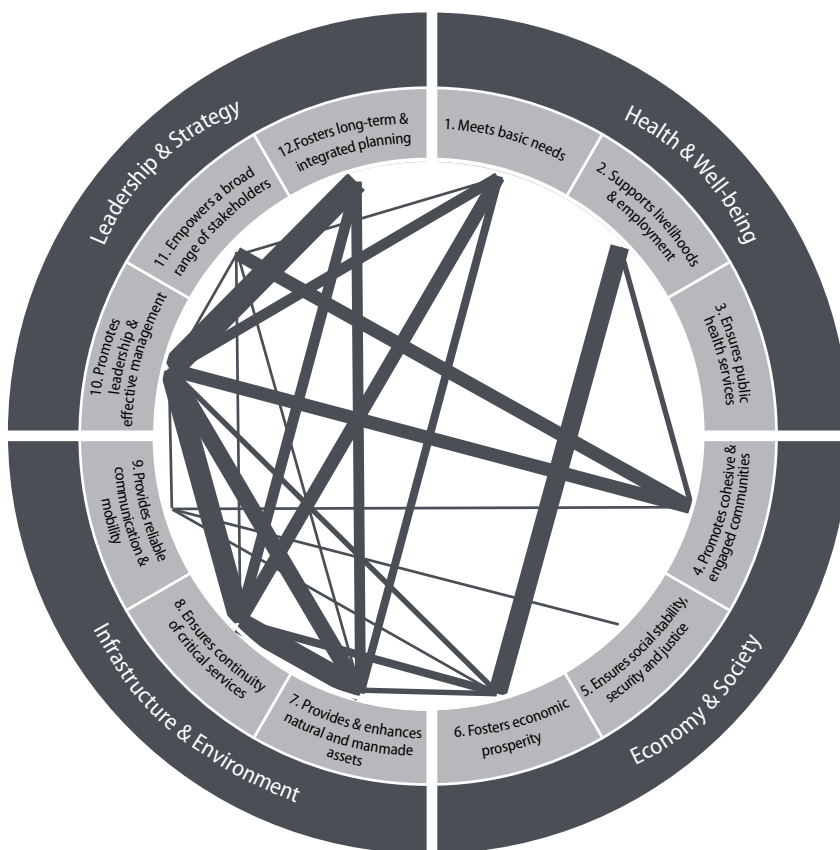
**“I’ll meet you in the middle of the bridge to St. Patrick’s island. We’ll fall in love as we navigate nature and ice cream, linking fingers as you point out the egrets staking claims atop steel structures, and we wander our way into our own nest.”**

# THE CITY RESILIENCE FRAMEWORK

The City Resilience Framework (CRF) is a lens used to help understand the complexity of cities and it identifies a series of drivers that have been proven to be necessary for a city's resilience. The CRF describes the essential systems of a city in terms of four dimensions: Health & Well-being, Economy & Society, Infrastructure & Environment, and Leadership & Strategy. Each dimension contains three "drivers," which reflect the actions cities can take to improve their resilience.

Resilient Calgary's actions align to all dimensions and nearly all drivers, with a focus on: fostering economic prosperity, supporting livelihoods and employment, meeting basic needs, fostering long-term and integrated planning, promoting leadership & effective management, promoting cohesive and engaged communities, empowering a broad range of stakeholders, ensuring continuity of critical services and maintaining and enhancing protective natural and man-made assets (infrastructure).

Mapping primary and secondary alignment of Resilient Calgary actions to the CRF drivers and subdrivers depicts the interdependencies of actions to one another.




Resilient Calgary's initiatives mapped against the 100 Resilient Cities City Resilience Framework






Micheline Maylor

**"I'll meet you at the city's edge, 16th Ave west past COP, and then we'll flutter like coyote, like buffalo, like chickadee, like we were meant to, under the Alberta-Blue sky."**

# HOW TO READ THE STRATEGY Action template structure

<b>A</b>	<b>Action 5A.1 Deliver a Calgary Foresight Planning Method</b>	
<b>B</b>		
<b>C</b>	 <b>Why Is This Important?</b> <p>For our cities to be leaders in the future, we need to make decisions now about where we want to go and how we are planning to get there. To accomplish this, City services need the tools and resources to innovate for cities to survive and thrive in an ever-changing world. Service owners will increasingly need to integrate long-term evidence into their decision-making processes.</p> <p><b>What Will We Do?</b> To support this process, a coordinated set of foresight activities and partnerships will be developed for City service owners to think about the future of Calgary and to inform their actions going forward.</p> <p><b>How Will We Do This?</b> We will work with experts who have set up strategic foresight units in different orders of governments to develop a service model that is relevant for The City of Calgary.</p>	 <b>Who's Involved?</b> <p><b>Proposed Lead Organization</b> TBD</p> <p><b>Proposed Partner Organizations</b> TBD</p> <p><b>With What Proposed Resources?</b> TBD</p> <p><b>When Will We Start?</b> Q2 2019</p> <p><b>How Long Will It Take?</b> Ongoing</p>
<b>H</b>	 <b>Resilience Value</b> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Decision-making and leadership</li> <li>• Multi-stakeholder engagement</li> <li>• Strategies and plans</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul>	<b>Benefits To Other Pillars</b> 
<b>J</b>	<b>Success Measure:</b> <ul style="list-style-type: none"> <li>• Services use futures-thinking to inform their decision-making</li> </ul>	

**K** *“Ut laboudid maxim fugit, nonemque cus volupta teculpa riorum et plandipsa quae nobis aut apitatur aspacia vitatus debit omnieni hiciam et labor seque voloraera ilitam inciandisit velestis a nimus et laut quo et moste sit que ratusdae volenditint.”*  
– Jane Doe, Citizen

- A** Unique number for the action
- B** Unique name for the action
- C** Identifies the **LENS**  placed on the resilience issue:
  - Why it is important to focus on this action
  - What we intend to do
  - The approach we will take
- D** Identifies the proposed leads spearheading the action. We will **LIFT**  our awareness of each other’s efforts to build resilience.
- E** Identifies the proposed resources that will be used to move the action forward.
- F** Identifies the anticipated date that the work on the action will commence.
- G** Identifies the anticipated duration of the work.
- H** Identifies how we will **LEVERAGE**  our collective action to gain the greatest resilience value possible and the City Resilience Framework (CRF) dimensions are identified.
- I** Identifies the other pillars within the strategy that the action will create co-benefits for.
- J** Identifies how the action may be measured to show its success and to help determine if anyone is better off. Measures provided in this document are subject to change and/or evolve.
- K** Quotes collected from our resilience journey that reflect our communities’ interest in this resilience work.

# SHARED



## SHARED THEME



# A Future-Focused Calgary

## GOAL

All pillars use a future-focused lens when advancing resilience outcomes and actions.



## Overview

Globally, cities are evolving with a future that is increasingly volatile, uncertain, complex and ambiguous (VUCA). If we want Calgary to have a resilient and prosperous future, we will benefit from better tools to engage with and consider numerous complex choices.

The resilience of a city improves when thoughtful, practical and creative tools are used to support our decision-making capabilities. It involves work that will: reveal novel ideas, challenge existing assumptions about the future, and explore the interactions between future trends and the forces driving change.

By adapting, engaging and innovating, Calgary can lead into the future. It will attract employment, stimulate local economies and create future sustainability and inclusion.

This shared theme details three specific actions our future-focused city can undertake:

**S.1**

**Deliver a Calgary  
Foresight Planning Method**

**S.2**

**Use a Resilience  
Dividend Tool**

**S.2**

**Review the  
Triple Bottom  
Line Policy**

This shared theme reflects the needs that have emerged across all of the pillars and the tools here will support resilience decision-making throughout all of the actions listed in the strategy.

**“Designing the future shape of the city can be a discipline practiced by many, rather than an art mastered by few.”**

– John Goddard, Emeritus Professor of Regional Development Studies, Newcastle University



Mental health and addiction issues affect all Calgarians. Recent increases in overdose deaths from opioid use in particular have led to an increased sense of urgency to address issues of mental health and addiction in the community. Deaths involving illicit fentanyl have increased dramatically in Calgary over the past several years:

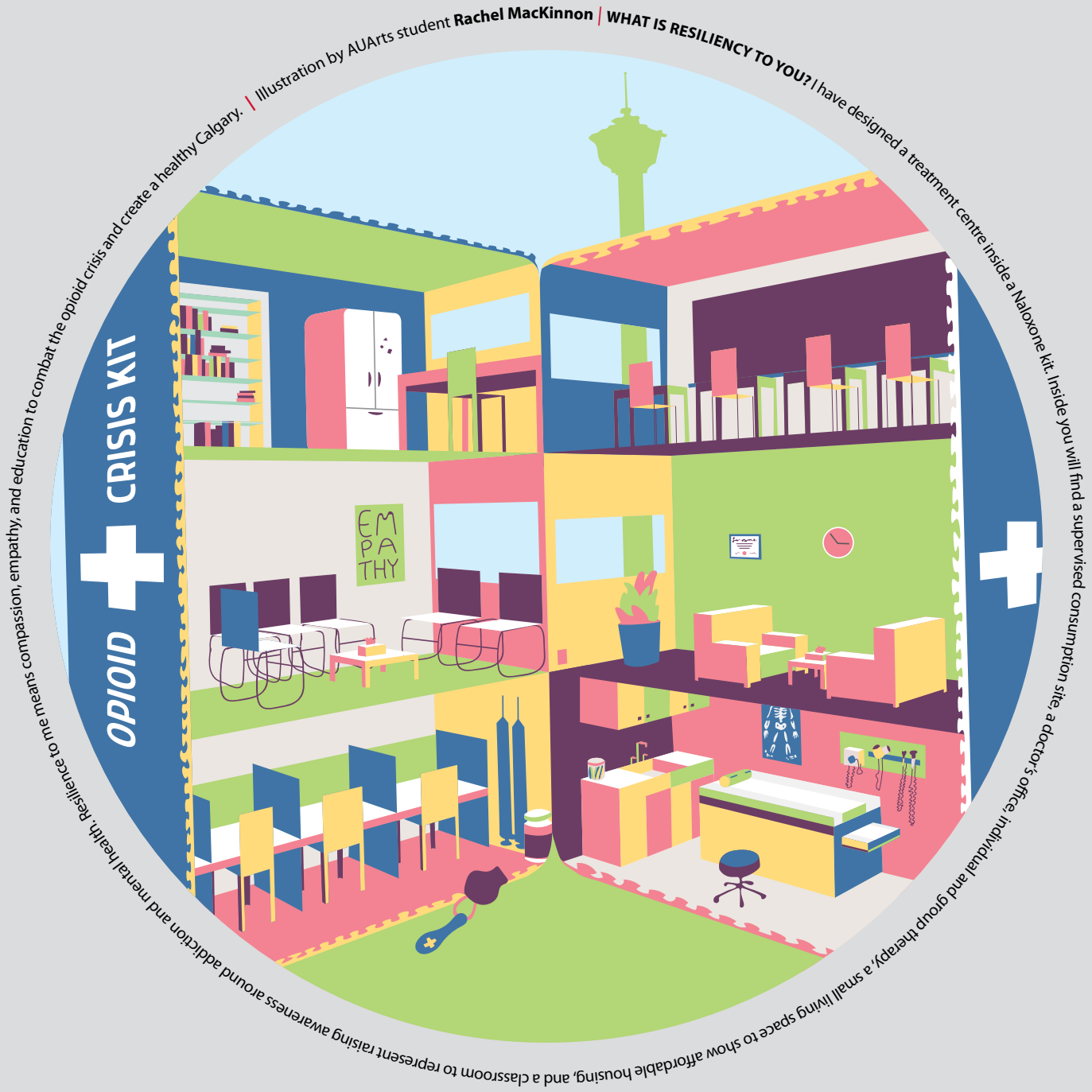
- An average of four Calgarians die every week from a suspected overdose.
- Calgary has the highest rate of deaths due to overdose in our province.
- Overdose deaths have happened in every Calgary community.

In response to increased concern with issues of mental health and addiction in the community, Calgary City Council passed the Community Action on Mental Health and Addiction in July 2018 and earmarked \$25 million for the implementation of the strategy and related initiatives over a five-year period (2019-2023). In 2019, the first \$3 million in one-time funding was granted to 19 non-profit organizations offering programs aimed at promotion, early intervention and targeted intervention as it relates to mental health and addiction.

The City of Calgary has been selected as one of 10 international cities to participate in the Bloomberg Harvard City Leadership Initiative for the 2018-2019 year, and the development of the Community Mental Health and Addiction Strategy has been chosen as the focus of Calgary's involvement. The program aims to strengthen cross-boundary collaboration through an intensive program to develop collaboration among key stakeholders, and ongoing team coaching sessions. Through membership in the program, Calgary has access to Harvard faculty members as resources to support effective collaboration and strategy development.

The City is currently working with key stakeholders to establish a governance framework and engage further with stakeholders and the community on issues of mental health and addiction in Calgary. Next steps include identifying initial policy directions, strategic actions, targets and measures for a Community Mental Health and Addiction Strategy.





## Deliver a Calgary Foresight Planning Method



### Why Is This Important?

For our cities to be leaders in the future, we need to make decisions now about where we want to go and how we plan to get there. To accomplish this, City services need future-focused information, tools and resources to innovate for cities to survive and thrive in an ever-changing world. Service owners will increasingly need to integrate long-term evidence into their decision-making processes.

#### What Will We Do?

To support this process, a coordinated set of foresight activities and partnerships will be developed for City service owners to think about the future of Calgary and to inform their actions forward.

#### How Will We Do This?

We will work with experts who have set up strategic foresight units in different orders of governments to develop a service model that is relevant for The City of Calgary.



### Who's Involved?

**Proposed Lead Organization**  
The City of Calgary

**Proposed Partner Organizations**  
Various community partners and City services

#### With What Proposed Resources?

TBD

#### When Will We Start?

Q2 2019

#### How Long Will It Take?

Ongoing



### Resilience Value

#### Leadership & Strategy

- Decision-making and leadership
- Multi-stakeholder engagement
- Strategies and plans

#### Economy & Society

- Community participation

### Benefit to Other Pillars and Shared Theme



### Success Measure:

- Services use futures-thinking to inform their decision-making.



## Use a Resilience Dividend Tool



### Why Is This Important?

A Resilience Dividend Tool can guide investment prioritization by quantifying the expected impacts from opportunities that make our City more resilient. This project may have cross-stakeholder benefits that are hard to compare. A valuation of expected benefits helps make decision-making easier.

In late 2017, Calgary was one of 10 cities in the 100 Resilient Cities (100RC) network selected to pilot a second wave of the City Resilience Index (CRI). The CRI is a diagnostic self-assessment tool developed by consulting firm Arup to conduct a comprehensive measurement of cities' resilience, based on a set list of indicators. The CRI aligns with the City Resilience Framework (CRF), a tool that was central to the development of Calgary's resilience strategy.

Throughout 2018, Calgary coordinated with internal and external stakeholders to pilot the CRI. Stakeholders included representatives from City of Calgary business units, Civic Partners, other levels of government, non-profit organizations, the private sector and energy utilities. The process proved beneficial in socializing Calgary's resilience efforts, and the data collected allowed Calgary to produce a resilience profile, revealing the city's strengths and weaknesses. This provides a baseline against which future progress can be measured. To date, Calgary is the first city in Canada to complete the CRI assessment.

#### What Will We Do?

100RC has begun exploring Resilience Dividend Models. We hope to operationalize this work following the learnings from their process.

#### How Will We Do This?

We will build from lessons learned and reference materials to develop a Resilience Dividend tool. This tool may be used to prioritize opportunities or estimate resilience potential. As an example, if applied to vertical farming scenario, that could include measuring the impact on food security, low carbon investment, skill development, inclusion of New Canadians in the workforce and the strengthening of food security and our innovation ecosystem.



### Who's Involved?

**Proposed Lead Organization**  
The City of Calgary: Resilience and Infrastructure Calgary

**Proposed Partner Organizations**  
Calgary Economic Development

Corporate Economics Office  
The City of Calgary:

Service Owners  
Collaboration Circle Partners  
Consultants

#### With What Proposed Resources?

TBD

#### When Will We Start?

Q1 2019

#### How Long Will It Take?

10 months



### Resilience Value

#### Leadership & Strategy

- Decision-making and leadership
- Multi-stakeholder engagement
- Strategies and plans
- Capacity and coordination

### Benefit to Other Pillars and Shared Theme



#### Success Measure:

- Develop a Resilience Dividend Tool to help assess and evaluate City services.



The community area known as East Village was formerly one of Calgary's most underdeveloped districts and its reputation as such left it unable to attract private investment. In response to this, the Calgary Municipal Land Corporation (CMLC) was formed in 2007. Its mandate was to transform the Rivers District starting with East Village into a vibrant, mixed-use, creative city neighbourhood. Since that time, several large investments in the area have been made, including building the RiverWalk, revitalizing St. Patrick's Island and constructing the recently completed and globally renowned new Central Library.

Twelve years later East Village is now a cultural hub, bringing Calgarians together for concerts, markets, restaurants and culture. The village is now a jewel of the core, home to more than 1,200 new condos and over 3,500 residents, a variety of retail options and restored heritage buildings.








Completed in 2018 and providing 240,000 sq. ft. of functional, flexible and beautifully designed space, the new Central Library hosts a physical collection of 450,000 books, 30 free community meeting areas, a tech training centre, a performance hall, café, outdoor plazas, a children's library, dedicated spaces for teens, and recording studios. Featured in the New York Times' "52 Places to Travel" in 2019, the Central Library received more than half a million visitors in the first three months (CMLC, 2018).

The library also introduced Indigenous Placemaking, a welcoming environment where Indigenous

people can see their culture reflected and visitors can learn about the original inhabitants of the land. More Indigenous language resources, and programming that preserves Indigenous culture and heritage will be available at the library with their Indigenous Languages Resource Centre. This project is launching at the same time the United Nations declared 2019 as the Year of Indigenous Languages.

In 2018, City Council adopted "Calgary in the New Economy", the economic strategy for Calgary. The strategy identified four key areas of focus (Talent, Innovation, Place and Business Environment) targeted at turning the City's vision for the future economy into reality. The overarching goal of the Place focus area is to make Calgary a more attractive place to live, work and play which should result in the city, and downtown, being able to attract new employers, young professionals and top talent as well as enticing organizations already here to grow and expand locally. Developing place is achieved through key initiatives that a) accelerate urbanization and connectivity in the Core b) expand and enhance tourism, cultural and recreational assets and c) actively support diversity and inclusion.

The success of the vision of East Village and its flagship destination of the new Central Library demonstrates the resilience dividend that can be achieved through visionary place making. With the simple vision, "To Inspire All", the new Central Library embodies that sense of place, a place where we all belong. A destination for Calgarians and tourists alike to be inspired, to learn and dream.

<p> <b>Why Is This Important?</b></p> <p>The Triple Bottom Line (TBL) Council Policy (2005) serves as The City's primary sustainability policy. Its intent is to bring the social, environmental and economic aspects into the decision-making at The City. When the TBL Policy was created, it signaled an important commitment making decisions based not only on an economic "bottom line" but rather on the triple bottom line that includes social and environmental considerations. Since the TBL was created the City has advanced in its understanding and application of sustainability in decision-making; however, robust analysis, implementation and reporting remains uneven. The Policy review provides a timely opportunity to deliver clarity and coordination to the many related policies and strategies at The City. This includes further strengthening the relationship between resilience efforts including the resilience dividend tool, and long-term sustainability outcomes.</p> <p><b>What Will We Do?</b></p> <p>Calgary Growth Strategies is conducting a TBL Policy review in collaboration with other City Business Units to make it more aligned with The City's current policy and implementation context. Scope of the review will include a proposed updated policy, as well as an Implementation Plan. The updated Policy will serve to maintain the commitment to sustainability, provide clarity to the policy landscape, and further enable implementation across The Corporation.</p> <p><b>How Will We Do This?</b></p> <p>Collaboration with sustainability champions and other relevant policy leads to develop proposed Policy and Implementation Plan scope to be brought forward to City's Priority and Finance Committee and Council for endorsement. Review will also include formal consultation with members of Council.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead Organization</b> The City of Calgary: Calgary Growth Strategies</p> <p><b>Proposed Partner Organizations</b> Other City of Calgary Business Units/Services</p> <p><b>With What Proposed Resources?</b></p> <p>City of Calgary staff Expertise in the broader community</p> <p><b>When Will We Start?</b></p> <p>Q1 2019</p> <p><b>How Long Will It Take?</b></p> <p>Q4 2019 to develop the proposed Policy, Implementation Plan scope Q4 2020 Pending endorsement in 2019, a final Policy and Implementation Plan will be brought to Council</p>
<p> <b>Resilience Value</b></p> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Decision-making and leadership</li> <li>• Multi-stakeholder engagement</li> <li>• Strategies and plans</li> <li>• Capacity and coordination</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p>   </p>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• The updated TBL Review is brought to Council.</li> </ul>	

## Integrating Resilience into Municipal Government: One Calgary 2019-2022 Service Plans and Budgets

RESILIENCE IN ACTION (RIA.3)

The City of Calgary conducts four-year service plans and budgets. This work is based on three conversations between the Community, Council and Administration.

**Vision:** What the Community wants as long-term quality of life conditions for Calgary, and Council's leadership role in defining The City's contribution to this vision.

**Strategy:** What Council asks Administration to deliver over the four years, and how Administration will respond.

**Value:** How Administration will ensure the Community receives value through the services delivered by The City.

While developing the four-year service plans and budgets, resilience was an intentional lens considered by all three members of the conversation. This was a natural topic based on our collective awareness of the stresses and shocks our community had recently faced: a structural economic downturn, access to funding to support long-term plans, the 2013 flood, recent wind and snow events.

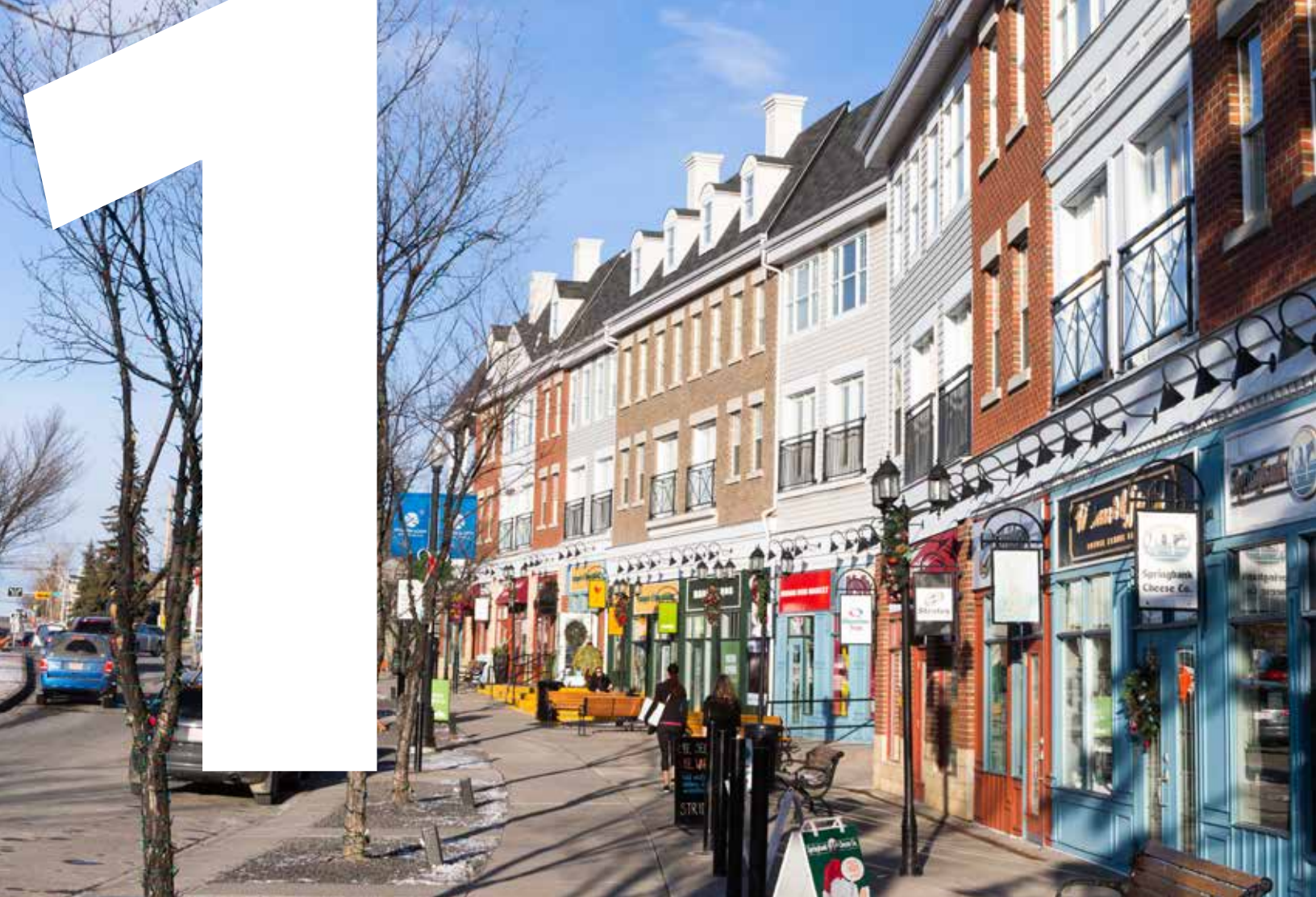
Intentionally, the resilience team supported the organization through specific engagement in lifting awareness of stresses and shocks, training colleagues in resilience thinking using the resilience



lens, strategic foresight and the City Resilience Framework. Resilience thinking — identifying co-benefits, co-creating solutions, and considering the resilience dividend of efforts — was integrated into our conversations with the community, with Council, and with colleagues and stakeholders in building the plan. Specific consideration of our Economic Strategy, Climate Resilience Strategy, Municipal Development Plan and Long Range transportation plan were specifically considered while Administration prepared the recommendations for Council's consideration, fostered through a step-by-step dialogue between our community, our colleagues and our Council over the course of 2018.

### Resilience was embedded in One Calgary in the following ways:





## PILLAR 1



# The Future of Calgary's Economy

### GOAL

All community members are encouraged and able to participate in a diverse and strong economy.





## Overview

The resilience of a city improves when all are encouraged and able to participate in a diverse and strong economy. This enhances the community’s ability to attract business, talent and investment. Calgary can capitalize on its high quality of life, available commercial real-estate and educated workforce as it continues to bounce back from the recent economic downturn. The community is engaged with local businesses, other orders of government and City partners cooperating and exploring opportunities to build a resilient economy. The importance of becoming a more economically resilient city is increasingly urgent.

Our efforts undertaken developing the Preliminary Resilience Assessment as well as learnings from the economic collaboration circle showed considerable vulnerability to the long-term stresses of economic uncertainty, inequality and lack of social cohesion, lack of economic diversification, and increased unemployment and poverty rates. Many of these stresses can be amplified with exposure to the key shocks identified in our work including, financial and economic crisis, cyber-attacks and extreme weather incidents.

### Outcome 1A

**Calgary’s workforce is ready for emerging economies**

#### Action 1A.1

Develop Talent for Emerging Economies

### Outcome 1B

**Digital Disparity in Calgary is addressed so Calgarians have safe and equitable access to a connected economy and social realm**

#### Action 1B.1

Understand Digital Disparity

#### Action 1B.2

Be 5G-Ready

### Outcome 1C

**Strengthening resilience through business continuity**

#### Action 1C.1

Business Continuity Planning

### Outcome 1D

**Calgary is able to coordinate efficiencies, levers and incentives to grow and attract business**

#### Action 1D.1

Attraction, Growth and Resilience Dividend

#### Action 1D.2

Implement a Living Lab Strategy and Governance Model

#### Action 1D.3

Future of Calgary’s Centre City

**“We must act now — and we must understand that if we do not manage this challenge with energy, commitment, skill and resources, this challenge will manage us to our great detriment.”**

– Jim Gray, Calgary business person and philanthropist

We are working towards ensuring Calgary’s workforce is ready for emerging economies. To support underemployed Calgarians develop the skills to participate in emerging economies, we are building an education ecosystem that reflects the needs of industry and is resilient (flexible, robust, integrated and inclusive).

Meaningful participation in civic life and emerging economies is increasingly dependent on being connected. Reducing digital disparity is key to achieving economic outcomes. We are working to develop a digital disparity study to identify barriers to digital participation due to access, hardware, literacy and lack of infrastructure. A commitment to safe and equitable access strengthens the business case for digital infrastructure enabling Calgarians to fully participate in the economy and society. Our city can also strengthen resilience through business continuity. Small/midsize businesses and non-profit organizations contribute to Calgary’s economy and vibrant communities. However, they are vulnerable groups who have limited resources to deal with prolonged shocks. Our economic resiliency improves when these groups are prepared to survive and thrive during and after disruptions. Finally, Calgary must take steps to coordinate efficiencies and incentives to grow and attract business. Working with 100RC Platform Partners, we are encouraging market development while strengthening resilient outcomes. Developing a Resilience Dividend tool will allow The City to evaluate business development opportunities ensuring that investments accelerate a resilient city. This will help entrepreneurs bring big ideas to fruition, support investment in our local economy and make Calgary more business friendly.



### Value Proposition

- Immediate opportunity to identify and implement economic strategies.
- Collaborative approach to explore Economic Strategy outcomes within The City and with external partners.



### Our Journey

In 2018, City Council unanimously adopted Calgary in the New Economy, an economic strategy whose implementation will be led by Calgary Economic Development (CED) in partnership with The City. Along with the Preliminary Resilience Assessment (PRA), the document guided the four key outcomes of the Economic Strategy.

We launched a collaboration circle to bring economic thought leaders, industry and Calgarians together to understand the economic issues and opportunities facing our City. We met regularly to develop outcome leads and implementation teams while continuing to refine our actions. The resilience team also participated in the development of other strategies and plans including the Economic Strategy, Centre City refresh and One Calgary. This allowed for the cross-pollination of ideas and actions. In Partnership with CED and other partners, the resilience team also participated in industry round tables and focus groups to better understand the economic issues facing our city.

## Linkage to other Resilient Calgary Pillars



### Inclusive Futures:

A resilient economy is one where all equity-seeking communities are able and encouraged to participate.



### The Future of Calgary's Natural Infrastructure:

A resilient economy and attracting talent depend on the high quality of life afforded by natural assets. Business continuity is also improved when natural infrastructure is utilized to mitigate the impact of floods and other disasters.



### Infrastructure:

A resilient economy depends on reliable infrastructure to connect neighbours, digitally and physically. Resilient infrastructure is the foundation for quality of life and a strong economy.



### Future-Focused Calgary:

Strategic foresight and a resilience dividend tool help us focus our economic actions on opportunities that will have the greatest return on investment.

Calgary's success depends upon our ability to adapt to the technological advances that are disrupting our core industries. Calgary Economic Development is incorporating a variety of initiatives to support workforce transition to meet the needs of the digital economy and support the Economic Strategy. Calgary's Tech Talent Accelerator is a collaboration with post-secondary and training institutions to provide short-term skill development programs that address immediate business needs. The Digital Skills Mapping Platform is designed to transition displaced professionals from the Oil and Gas sector to in-demand opportunities in technology across all sectors, as the demand for tech talent in Calgary has increased by 35 per cent in the past three years. Calgary Economic Development is also working collaboratively with training and post-secondary institutions to increase programming with work-integrated learning models to ensure quicker employment opportunities at program completion. A Digital Academy model is being developed that can be utilized by companies and service providers to create an awareness of technology, and to increase the digital literacy of its workforce.



### OUTCOME 1A:

#### Calgary's workforce is ready for emerging economies

**Description:** In support of underemployed Calgarians developing the skills needed to participate in emerging economies (including the tech industry), we are working on activities towards an education ecosystem that reflects the needs of industry and is resilient (flexible, robust, integrated and inclusive).

## ACTION 1A.1: Develop Talent for Emerging Economies



### Why Is This Important?

Calgary has an employment gap within emerging economies. The tech sector is experiencing growth and technology is rapidly permeating all sectors of the economy. With digital technology scaling quickly in the city, the potential transition of workers into digital occupations across Calgary can prove to be mutually beneficial for both job seekers and businesses (2018, Cutean, A., Davidson, R.). There is also the need for strengthened collaboration with post-secondary and training institutions to provide short-term skill development programs that address immediate business needs. A resilient economy is one that encourages all to find meaningful opportunities to participate. As we work towards inclusiveness, our economy also benefits from greater participation from underutilized and untapped talent within equity-seeking communities.

### What Will We Do?

Calgary Economic Development leads efforts to:

- Develop and maintain an online tool to connect job seekers with current employment opportunities and the skills training opportunities.
- Collaborate between Calgary Economic Development, industry and educators (e.g. post-secondary institutions) to create skill-development programs that address immediate industry needs.
- Develop accessible opportunities that encourage gender and cultural diversity in our emerging technology sector.

### How Will We Do This?

In alignment with the Economic Development Strategy, continue to implement strategies that include:

- Expand experiential learning programs.
- CED, alongside employers and training providers has built an online platform that hosts job posting and training opportunities <https://www.calgaryupskill.ca/>
- Collaborate with post-secondary institutions and other educators to pilot and scale nimble, short-form programs (three- to six-month certificates) that address immediate business needs.
- Offer appropriate networking and recruiting opportunities to ensure graduates obtain competitive jobs.
- Explore opportunities to deliver courses downtown.
- Ensure programs are accessible and tailored to equity-seeking communities.
- Focus talent recruitment activities to attract women and diverse employees into leadership positions.



### Who's Involved?

**Proposed Lead Organization**  
Calgary Economic Development (CED)

### Proposed Partner Organizations

Office of the Mayor  
Information and Communications Technology Council (ICTC)  
Industry and educators (e.g. post-secondary institutions)  
Educational institutions  
Province of Alberta Local employers

### With What Proposed Resources?

CED staff  
ICTC Staff  
Provincial funding

### When Will We Start?

2018

### How Long Will It Take?

Ongoing



### Resilience Value

#### Economy & Society

- Community participation
- Local economy

#### Health & Well-being

- Skills & training
- Local business development & innovation

### Benefit to Other Pillars and Shared Theme



### Success Measures:

- Growth in employment in technology fields.
- Number of people from equity-seeking communities completing skills development programs.
- Time required to fill in demand jobs.

Calgary is evolving toward a future of technological change, digital dominance, automated intelligence and innovative solutions to complex issues. Our Mayor and Calgary City Council have kept a watchful eye on this new future and its deep ties to a robust and thriving economy for our city. To remain vibrant and resilient, our economy will demand the skills and talents of people who are educated and trained to thrive in these emerging industries and sectors.

Along with Council, Calgary's mayor, Naheed Nenshi plays a significant role in efforts to attract new talent to our city. As the first Muslim mayor of a major North American city and winner of the World Mayor Prize in 2014, he epitomizes the changing demographics of our province, and how people from all walks of life can succeed here in whatever field they wish to pursue. It is hard to find someone who does a better job selling Calgary to potential investors, to companies looking to set up offices here, and to people looking for a great place to make a living and make a life.

In October 2018, Mayor Nenshi accompanied Calgary Economic Development to Vancouver to

sell Calgary's tech industry. While all of the attention has been on employment challenges in the oil and gas sector, opportunities in the tech sector have grown by nearly 55% in Calgary and many companies are having a hard time finding the talent they need to expand. Filling these jobs (there are currently more than 1900 vacancies in the sector) is crucial to diversifying our economy and making it more resilient. Mayor Nenshi spoke to a room full of Vancouver-based tech firms about the lower cost of doing business here and the quality of life awaiting their employees on the other side of the Rockies. He also attended a job fair for tech workers where he highlighted the affordability of housing and shorter commute times. Similar missions to international cities are being planned for later in 2019 and through 2020.

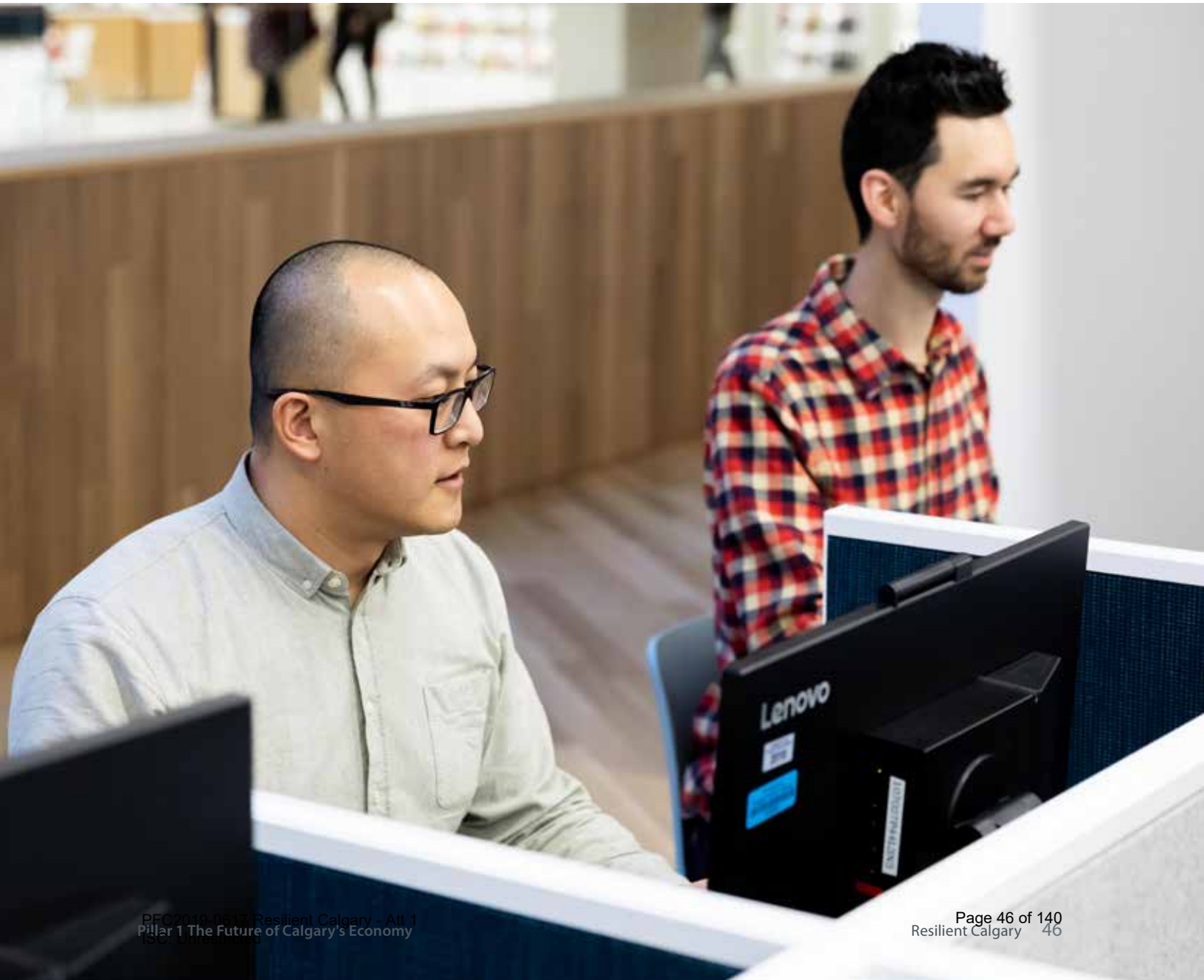
Calgary Economic Development has also been working with the company VanHack to help connect employers here in Calgary with tech talent from around the world. As Mayor Nenshi asserts, "It's not hard to make the case for Calgary, we just need to make sure the world hears our story".







## OUTCOME 1B:

### Digital Disparity in Calgary is addressed so Calgarians have safe and equitable access to a connected economy and social realm

**Description:** Meaningful participation in civic life and emerging economies is increasingly dependent on being connected. Reducing digital disparity is imperative to achieving our economic outcomes. We have been working to develop a digital disparity study that would identify barriers to digital participation due to access, hardware, literacy and lack of infrastructure. A commitment to safe and equitable access strengthens the business case for digital infrastructure enabling citizens and businesses to fully participate in the economy and society.








## ACTION 1B.1: Understand Digital Disparity

<p> <b>Why Is This Important?</b></p> <p>Online access is a necessity to fully participate in the economy and society though one that comes with risks and exclusions. Equitable, safe and secure online access is a necessity for meaningful economic and social participation in Calgary. Deficiencies in digital literacy, network access and affordability are barriers that reduce the participation capacity for Calgarians.</p> <p><b>What Will We Do?</b></p> <p>Completing a study of the connectivity barriers of Calgarians will guide the implementation of support programs that address issues including, access, digital literacy and affordability.</p> <p>Adopting the Cities for Digital Rights declaration and its principles for safe and inclusive online access will guide the development of actions to advance Resilient Calgary, Smart City and Living Lab strategies. This will also set the expectation that the right of safe online access is as important to quality of life, meeting basic needs, and full participation in our city as other critical infrastructure.</p> <p><b>How Will We Do This?</b></p> <p>In partnership with the University of Calgary and community partners, we will conduct research to better understand those most impacted by the lack of digital literacy, affordability and lack of digital infrastructure to connect online.</p> <p>We will work with other Cities for Digital Rights signatories to understand the requirements of become a member and work to integrate Digital Bill of Rights into community and infrastructure strategies.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead Organization</b> The City of Calgary: IT-Smart City</p> <p><b>Proposed Partner Organizations</b> The City of Calgary: Resilience and Infrastructure Calgary Enough for All University of Calgary United Way</p> <p><b>With What Proposed Resources?</b></p> <p>The City of Calgary: Resilience and Infrastructure Calgary University of Calgary staff United Way staff</p> <p><b>When Will We Start?</b></p> <p>Q3 2019</p> <p><b>How Long Will It Take?</b></p> <p>Two years</p>
<p> <b>Resilience Value</b></p> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> <li>• Corruption reduction</li> </ul> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Communication between Government &amp; public</li> </ul> <p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Communication technology</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p></p>
<p><b>Success Measures:</b></p> <ul style="list-style-type: none"> <li>• Digital Disparity study is complete and a baseline is established for digital access barriers.</li> <li>• Adoption of digital rights lens into policy and strategies.</li> </ul>	

**“Resilience is caring for the underprivileged in helping them bounce back from their own economic struggles.”**

- What We Heard report, 2019 Resilient Calgary Summary of input

**Action 1B.2: Be 5G-Ready**

<p> <b>Why Is This Important?</b></p> <p>For our city to be future-ready, policy, investment and infrastructure need to be in place for digital access (5G/small cell) that improves our ability to meet the growing need to move information over communication networks quickly and reliably. Beyond the provision of cellular and Wi-Fi services, 5G is going to play an important role in igniting the digital economy as it has the potential to enable and accelerate new innovations forward such as Industrial Internet of Things (IIoT), field sensors, Autonomous Vehicles (AV) and Connected Vehicles (CV), vehicle entertainment systems, and intelligent traffic systems.</p> <p><b>What Will We Do?</b></p> <p>Ensuring equal access to municipal infrastructure with multiple purposes will support the deployment of small cell antennae required for 5G. The development of new standards for attachments to City assets and new municipal processes will reduce deployment barriers while still maintaining municipal approval processes. Integrating these new standards and processes into future municipal growth planning will ensure Calgary has a sustainable plan long into the future.</p> <p><b>How Will We Do This?</b></p> <p>A digital infrastructure strategy will be developed to accelerate the eventual deployment of thousands of small cell antennas over the next 10 years. A Proof of Concept (POC) in cooperation with three large carriers will determine the requirements, validate processes, establish new standards and agreements. Lastly, we will develop business models to ensure compliance with regulation and legislation while developing revenue opportunities on digital assets.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead Organization</b> The City of Calgary: IT</p> <p><b>Proposed Partner Organizations</b> The City of Calgary: Resilience and Infrastructure Calgary CED Industry</p> <p><b>With What Proposed Resources?</b></p> <p>The City of Calgary staff Industry</p> <p><b>When Will We Start?</b></p> <p>Q3 2019</p> <p><b>How Long Will It Take?</b></p> <p>Ongoing</p>		
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<p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Communication technology</li> </ul>	<p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Inward investment</li> </ul>		
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• The City will have a public-private, 5G-enabled zone model is designed and market-ready.</li> </ul>			

**“We need more IT/tech companies here. I’m not an IT man, but I see that is the future”.**






- What We Heard report, 2019 Resilient Calgary Summary of input



## OUTCOME 1C:

### Strengthening resilience through business continuity

**Description:** We are working with business, emergency response and business continuity leaders to leverage their expertise in disaster preparation and recovery to strengthen the resiliency of our business and non-profit sector in their preparation for planned and unplanned disruptions.

Action 1C.1: <b>Support Business Continuity Planning</b>			
<p> <b>Why Is This Important?</b></p> <p>Calgarians depend on the business and service providers to meet our everyday needs. This is even more important during times of crisis though fewer than 45 per cent of Calgary businesses have developed a business continuity plan to address disruption. Community partners' efforts help to raise awareness of the risks and make available the tools to assess and strengthen readiness for disaster and disruption.</p> <p>Learnings from the 2013 flood response and recovery efforts and other large infrastructure projects have shown considerable impact on economic corridors especially when these disruptions impact small business. We have also seen the positive impact coordinated efforts can have on helping these businesses survive and thrive through disruption.</p> <p><b>What Will We Do?</b></p> <p>With our partners, we aim to:</p> <ul style="list-style-type: none"> <li>• Raise awareness and understanding of the importance of business continuity planning.</li> <li>• Encourage organizations to evaluate their own disaster preparedness.</li> <li>• Promote undertaking actions needed to be better prepared for disruption.</li> <li>• Work to reduce the negative impact of disruption on adjacent businesses/communities during long-term construction.</li> </ul> <p><b>How Will We Do This?</b></p> <p>Collaborating with community leaders in business continuity and partners like the Chamber of Commerce, CARYA and the Calgary Emergency Management Agency, we will share learnings and opportunities to strengthen business continuity of Calgary Businesses and non-profit sector. We will also conduct research on best practices from other jurisdictions for business support programs. We will utilize this research to develop a business support strategy and tool box that can be used for future infrastructure projects.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead Organization</b> Chamber of Commerce CARYA The City of Calgary: Calgary Emergency Management Agency</p> <p><b>Proposed Partner Organizations</b> The City of Calgary: Calgary Neighbourhoods The City of Calgary: Resilience and Infrastructure Calgary The City of Calgary: Transportation CED University of Calgary United Way Industry</p> <p><b>With What Proposed Resources?</b> Partner Staff The City of Calgary staff</p> <p><b>When Will We Start?</b> Q3 2019</p> <p><b>How Long Will It Take?</b> Ongoing</p>		
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<p><b>Success Measures:</b></p> <ul style="list-style-type: none"> <li>• Increase in businesses and Non-Government Organizations reporting that they have completed a business continuity plan.</li> <li>• Complete research on global business support models.</li> <li>• Complete the business support strategy and playbook for businesses adjacent to large infrastructure projects.</li> </ul>			

Calgary is a community known by its location in the foothills of the Rocky Mountains and proximity to the Bow and Elbow rivers. While these natural elements provide a beautiful backdrop to live, work and play, they also contribute to severe weather and create other natural hazards like flooding. In fact, Calgary has experienced five of the 10 costliest disasters in Canadian history. In addition to making our City systems, plans and critical infrastructure more emergency-proof, a critical component of increasing Calgary’s resilience to disaster is the role the community must play in preparing themselves for the kinds of emergencies we are likely to experience here.

Through its flagship “Ready Calgary” program, The Calgary Emergency Management Agency has been actively educating and training Calgarians to do just that. Aimed at individuals, families, businesses and communities, Ready Calgary uses community events, online and in-person courses/training, partnerships, volunteer recruitment and campaigns to help Calgarians help themselves be more prepared. To learn more, visit [calgary.ca/getready](http://calgary.ca/getready).



The City of Calgary partnered with 100 Resilient Cities (100RC) and the Global Network for Advanced Management (GNAM) to host a global, online project for urban resilience during the fall semester of 2018. For four months The City worked with graduate students from the University of British Columbia (Canada) and Yale SOM (USA) to explore international examples of business support programs adjacent to large infrastructure projects. The final project report found that

transportation agencies, local governments and business associations have used a wide variety of mitigation tactics to reduce construction impacts on businesses. Common tactics include access management strategies, marketing and signage, and community outreach. Less common, but potentially very effective strategies include business consulting programs, financial support programs (loans, grants etc.), and procurement strategies (2018, Li et al).

### OUTCOME 1D:

#### **Calgary is able to coordinate efficiencies, levers and incentives to grow and attract business**

**Description:** We are bringing together various business attraction stakeholders to explore the tools available to encourage market development while strengthening resilient outcomes. We have also been working closely with our Smart City and Living Lab teams to identify opportunities to leverage underutilized City assets to accelerate growth in the innovation ecosystem. Our Living Lab efforts support increased economic diversification and jobs for Calgarians. It will help entrepreneurs bring big ideas to fruition, support investment in our local economy and make Calgary more business friendly. By revisiting our 10-year Centre City strategy, we are able to strengthen the resilience of our downtown core with a vision for the Centre City along with strategies and actions for community planning, urban design, governance, economic, cultural and social development.



## Action 1D.1: Attraction, Growth and Resilience Dividend



### Why Is This Important?

Business development is a vital part of a resilient economy, as such, there are many market attraction efforts underway in our city. Development and growth opportunities should be strategic and consider a resilience dividend that allows for a better understanding of short- and long-term benefits from across the City Resilience Framework, whether they are economic, social or environmental. Like infrastructure investments, economic investments should look to meet strategic long-term needs. This understanding will improve the business case for investment opportunities and ensure the capital outlay does not put the community resiliency at risk in the future.

“As the world becomes more connected and complex, so do business activities. From startups to mature enterprises, Calgary aims to create a more business-friendly environment in order to attract and retain companies.”(2018, Calgary in the New Economy, CED)

### What Will We Do?

Coordinate market incentives and business supports to grow and attract business with a focus on opportunities that strengthen our city’s resilience or ability to meet needs during shocks and stresses (e.g. affordable housing, health, climate change or economic downturns).

### How Will We Do This?

Working with a 100RC Platform Partner and community stakeholders, we are developing a Resilience Dividend tool to prioritize opportunities and calculate resilience potential. As an example, for a vertical farming partner, that could include measuring the impact of low carbon investment, skill development along with the strengthening of food security and our innovation ecosystem. This tool can guide investment prioritization and develop thresholds that trigger specific attraction strategies. This could build on the outcomes within Opportunity Calgary Investment Fund to quantify the expected impacts from opportunities that make our City more resilient, particularly on aspects beyond primary economic benefits.



### Who’s Involved?

**Proposed Lead Organization**  
The City of Calgary: Resilience and Infrastructure Calgary

**Proposed Partner Organizations**  
The City of Calgary Corporate Economics Office  
The City of Calgary: Real Estate & Development Services  
The City of Calgary: Service Owners  
Calgary Economic Development  
Industry

### With What Proposed Resources?

The City of Calgary staff  
Industry

### When Will We Start?

Q2 2019

### How Long Will It Take?

Ongoing



### Resilience Value

#### Economy & Society

- Economic linkages
- Local economy

#### Health & Well-being

- Local business development & innovation

### Benefit to Other Pillars and Shared Theme



### Success Measures:

- Increase net percentage in the number of businesses.
- Number of business development efforts that utilize Resilience Dividend Tool to support business case development.

**“We should be more inclusive of small businesses. I’ve heard too many stories of small businesses having to close because of property tax rises. We need this economic diversity to weather the busts. Small businesses also help us grow our innovation base and keep it here in The City.”**

– What We Heard report, 2019 Resilient Calgary Summary of input

Calgary Dollars, our community currency, utilizes a cash alternative to keep the local economy flowing between neighbours and businesses. Created in 1996 and funded by The City of Calgary Family & Community Support Services (FCSS) since 2003, Calgary Dollars works to advance the interests of small businesses and equity-seeking communities.

Aligned with the Enough For All Strategy, the Economic Development Strategy and imagineCalgary, Calgary Dollars has also collaborated with 100RC and other global cities with complementary currency pilots.

### **Economic Resilience for Equity-Seeking Communities**

December 7, 2018 saw the launch of the digital version of Calgary Dollars to circulate along with the printed currency. The launch was celebrated by the President of The Calgary Housing Company, the Alberta Finance Minister and the Victoria Park Business Improvement Area Executive Director. The Calgary Housing Company is now accepting Calgary Dollars as part of rent in a pilot with four other affordable housing agencies, while The City of Calgary accepts Calgary Dollars for transit tickets, and 50 per cent of business license fees.

The Alberta Minister of Community and Social Services endorsed Calgary Dollars as beneficial for secured income and the Assured Income for the Severely Handicapped (AISH) recipients, with the Annual Calgary Dollars outcome measurement has both the social and economic capital evidence to back that up.

### Social capital:

- 67 per cent of Calgary Dollars users state they have established relationships of trust due to participation.
- 73 per cent state they have someone that would help them during challenging times as a result of their involvement with Calgary Dollars.
- 70 per cent state that Calgary Dollars has increased their involvement in their community.





### Economic capital:

- 79 per cent have been encouraged to buy more locally.
- 48 per cent agree that after using Calgary Dollars they are more able to live within their means.
- 54 per cent don't worry about money as much after being in the Calgary Dollars program.

As Calgary's Mayor Nenshi affirms, "complementary currencies can make a huge difference as we build communities together."



## Action 1D.2: Implement a Living Lab Strategy and Governance Model

<p> <b>Why Is This Important?</b></p> <p>A living lab ecosystem looks for ways to break down local barriers to innovation. It supports increased economic diversification and jobs for Calgarians. It can help entrepreneurs bring big ideas to fruition, support investment in our local economy and make Calgary more business friendly. Some exciting experiments have already launched.</p> <p><b>What Will We Do?</b></p> <p>As a key stakeholder in a thriving innovation ecosystem, we are supporting the development of a Living Lab Strategy, opening up City assets to companies, researchers and individuals to test and try ideas and products in a real-life environment.</p> <p><b>How Will We Do This?</b></p> <p>With our partners, we will endeavor to:</p> <ul style="list-style-type: none"> <li>• Understand what assets have Living Lab capacity and potential</li> <li>• Develop criteria for Living Lab opportunities</li> <li>• Develop an intake process to review and implement opportunities</li> <li>• Develop a strategy for the evolution of Living Labs in our City</li> </ul>	<p> <b>Who's Involved?</b></p> <p>The City of Calgary: IT – Smart City</p> <p><b>Proposed Partner Organizations</b></p> <p>The City of Calgary: Transportation</p> <p>The City of Calgary: Real Estate and Development Services</p> <p>The City of Calgary: Resilience and Infrastructure Calgary CED</p> <p>University of Calgary</p> <p><b>With What Proposed Resources?</b></p> <p>The City of Calgary staff</p> <p><b>When Will We Start?</b></p> <p>Q4 2018</p> <p><b>How Long Will It Take?</b></p> <p>Ongoing</p>
<p> <b>Resilience Value</b></p> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Economic linkages</li> </ul> <p><b>Health &amp; Well-being</b></p> <ul style="list-style-type: none"> <li>• Local business development &amp; innovation</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p></p>
<p><b>Success Measures:</b></p> <ul style="list-style-type: none"> <li>• Develop online intake process in partnership with Calgary Economic Development.</li> <li>• Increase in number of clients accessing City assets through the Living Lab Program.</li> </ul>	

**“Having the Living Lab as a partner allowed our product to mature in a realistic environment, demonstrated to our future customers that we were beyond the prototype stage, and allowed our customers to better visualize how the final installation would look in their environment.”**

– Takemetuit, Living Lab participant

Point Trotter Autonomous Systems Drone Flight Area opened in October 2018 and provides Calgary businesses, industry and researchers with a low-cost and accessible place for drones, autonomous vehicles or the next big innovation.

With 125 acres of land available, Calgary is one of the first major cities in North America to offer land for the mass flying of commercial drones on municipal-owned land. The Point Trotter project is part of the Living Lab strategy where The City of Calgary and Calgary Economic Development are working with the community to make public spaces, transportation corridors and land more accessible for the testing of technological innovation.

The idea of providing City-owned space for aerial drone testing started in 2017 when City staff looked at many emerging technologies, related societal trends, and what they could mean for the future of Calgary. Point Trotter Autonomous Systems Drone Flight Area was developed to support innovation,

the tech ecosystem and local businesses, which is one of the ways The City of Calgary is delivering on its business-friendly promise.

“Point Trotter Autonomous Systems Drone Flight Area is a great example of how The City of Calgary is working with our community partners to support innovation and allow entrepreneurs to bring their big ideas to fruition,” says Mayor Nenshi.





“We’re committed to supporting investment in our economy and making Calgary more innovative and business friendly.”

Point Trotter ASTA is a valuable asset to add to The City’s Living Lab initiative. The City is working with Calgary Economic Development to deliver a simplified process for users and producers to gain access to infrastructure (physical, digital and data) like the Point Trotter industrial park to test and try ideas and products in a real-life environment that is safe and secure.





**Action 1D.3: The Future of Calgary's Centre City**

<p> <b>Why Is This Important?</b></p> <p>The Centre City Plan for Calgary's downtown area was approved by Council in 2007. The Centre City is made up of the downtown commercial core and is surrounded by five mixed-use neighbourhoods that function as a symbiotic whole. The plan is a coordinated strategy document that pulls together the vision for the Centre City along with strategies and actions relating to community planning, urban design, governance, economic, cultural and social development. The plan is undergoing its 10-year update to develop a current vision for the downtown to support its resilience as it undergoes a major transformation in response to a dramatic change in the downtown economy that has resulted in a significant drop in economic activity and jobs. This has impacted its social and economic environment and proposes challenges to ensuring its continued livability and role as the cultural heart of the city.</p> <p><b>What Will We Do?</b></p> <p>We will consult upfront with external stakeholders to understand their needs and wants and gather their suggestions. We will then propose a 10-year strategic plan that identifies actions that will drive us toward the vision.</p> <p><b>How Will We Do This?</b></p> <p>Extensive external engagement and intensive internal collaboration to ensure the actions are achievable. An accountability system will be identified that will steward the strategy on a regular basis and include regular updates to Council.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead</b> The City of Calgary: Urban Strategy</p> <p><b>Proposed Partner Organizations</b> The City of Calgary Planning Calgary Economic Development Calgary Municipal Land Corporation</p> <p><b>With What Proposed Resources?</b> Existing Operating Budgets</p> <p><b>When Will We Start?</b> Started Q2 2018</p> <p><b>How Long Will It Take?</b> Two years</p>
<p> <b>Resilience Value</b></p> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Fosters long-term integrated planning</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Promotes cohesive &amp; engaged communities</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p></p>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• The Downtown Scorecard is complete with quarterly Council updates and is being utilized to align strategies and implementation in the Centre City.</li> </ul>	



## PILLAR 2



# Inclusive Futures

### GOAL

**Institutions have trusted and informed relationships with Calgary's equity-seeking communities.**



## Overview

The resilience of a city improves when:

- Equity-seeking communities (escs) are regarded as strengths to society and have meaningful voices in decision-making and leadership.
- Communities are connected and feel empowered to act.
- Power is distributed fairly in our systems.
- Differing opinions that challenge our thinking are valued and accepted.

Communities and various sector partners agreed that a key resilience challenge in Calgary was the lack of inclusion in leadership and decision-making. One reason for this was that institutions did not trust the expertise and experiences that ESCs brought to the decision-making and leadership tables. The best way forward was for Calgary institutions to recognize these strengths and focus on building trusted relationships with ESCs.

We identified four outcomes and nine actions to advance this work. They are:

<p><b>Outcome 2A</b></p> <p><b>Calgary institutions include ESCs in decision-making and democratic processes</b></p> <p><i>Action 2A.1</i> Diversify representation on boards</p> <p><i>Action 2A.2</i> Open spaces for inclusive conversations</p> <p><i>Action 2A.3</i> Advance equity in organizations with a multi-sectoral community of practice</p>	<p><b>Outcome 2B</b></p> <p><b>Calgary institutions have trusted and informed relationships with Indigenous communities in a “good way”</b></p> <p><i>Action 2B.1</i> Support to revitalize Indigenous cultures and languages</p> <p><i>Action 2B.2</i> Walk parallel paths together</p>	<p><b>Outcome 2C</b></p> <p><b>Calgary institutions value diverse governance paradigms</b></p> <p><i>Action 2C.1</i> Build a governance systems map</p>	<p><b>Outcome 2D</b></p> <p><b>Calgary institutions invest in equitable economic development</b></p> <p><i>Action 2D.1</i> Encourage business investments addressing inclusion</p> <p><i>Action 2D.2</i> Develop a social procurement policy</p> <p><i>Action 2D.3</i> Explore guaranteed basic income options</p>
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## Linkage to other Resilient Calgary Pillars

When we work together to achieve these outcomes, ESCs will be respected as critical human assets needed to build a future-focused city. ESCs will be able to meaningfully participate in innovative and creative solutions to Calgary’s economic, natural infrastructure, and infrastructure resilience challenges.



## Value Proposition

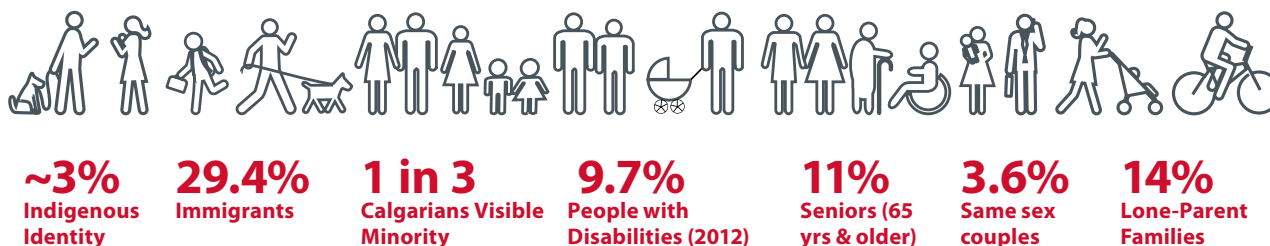
There are many institutions and strategies currently tackling social issues in Calgary (see Appendix 3: Strategic Alignments). What makes this pillar unique is the focus on the institutions’ role in building trusted relationships with ESCs, using a human-assets perspective (rather than a vulnerable-populations perspective). This pillar aims to use a systems-change approach where communities and institutions collectively work together with a future-focused lens to build a more resilient Calgary.

“Programs help people beat the odds. Systems change help them change their odds.” – Karen Pittman

## Our Journey

We live in a city of diverse people and communities. A vibrant place where people of different identities live, work and play. Local trends forecast that immigration will be Calgary's main driver of population growth until 2036. Urban Indigenous Peoples, seniors and racialized people represent fast-growing segments of our population. Our demographics from 2016 Statistics Canada show that Calgary has:

### Calgary has:



In February 2018, Calgary's Preliminary Resilience Assessment (PRA) identified a significant resilience issue — we as Calgary institutions see equity-seeking communities (ESCs) as vulnerable and dependent. We assume that these communities require help to change so they can integrate into society.

The evidence that we use to support this is:

- Lower rates of civic participation
- Higher rates of poverty
- Higher rates of un/under-employment
- Lower wages
- Lack of representation in leadership
- Countless stories of racism and discrimination

When we have a perspective that emphasizes only vulnerability and need, it fails to account for the wealth of talent, experience, and energy that ESCs bring to Calgary. By leveraging the untapped strengths of ESCs, Calgary can forge a resilient path that is creative, innovative and responsive in challenging times. The key to make all this happen is trust.

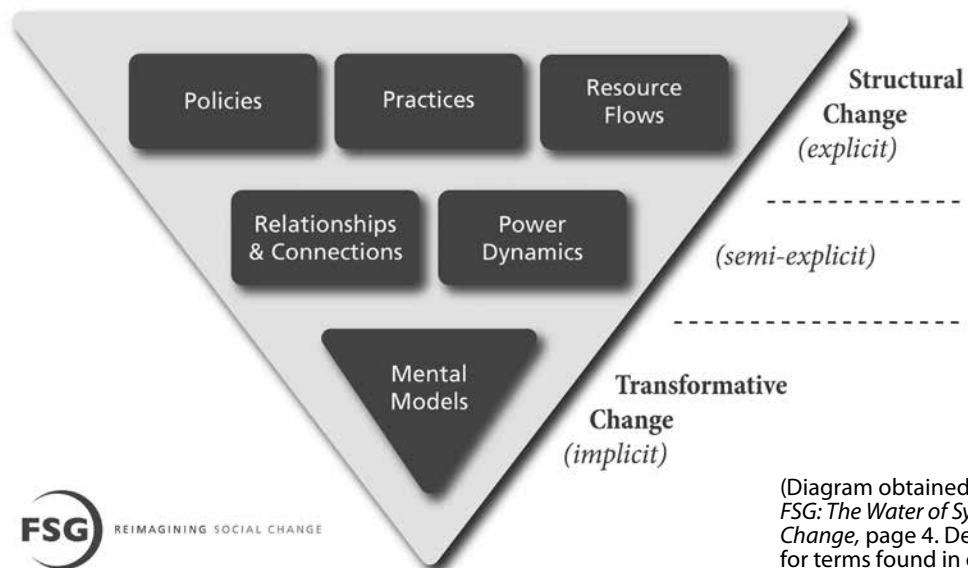
"There is one thing that is common to every individual, relationship, team, family, organization, nation, economy, and civilization throughout the world — one thing which, if removed, will destroy the most powerful government, the most successful business, the most thriving economy, the most influential leadership, the greatest friendship, the strongest character, the deepest love. On the other hand, if developed and leveraged, that one thing has the potential to create unparalleled success and prosperity in every dimension of life. Yet, it is the least understood, most neglected, and most underestimated possibility of our time. ... That one thing is TRUST." – Stephen M. Covey

We overwhelmingly heard from our ESCs that good relationships are a two-way street. However, they believed that most of the responsibilities fell on them to build those relationships with institutions. Institutions also have a duty in actively engaging and investing in these relationships.

With trust as our foundation, community and sector partners focussed on the active participation by institutions to nurture relationships with our ESCs. The Inclusion Collaboration Circle (ICC) that led this investigation began to explore how institutions can meet the expectations and needs for all involved parties if Calgary is to be resilient in the face of future stresses and shocks. A futures-thinking approach built on a strategic foresight method and the FSG Conditions of Systems Change framework was used. The ICC, co-led by United Way of Calgary and Area, included over 60 highly engaged representatives from ESCs and major institutions within Calgary (including the not-for-profit, private and public sectors). We spoke to eight different equity-seeking communities and four community expert groups to understand the society, technology, economic, environment and political (STEEP) trends that could impact relationships. Using this information, the ICC imagined four unique scenarios of Calgary in 2038. These scenarios helped us identify potential bumps in the road and opportunities that could impact relationships between institutions and ESCs. This process resulted in our commitment to achieve four outcomes by collectively working on nine actions.



### Six Conditions of Systems Change



(Diagram obtained from FSG: *The Water of Systems Change*, page 4. Definitions for terms found in glossary).

the city more adaptable to challenges that require unique solutions and perspectives. | Illustration by AUArts student **Aaron Adorable** | **WHAT IS RESILIENCY TO YOU?** Calgary shows its resilience through its continued support and investment on social programs for the children and youth of the city. By investing in these we can be assured that the city will thrive and flourish in the future. Calgary's celebration and support of diversity and multiculturalism also makes the city more adaptable to challenges that require unique solutions and perspectives.



## OUTCOME 2A:

### Calgary institutions include equity-seeking communities in decision-making and democratic processes

**Description:** In the development of this outcome, we heard that Calgary’s equity-seeking communities (ESCs) face barriers to meaningful participation in decision-making and democratic processes. This is projected to remain a challenge when strengthening of relationships between Calgary’s institutions and ESCs in the future.

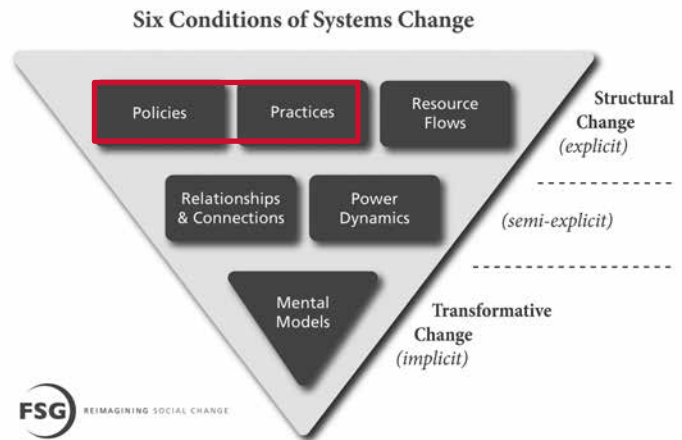
ESCs believe that institutions can nurture their relationships with ESCs by:

1. Including ESCs at the leadership table in their institutions.
2. Intentionally involving ESCs in decision-making that impacts their lives.

ESCs want institutions to listen and speak to them in ways that make them feel genuinely heard, understood and valued. ESCs want institutions to create space for debate and challenging conversations with honesty, dignity and respect. This goes beyond tokenism, advisory committees, general consultations and citizen surveys.

This has “done little to overcome voter apathy in elections, a general distrust in government, and people’s feelings of disempowerment, particularly among those who are marginalized,” (Wharf, 2016, p. 154).

Instead, ESCs need institutions to change their **policies and practices** that prevent them from (1) being in influential positions that can impact future change in Calgary; and (2) having meaningful voices in local democratic processes. This would be an important step forward for institutions to build trusted and informed relationships with ESCs.



## Accessible council chambers

RESILIENCE IN ACTION (RIA.10)

In 2006, City Council's Advisory Committee on Accessibility (ACA) performed an Accessibility Audit on the Municipal Building Complex, resulting in a major renovation to the Council Chamber. This would allow for Council, Administration and members of the public to seamlessly participate in the Municipal Government process through the creation of an accessible environment for people with physical, sensory and cognitive disabilities. Funding was secured for the project in 2010 and Council Chambers closed that summer. The accessibility renovation was completed for the swearing-in ceremony for City Council October 25, 2010.

The accessibility improvements have not only supported people with disabilities to participate in Council Chamber, but it created a space that is accessible for Councillors or members of Administration with an injury or other disabilities. The accessibility upgrades that benefit everyone include (1) lowering of the Council Chamber floor







and removing the existing ramps at the entrances to make the room accessible and barrier-free, (2) adjusting the seating in the viewing area to accommodate six spaces for mobility devices, (3) installing a universally accessible podium and microphone that adjusts, (4) installing new carpeting and stair nosings that provide contrast for people with vision loss and (5) adding a few bariatric seats throughout the Chamber. The new Councilor space also allows an individual to use a mobility device with moveable desks that adjust to the height required. Two new digital screens at the front of Council Chambers allows for captioning to be displayed, with typed words that are being said for people with hearing loss.

These changes in Council Chamber have led to a more inclusive space for people with disabilities in Calgary. It has led to their meaningful participation in the Municipal Government process and allows anyone with a disability to be part of City Council or Administration.










## Action 2A.1: Diversify Representation on Boards

 <b>Why Is This Important?</b>	 <b>Who's Involved?</b>			
<p>We heard from equity-seeking communities (ESCs) that institutions can show they trust them by having ESC members on their boards. It is there that ESCs can provide their different perspectives based on experiences and expertise.</p> <p>Governance is the top tier of leadership where ultimate oversight, strategic direction and policy are determined. Many reports and experts support that fully-trained and inclusive boards are better positioned to advance innovation, increase access to different markets, make better decisions and achieve results. A board which reflects the diversity of the community it serves has more legitimacy in that community and can help build networks and relationships to diverse groups.</p> <p>Many boards recognize that this is important, but struggle with finding people from ESCs to sit on their boards. They have asked for help to create more inclusive boards for their organizations.</p> <p><b>What Will We Do?</b></p> <p>We have partnered with Ryerson University to bring a national program called onBoard Canada to Calgary. This innovative program works towards diversifying not-for-profit and public boards to better represent the populations they serve.</p> <p><b>How Will We Do This?</b></p> <p>We initiated this work in March 2019 by co-hosting an event with onBoard Canada. We brought together over 50 stakeholders interested in advancing diverse governance. We discussed that we will move forward by:</p> <ol style="list-style-type: none"> <li>(1) Providing online and affordable governance training to both boards and individuals. This training embeds the principles of inclusion into their governance processes, policies and approaches.</li> <li>(2) Bridging the inclusion gap using a board-matching program that connects qualified candidates from equity-seeking groups to not-for-profit and public boards.</li> <li>(3) Offering continuous learning and networking opportunities for both boards and individuals that dig deeper into issues surrounding governance and inclusion.</li> </ol>	<p><b>Proposed Lead Organization</b> Post-Secondary Institution / Foundation</p> <p><b>Proposed Partner Organizations</b> Ryerson University: onBoard Canada</p> <p>The City of Calgary: Resilience and Infrastructure Calgary</p> <p>Calgary Local Immigration Partnership</p> <p>Various community partners and City business units</p> <p><b>With What Proposed Resources?</b></p> <p>The City of Calgary: Resilient Calgary staff</p> <p>onBoard Canada staff</p> <p>Funding from foundations interested in advancing inclusive governance</p> <p><b>When Will We Start?</b></p> <p>Q1 2019</p> <p><b>How Long Will It Take?</b></p> <p>Four years+</p>			
<p> <b>Resilience Value</b></p> <table border="0"> <tr> <td> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Decision-making and leadership</li> </ul> </td> <td> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul> </td> <td> <p><b>Health &amp; Well-Being</b></p> <ul style="list-style-type: none"> <li>• Skills and training</li> </ul> </td> </tr> </table>	<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Decision-making and leadership</li> </ul>	<p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul>	<p><b>Health &amp; Well-Being</b></p> <ul style="list-style-type: none"> <li>• Skills and training</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <div style="display: flex; justify-content: space-around;">    </div>
<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Decision-making and leadership</li> </ul>	<p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul>	<p><b>Health &amp; Well-Being</b></p> <ul style="list-style-type: none"> <li>• Skills and training</li> </ul>		
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• ESCs participate on public and not-for-profit boards.</li> </ul>				

**“Leadership here in Calgary needs perspectives and knowledge from all of us” Not always from the same people. And it can’t be merely tokenistic. We need to have a meaningful seat at decision-making tables.”**

– Participant from 2018 community conversations

## Action 2A.2: Open Spaces for Inclusive Conversations

<p> <b>Why Is This Important?</b></p> <p>We heard from equity-seeking communities (ESCs) that a strong, healthy democracy benefits from their wisdom, perspectives and participation, not only from the same people traditionally involved in these conversations. ESCs want us to imagine a city where they can participate fully, equally, and meaningfully, including those who have been historically excluded. This is essential in finding effective solutions to a city’s most complex issues.</p> <p><b>What Will We Do?</b></p> <p>We will create public spaces and processes where ESCs, organizations and government officials can come together to have constructive, respectful, informed and decisive conversations about important public issues. These processes would be intentional, proactive and accessible to Calgary’s ESCs.</p> <p><b>How Will We Do This?</b></p> <p>We will proceed in three ways:</p> <ol style="list-style-type: none"> <li>(1) Create safe and brave spaces: We will look for ways for diversity and free expression to respectfully co-exist in public spaces and in institutions. It is in these spaces that we can deepen our understanding of one another so we can find a way forward.</li> <li>(2) Implement inclusive communications and public engagement practices: We have already begun to develop tools and processes to share information in ways that everyone can understand. It means that we need to recognize that people understand and express themselves differently.</li> <li>(3) Strengthen inclusive marketing: We will create and review content that truly reflects the equity-seeking communities that our institutions serve. It means that we will elevate diverse voices, decrease biases, and lead positive social change through thoughtful and respectful content.</li> </ol>	<p> <b>Who’s Involved?</b></p> <p><b>Proposed Lead Organization</b> A public institution</p> <p><b>Proposed Partner Organizations</b> The City of Calgary: Customer Service and Communications Alberta Government: Communications &amp; Public Engagement City of Calgary: Resilience and Infrastructure Calgary Various community partners and City business units</p> <p><b>With What Proposed Resources?</b></p> <p>Current municipal and provincial staff</p> <p><b>When Will We Start?</b></p> <p>Q3 2019</p> <p><b>How Long Will It Take?</b></p> <p>Four years+</p>		
<p> <b>Resilience Value</b></p> <table border="0"> <tr> <td> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Communication between government and public</li> </ul> </td> <td> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul> </td> </tr> </table>	<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Communication between government and public</li> </ul>	<p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p>  </p>
<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Communication between government and public</li> </ul>	<p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul>		
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• ESCs inform planning and decision-making.</li> </ul>			

**“When people have a safe space where they can meet and connect, resiliency thrives. Constructing friendly physical spaces around the city would bring more people together and encourage them to take action, have their say and feel valued.”**

– What We Heard report, 2019 Resilient Calgary Summary of input

## Lori's Story: from shelter to sanctuary through affordable housing

RESILIENCE IN ACTION (RIA.11)



Lori left a difficult relationship, along with her son and daughter. It wasn't easy. Lori and her children arrived at a Calgary shelter seeking help.

Lori applied for assistance with the Calgary Housing Company and received an offer of a place to live three months later. Today, Lori works at a non-profit society, where she uses her experience to help other women leaving similar circumstances. She is also saving up for her forever home. Lori's kids are thriving, getting involved in community activities and making friends.

**"We came here with clothes and a few stuffies. Now I have this... what I call my sanctuary," says Lori. "The best thing about affordable housing is looking around in the morning with my coffee, and my kids aren't scared."**

– Lori

See more of Lori's story at [https://youtu.be/\\_X64w8z5DLo](https://youtu.be/_X64w8z5DLo)

Affordable housing is about people. People with hopes, needs, dreams and the drive to succeed.

However, with market rental rates among the highest in Canada, it's difficult for some Calgarians to pursue their dreams while affording a place to live. In fact, nearly one in five Calgary households are struggling with shelter costs and over 44,000 households are at risk of becoming homeless due to spending more than 50 per cent of their gross income on shelter costs.







Access to safe and stable housing helps create inclusive communities and makes our city a great place to live and work. People in affordable housing have greater chances to find and keep jobs, to learn and build skills, and be active participants in their communities. And the benefits are clear: Providing housing for one homeless person has been shown to save taxpayers \$34,000 annually.

That's why The City of Calgary works with all orders of government, as well as many Calgary-based affordable housing partners and champions like the Community Housing Affordability Collective, more commonly known as CHAC.

CHAC is a network of more than 100 organizations and citizens who are working to improve housing affordability through collaboration and advocacy. Together, they are able to see issues from many perspectives, helping the sector anticipate and adapt to risks nimbly and creatively.

But our collective work isn't done. Only 3.6 per cent of all housing in Calgary is non-market (affordable) housing — nearly half the national average in Canada's other urban centres. To match the national average, Calgary will need to build approximately 15,000 new units. The City of Calgary is committed to continue working with government, non-profit housing providers, and private sector developers to meet that need.

Action 2A.3: **Advance Equity in Organizations with a Multi-Sectoral Community of Practice**

<p> <b>Why Is This Important?</b></p> <p>For institutions to strengthen their relationships with equity-seeking communities (ESCs), they need to acknowledge that not all people start off the same. People have different experiences, barriers, backgrounds, wants and needs.</p> <p>Institutions need opportunities to discuss and better understand where ESCs are coming from and give them what they need to be successful. This means not necessarily giving everyone the exact same thing, but rather giving people the things they need to do well. Improving equity involves increasing fairness within services and processes of institutions, and in their distribution of resources. It requires an understanding of the root causes of outcome disparities within our society and a commitment to address those root causes that have led to unfair conditions.</p> <p><b>What Will We Do?</b></p> <p>We will establish the Calgary’s Equity Foundations Community of Practice, a multi-sectoral community of practice with members of Calgary’s institutions. We will work together to embed equity in our institutions and practices.</p> <p><b>How Will We Do This?</b></p> <p>Calgary’s Equity Foundations Community of Practice will participate in the Urban Sustainability Directors Network (USDN) Equity Foundations Program. This program will support the community of practice’s learning of how to apply an equity lens to our work and implement tools to advance equity in our organizations. This will be done by:</p> <ol style="list-style-type: none"> <li>(1) Developing shared language and analysis.</li> <li>(2) Learn how to conduct equity impact assessments (a systematic examination of how different groups will likely be affected by actions or decisions).</li> <li>(3) Support each other to create and implementing plans for integrating equity into our organizations.</li> </ol>	<p> <b>Who’s Involved?</b></p> <p><b>Proposed Lead Organization</b> City of Calgary: Resilience and Infrastructure Calgary</p> <p><b>Proposed Partner Organizations</b> Various community partners and City business units</p> <p><b>With What Proposed Resources?</b></p> <p>Funding from participating sectors</p> <p><b>When Will We Start?</b></p> <p>Q2 2019</p> <p><b>How Long Will It Take?</b></p> <p>Three years+</p>
<p> <b>Resilience Value</b></p> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Collaboration &amp; empowerment</li> <li>• Knowledge transfer</li> <li>• Strategies &amp; plans</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p>  </p>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• ESCs access services that address their needs.</li> </ul>	

**“We need to learn from each other to create more equitable organizations. It’s really hard to do this on our own. Is there a way to share our tools and resources so we don’t recreate the wheel?”**

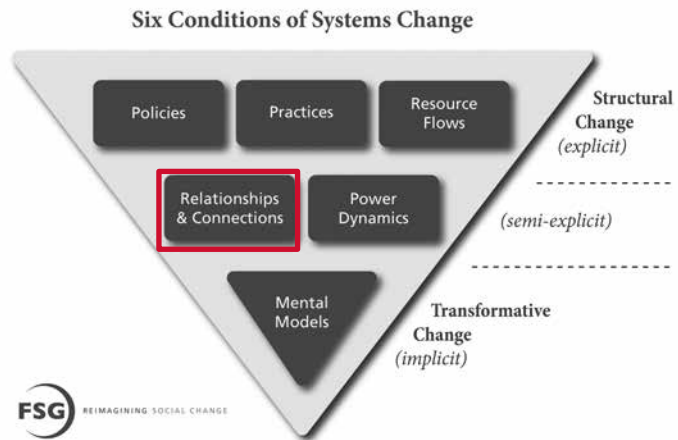
– Inclusion Collaboration Circle member

## OUTCOME 2B:

### Calgary institutions have trusted and informed relationships with Indigenous communities “in a good way”\*\*

**Description:** In the development of this outcome, we heard that Calgary’s Indigenous communities face barriers in building trust with institutions due to the historical context of their relationships. This is projected to remain a challenge when strengthening relationships between Calgary’s institutions and Indigenous communities in the future.

Indigenous communities believe that institutions can address some of the historical challenges in their relationships through institutional support of Indigenous-led and prioritized initiatives. They do not want institutions to lead their work, but to play a supportive ally role in moving their work forward. This can be first done by institutions actively and deeply listening to what Indigenous communities really need from Calgary institutions. This process will shift the “expertise” towards Indigenous community members rather than situating institutions as experts.



This outcome was inspired by The City of Calgary’s Indigenous Policy, United Way of Calgary and Area’s Elders Institute, and the University of Calgary’s Indigenous Strategy, called *ii’taa’poh’to’p*. To move forward, institutions will need to examine the relationships and connections that prevent them from having trusting relationships with Indigenous communities in a good way.

\*\*“In a good way” is a concept used by many Indigenous peoples to recognize work that is conducted in authentic and meaningful ways, with intention and sincerity, through reciprocal and respectful relationships. It is a demonstration of working with clear purpose and with high levels of integrity, moral strength and communal spirit (University of Calgary, 2018).

Indigenous Phrase or Name	Pronunciation	Origin / Meaning
Niitsitapiipitmiiks	Knee-tsee-dawp-ee-beetmeek-see	Blackfoot: “All my relations”
Tlatá Sinajuna	Tla-ta Sina-juna	Tsuut’ina: “All my relations”
Daguwícawa	Dagoo-wee-tsa-wa	Stoney Nakoda: “All my relations”
Niwahkomakanak	Knee-wa-go-ma-ganuck	Métis/Míchif: “All my relations”
Mohkínstsis	Moe-h-gin-st-sis	Blackfoot: “Confluence/Elbow”
Guts’ists’i	Goo-tsis	Tsuut’ina: “Confluence”
Wícispa Oyade	Wee-chee-spa O-yaw-day	Stoney Nakoda: “Confluence/Elbow”
Otoskwunee	O-toes-kwon-ee	Métis/Míchif: “Confluence/Elbow”
Okí	Oh-key	A Blackfoot friendly greeting
Danit’ada	Dawn-it-ada	Tsuut’ina friendly greeting
Âba Wathec	Umba Wa-stitch	Stoney Nakoda greeting: “Hello, today is a good day and all is well.”
Tawnshi	Dawn-shay	Míchif/ Métis friendly greeting

## Ways of Knowing, Engaging, Building Relationships and Toward Equitable Environments

RESILIENCE IN ACTION (RIA.1)

Canada is embarking on a journey of Truth and Reconciliation to acknowledge the harmful impact of colonization on Indigenous Peoples, and to establish a way forward together.

Calgary City Council approved the Indigenous Policy in 2017 to provide us with the necessary context to understand the complexities and uniqueness of our shared history. The policy helps guide and inform us about our city's true and local history, the traditional lands we live on and how our work as a city continues to impact Indigenous people.

Throughout Resilient Calgary strategy development, Indigenous people have shared their thoughts, ideas and contributions, and have helped shape our strategy actions during our Agenda Setting Workshop, our phase 2 launch, in our collaboration circles and with our steering committee. They have shared their language through prayer and blessings as we walk together in our resilience work. An Elders meeting on December 13th, 2018 had representation from four nations of the Siksikaitsitapi, Kainai-Blood Tribe, Siksika, Piikani and Amskapi Pikuni. The Elders gave their blessing to continue with the work to support the inclusion of Indigenous people in Moh'kinsstsis, the city of Calgary in the planning for the resilience strategy.

Our journey takes another step, together, through the release of the Resilient Calgary strategy. The inclusion pillar embraces the opportunity to continue to build trusting and informed relationships with Indigenous communities in a good way. This includes creating process and spaces for inclusive conversations, and helping to preserve Indigenous cultures and languages. This aligns to the United Nations 2019 declaration as The Year of Indigenous Languages, to acknowledge the importance of Indigenous languages worldwide.






Interconnection is a central belief of many Indigenous people. "All my relations" reflects the awareness that everything in the universe is connected, has a purpose, and is worthy of care and respect.

**"We are all Treaty people. History plays an important role in reconciliation; to build for the future, Canadians must look to, and learn from, the past."**

– Final Report of the Truth & Reconciliation Commission, Volume One: Summary 2015









**Action 2B.1: Support the Revitalization of Indigenous Cultures and Languages**

<p> <b>Why Is This Important?</b></p> <p>We heard from Indigenous Elders and community members that energy needs to be focused on revitalizing Indigenous languages and cultures. They are concerned that their languages and cultures are slowly disappearing. As part of building relationships in a good way, they are asking Calgary institutions to support their efforts to regain their cultures and languages.</p> <p>Languages are a core component of human rights and fundamental freedoms. They play a crucial role in the daily lives of people, allowing them to preserve their history, customs and traditions, memory, unique modes of thinking, meaning and expression, but also to construct their future.</p> <p>Languages play a great role in building inclusive societies. It provides access to information and stimulates innovation. Languages contribute to human development, and are essential to sustainable development, good governance, peace and reconciliation.</p> <p><b>What Will We Do?</b></p> <p>There are current Indigenous language and culture revitalization activities underway. These activities are only the start. Calgary institutions can support this work as informed by Calgary’s Indigenous communities.</p> <p><b>How Will We Do This?</b></p> <p>Building trust with Calgary’s Indigenous Elders, Knowledge Keepers and Peoples is essential to this work. We will continue to develop meaningful relationships with many Indigenous groups in a good way by actively listening to how they want us to support regaining their cultures and languages.</p>	<p> <b>Who’s Involved?</b></p> <p><b>Proposed Lead Organization</b> Indigenous community organizations</p> <p><b>Proposed Partner Organizations</b> Indigenous communities The City of Calgary United Way of Calgary and Area Various community partners and City business units</p> <p><b>With What Proposed Resources?</b></p> <p>Government funding</p> <p><b>When Will We Start?</b></p> <p>2020 Q2</p> <p><b>How Long Will It Take?</b></p> <p>Four years+</p>
<p> <b>Resilience Value</b></p> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Knowledge transfer</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Local identity and culture</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p> </p>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• Indigenous communities have ways to revitalize their cultures and languages.</li> </ul>	

**“Indigenous languages are so important but they are in danger of dying. We need to do something about this. It is a core part of our identity. They connect our younger people to their history, ancestral knowledge and culture. ”**

– Inclusion Collaboration Circle member

**Action 2B.2: Walk Parallel Paths Together in a “Good Way”**

<p> <b>Why Is This Important?</b></p> <p>We heard from Indigenous Protocol &amp; Cultural Technicians that there are different points of view and ways of knowing. In our shared journey with Calgary’s Indigenous communities towards reconciliation, it is up to institutions to respect the perspective of others by walking “parallel paths” and creating an ethical space for authentic conversations. This can lead to the creation of new knowledge based on respectful relations.</p> <p><b>What Will We Do?</b></p> <p>We will work with Calgary’s Indigenous Elders and Traditional Knowledge Keepers to co-create parallel paths/processes. That is, we will look at ways for the oral system and the written system to work together in harmony. These processes will be used by institutions when they develop and implement their policies and practices.</p> <p><b>How Will We Do This?</b></p> <p>We will continually meet with Calgary’s Indigenous Elders and Traditional Knowledge Keepers as a method to break down the barriers we have with our relationships with Calgary’s Indigenous communities. As we build trust with them and learn about their protocols, we can then co-develop institutional processes and policies using the lens of ethical space.</p>	<p> <b>Who’s Involved?</b></p> <p><b>Proposed Lead Organization</b> A public institution</p> <p><b>Proposed Partner Organizations</b> United Way of Calgary and Area The City of Calgary Various community partners and City business units</p> <p><b>With What Proposed Resources?</b></p> <p>The City of Calgary staff United Way of Calgary and Area staff Funding from foundations and orders of government</p> <p><b>When Will We Start?</b></p> <p>Q3 2020</p> <p><b>How Long Will It Take?</b></p> <p>Two years+</p>
<p> <b>Resilience Value</b></p> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Knowledge transfer</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Local identity and culture</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p>  </p>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• Indigenous communities help inform institutional processes.</li> </ul>	

**“Ethical space may not be a familiar term. It is a new concept for the United Way and it is not easy to define. When we work to understand a perspective different from our own, and then examine that understanding with an eye to finding connections with our own perspective, or our own world view, we begin to create an ethical space. The key is to parallel these world views in a way that does not diminish either, and that honours both. This new way, which reflects a deep understanding of varying perspectives and values, can result in an ethical space that transforms the way we work together.”**

– Indigenous Protocol & Cultural Technicians, United Way of Calgary and Area



United Way of Calgary and Area (UWCA) supports an inclusive and resilient city by leading several initiatives. They do this work in collaboration with many stakeholders. These are two of many examples.

### Ethical Space

UWCA first would like to acknowledge the land we are on is traditional land of the Blackfoot Confederacy, as well as Treaty 7 Territory that includes Kainai, Siksika, Piikani, Tsuut'ina and Stoney Nakoda nations. We also would like to acknowledge the Métis people and the Inuit people who made their home here in Calgary.

UWCA has begun work on developing a new Indigenous Strategy. This will enable Indigenous perspectives, knowledge and stories to grow throughout the governance, business and practices of the organization. The strategy will express our goal of becoming an ally, leader and supporter of Indigenous peoples as well as our effort to honour the Truth and Reconciliation Commission (TRC) and the Calls to Action that they brought forward. Reconciliation cannot only involve one group.

UWCA has chosen to involve multiple key stakeholders in the design and development of our Indigenous Strategy. In doing this, we are building an "Ethical Space" which cultivates a sense of security, mutual education and respect of both the Western and traditional ways of knowing, practicing and doing.

A circle of Elders, in consultation with the Indigenous community of Calgary, work together to find the parallels in Western and Indigenous ways of knowing and working together through the strategy. Led by Indigenous Protocol & Cultural Technicians who support and foster authenticity in working with Indigenous communities. This contributes to the development of United Way's capacity to create transformative relationships between Elders and the non-profit sector. By resourcing "in-house" Elders to bring their oral stories and knowledge, and guide internal and external UWCA work, we will contribute to the truth, healing and reconciliation process within our community of influence.

### Council of champions

The Council of Champions is a diverse group of leaders in Calgary dedicated to building the foundations of resilience in children and youth. They aim to inspire action, create a community agenda, and influence policy development and systems-level change to reduce barriers to positive child and youth development. They are committed to the principles of learning, leveraging and influencing together as a collective impact model.



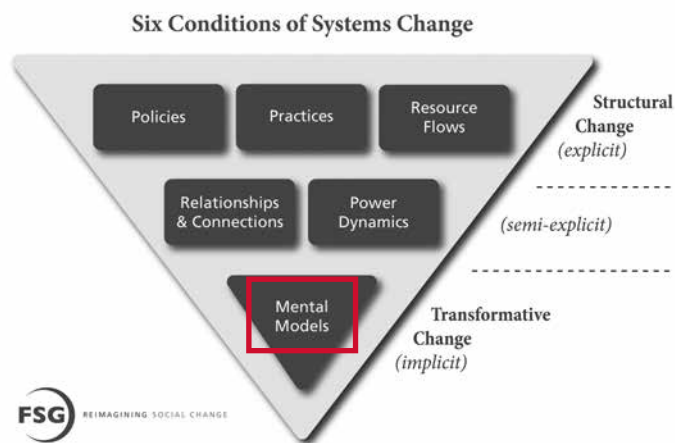
## OUTCOME 2C:

### Calgary institutions value diverse governance paradigms







**Description:** In the development of this outcome, we heard that Calgary’s equity-seeking communities (ESCs) are expected to fit into one governance paradigm that does not represent their different ways of decision-making and leading. This is projected to remain a challenge when strengthening relationships between Calgary’s institutions and ESCs in the future.

ESCs believe that institutions can nurture their relationships with them by “going beyond” creating leadership and board opportunities for ESCs. Communities are tired of having to “fit into” Calgary’s one governance structure. This diminishes the inherent worth of their diverse ways in decision-making and leadership.

Rather than critiquing or challenging characteristics of individual leaders or even leadership styles, ESCs wants us to challenge the processes and structures of boards and institutional leadership. This requires a transformative shift in governance. A change is needed to shift our **mental models** of what good governance looks like from one governance paradigm to a multitude of effective governance paradigms. Institutions would need to broaden their fundamental values, beliefs and practices of effective governance. This would be a bold step forward for institutions to build trusted and informed relationships with ESCs.



Action 2C.1: **Build a Governance Systems Map**

<p> <b>Why Is This Important?</b></p> <p>As a first step in this transformative process to build relationships, equity-seeking communities (ESCs) want institutions to acknowledge the current systemic forces at play. It requires institutions to name the systems that maintain the governance paradigm in Calgary. It is only when institutions see how systems operate in the current governance paradigm, can they expand their mental models of multiple and effective governance paradigms.</p> <p><b>What Will We Do?</b></p> <p>We will develop a communications strategy to reveal to institutions the six conditions that hold our current governance paradigm in place.</p> <p><b>How Will We Do This?</b></p> <p>Guided by the FSG Conditions of Systems Change Framework, we will convene multiple stakeholders to assess how system change conditions are holding our governance in place. This includes exploring the relationships between system actors, the distribution of power and the institutional norms within governance. Once we understand these conditions, we will develop a communications strategy for institutions to understand the systemic forces at play.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead Organization</b> Community collective</p> <p><b>Proposed Partner Organizations</b> Various community partners and City business units</p> <p><b>With What Proposed Resources?</b></p> <p>Foundation funding The City of Calgary: Resilience and Infrastructure staff</p> <p><b>When Will We Start?</b></p> <p>Q2 2021</p> <p><b>How Long Will It Take?</b></p> <p>Three years</p>		
<p> <b>Resilience Value</b></p> <table border="0"> <tr> <td> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Collaboration &amp; empowerment</li> <li>• Decision-making &amp; leadership</li> </ul> </td> <td> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul> </td> </tr> </table>	<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Collaboration &amp; empowerment</li> <li>• Decision-making &amp; leadership</li> </ul>	<p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p>  </p>
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<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• ESCs are part of governance structures that reflect their ways of leading and decision-making.</li> </ul>			

**“Why do we always have to conform to the one dominant view of leadership? Our ways of leading are just as effective. We should be looking for ways for Calgary to open their minds to different kinds of leadership that represent our communities.”**

– Inclusion Collaboration Circle member

## OUTCOME 2D:

### Calgary institutions invest in equitable economic development

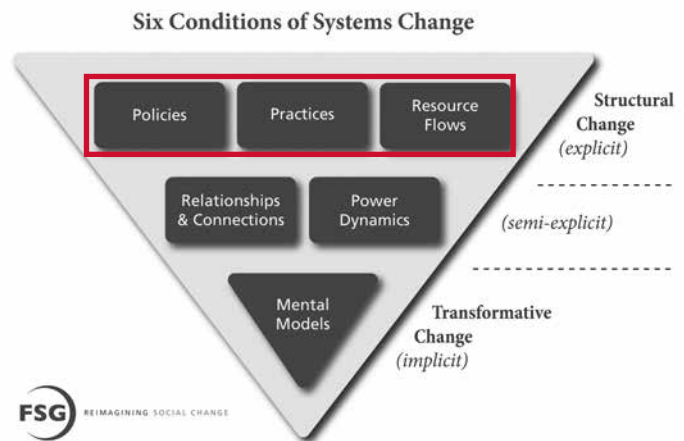
**Description:** In the development of this outcome, we heard that Calgary's equity-seeking communities (ESCs) face barriers to accessing stable and sufficient income. This is projected to remain a challenge when strengthening relationships between Calgary's institutions and ESCs in the future. This is a result of:

1. The current scarcity and future uncertainty of meaningful and desired employment resulting from technology advances.
2. The economic policies and practices that can't keep up with the changes.

We heard from ESCs that institutions can nurture their relationship with ESCs by investing existing resources in more intentional ways to advance equitable economic development. ESCs are asking institutions to be responsive to the fluctuating nature of Calgary's economy that will be impacted by:

1. Increased automation and the adoption of artificial intelligence in workplaces.
2. The changing nature of privacy rights with widespread access to the internet.
3. Online working relationships between institutions and Calgarians.

As a result, ESCs want institutions to consider the social and environmental conditions in their financial and economic decision-making. When institutions invest in diverse markets, they can access otherwise undervalued or untapped assets while prioritizing equitable access to stable and sufficient income for all.

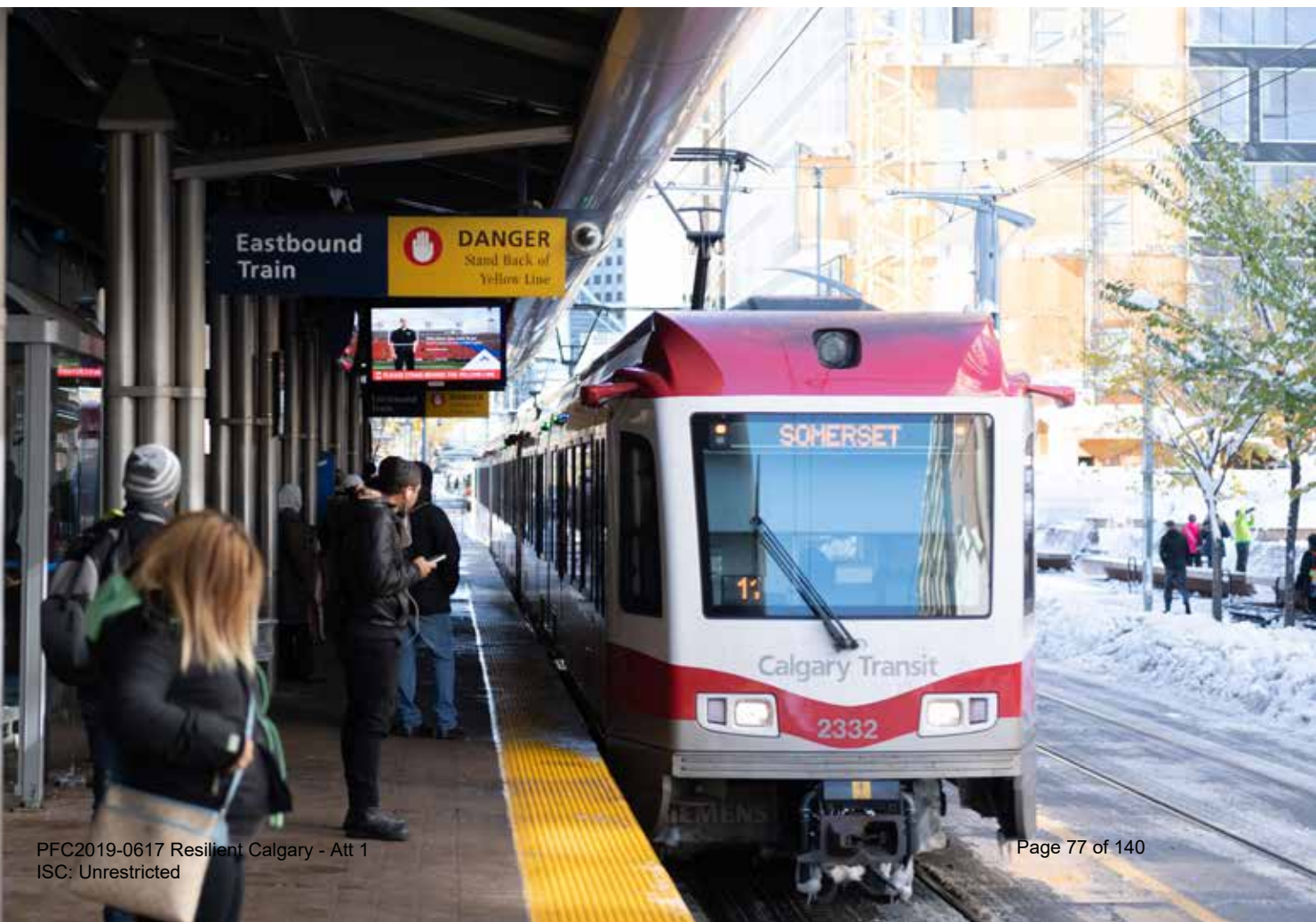


## Enough for All, Calgary's community-driven poverty reduction strategy

RESILIENCE IN ACTION (RIA.14)

To be a truly successful city there must be the opportunity for everyone to participate and enjoy the success. Unfortunately, poverty is the day-to-day reality for more than 120,000 Calgarians. To reduce poverty in a meaningful way it will be necessary for people, community organizations, businesses and government to all come together to take action. The Enough for All strategy provides a framework for this collaborative action to occur. Enough for All focuses on 10 "Levers of Change" to move the needle and provide opportunity for all. In areas that support individuals, to overcome the odds, and in areas of policy and system change, to improve the odds. Work such as innovations and integration of financial coaching models to improve debt management and financial skills to give people the tools they need to be resilient. As well, working with financial institutions to develop new financial products to limit the use of high-interest lenders, that improves access to safe and affordable financial products for everyone. A system that is resilient ensures all Calgarians have the income they need

to thrive and participate in our community. Enough for All supports advocacy for a guaranteed basic income and continued funding for affordable low income transit pass pricing (sliding scale). For more information, please visit [www.enoughforall.ca](http://www.enoughforall.ca).



## Action 2D.1: Encourage Business Investments Addressing Inclusion



### Why Is This Important?

We heard from equity-seeking communities (ESCs) that businesses can build relationships with them if they address social issues as business opportunities. It can enhance the competitiveness of a company while at the same time advancing the economic and social conditions in the communities in which it operates. Businesses meet societal needs through their investments.

More companies are now building and rebuilding business models around social good, which sets them apart from the competition and supports their success. With the help of ESCs, not-for-profits, governments, and other stakeholders, business has the power of scale to create real change on monumental social problems.

### What Will We Do?

We will work with Calgary companies to participate in the Shared Value initiative. This initiative finds business opportunities that contribute to inclusion and social progress. The diagram below shows the model of shared value:

### Shared value



### How Will We Do This?

We will work with the Shared Value Initiative to enable and promote shared-value creation in Calgary by:

- (1) Acting as knowledge brokers.
- (2) Convening key players.
- (3) Changing the risk-reward profile for shared-value opportunities.
- (4) Encouraging more supportive regulatory environments.



### Who's Involved?

**Proposed Lead Organization**  
A private institution

**Proposed Partner Organizations**  
Calgary Economic Development

The City of Calgary: Resilience and Infrastructure Calgary

Various community partners and City business units

United Way of Calgary and Area

### With What Proposed Resources?

Private institution funding

### When Will We Start?

Q4 2020

### How Long Will It Take?

Four years+



### Resilience Value

#### Leadership & Strategy

- Strategies and plans
- Collaboration & empowerment

#### Economy & Society

- Economic linkages

### Benefit to Other Pillars and Shared Theme








### Success Measure:

- ESCs benefit from equitable business opportunities.

**“This initiative excites me the most. Shared value could advance the economic and social conditions in Calgary.”**

– 2019 January 25 #ResilientYYC Workshop theme




## Action 2D.2: Develop a Social Procurement Policy and Strategy

<p> <b>Why Is This Important?</b></p> <p>We heard from equity-seeking communities (ESCs) that Calgary’s municipal government should provide equal opportunities to ESCs in accessing government contracts and business opportunities.</p> <p>Municipalities spend millions of dollars each year on goods and services, from major construction projects to food, supplies, consulting and repairs. This public spending is a valuable lever for fostering more equitable economic development. Through social procurement policies, cities can ensure that underrepresented groups have access to these business opportunities. They can encourage a shift towards procurement based on achieving multiple outcomes in addition to maximizing financial value.</p> <p><b>What Will We Do?</b></p> <p>The City of Calgary will create a Sustainable, Social, Ethical and Environmental Procurement Policy (SSEPP). It will advance the utilization of existing procurement to promote better social, economic and environmental outcomes.</p> <p><b>How Will We Do This?</b></p> <p>A SSEPP Advisory Task Force will be established with representation from The City, local business, industry and community to support SSEPP design, implementation, and evaluation. The project team will explore implementation options and initiate pilot projects to test and design the inclusion of more small, medium-sized businesses and social enterprises into direct procurement opportunities and into the supply chain of major contractors. They will use an outcomes-based measurement and reporting process aligned with existing City of Calgary policy, programs and strategies.</p>	<p> <b>Who’s Involved?</b></p> <p><b>Proposed Lead Organization</b> The City of Calgary: Supply Management</p> <p><b>Proposed Partner Organizations</b> The City of Calgary: Resilience and Infrastructure Calgary</p> <p>The City of Calgary: Calgary Neighbourhoods</p> <p>Various community partners and City business units</p> <p><b>With What Proposed Resources?</b></p> <p>Current municipal funding through the Budget Savings</p> <p><b>When Will We Start?</b></p> <p>Q4 2018</p> <p><b>How Long Will It Take?</b></p> <p>Three years</p>		
<p> <b>Resilience Value</b></p> <table border="0"> <tr> <td> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Strategies and plans</li> <li>• Collaboration &amp; empowerment</li> </ul> </td> <td> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Economic linkages</li> </ul> </td> </tr> </table>	<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Strategies and plans</li> <li>• Collaboration &amp; empowerment</li> </ul>	<p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Economic linkages</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p> </p>
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<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• ESCs access local government business opportunities.</li> </ul>			

**“We should look at how our government can be fair in giving contracts. Businesses owned by immigrants, Indigenous people and other people from under-represented communities should have the chance to get government contracts. But it’s hard to compete with those larger companies who have access to more funding and are better connected with bureaucrats.”**

– 2018 SME community conversation

Action 2D.3: **Explore Guaranteed Universal Basic Income Options**

 <b>Why Is This Important?</b>	 <b>Who's Involved?</b>
<p>We heard from equity-seeking communities (ESCs) that they are concerned with the impacts of the fourth industrial revolution. They are worried that the technological changes, such as increasing automation and digitalization will have a transformative impact on the world of work. These changes could lead to a jobless future and be a source of new income inequities. ESCs are asking institutions to seriously consider how people will survive with this uncertain future.</p> <p><b>What Will We Do?</b></p> <p>We will develop a policy brief that explores options in guaranteed universal basic income in Calgary. This brief will also detail the feasibility to implement these options.</p> <p><b>How Will We Do This?</b></p> <p>We will do an environmental scan on the current work that is being done in this area. We will also meet with stakeholders who are currently engaged in this work to understand their recommended options. Then we will work together to learn the challenges, benefits and opportunities in each of these options.</p>	<p><b>Proposed Lead Organization</b> A community collective</p> <p><b>Proposed Partner Organizations</b> Various community partners and City business units</p> <p><b>With What Proposed Resources?</b></p> <p>The City of Calgary: Resilient Calgary staff Foundation funding</p> <p><b>When Will We Start?</b></p> <p>Q1 2019</p> <p><b>How Long Will It Take?</b></p> <p>Two years</p>
 <b>Resilience Value</b>	<b>Benefit to Other Pillars and Shared Theme</b>
<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Access to finance</li> </ul>	<p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Local economy</li> </ul>
<p><b>Success Measures:</b></p> <ul style="list-style-type: none"> <li>• ESCs access resources that promote income security.</li> </ul>	

**“I believe the exploration of a basic income and its feasibility would support the expression of income security rights as the economy transitions. I believe there is also strong connection to the economic focus area.”**

– What We Heard report, 2019 Resilient Calgary Summary of input





## PILLAR 3



# The Future of Calgary's Natural Infrastructure

### GOAL

Natural infrastructure assets are identified, protected, tracked, managed and used to inform investment and planning decisions.



## Overview

# Resilience of a city, its communities and region are improved when integrated systems are in place to conserve, enhance and maintain our natural assets.

Calgary has, and is surrounded by, natural beauty. Environmental spaces such as parks, water bodies and riparian areas abound. They are not just beautiful park spaces, but part of our natural infrastructure that provide multiple benefits. As Calgarians, we enjoy the municipal services as well as the social, economic and environmental advantages these spaces provide. These benefits are many. Natural infrastructure can provide recreational opportunities, contribute to our physical and mental well-being, reduce water treatment needs, reduce the impacts of flooding, improve air quality, reduce the urban heat island effect, provide wildlife habitat and more.

Currently, however, our natural assets are not protected and managed with the same coordinated approach as our other infrastructure assets. In Calgary, we have an opportunity to integrate natural infrastructure into our traditional infrastructure and asset management frameworks. A shared understanding of the value of natural infrastructure and the multitude of services they provide can assist decision-makers in making choices related to resource allocation and natural infrastructure investments.

As part of this pillar we will include natural infrastructure as part of our corporate asset management framework and measure their service value to inform investment and planning decisions.

This will be achieved through three focused themes:

- Learning through awareness of our key natural infrastructure and the role they play in contributing to city resilience.
- Valuing through analysis of the services and multiple benefits they provide to inform decision-making processes and reporting.
- Building through action by integrating our learning and analysis into City and regional policy and implementation projects.

These focused themes are further defined in the following three outcomes and six actions. They are as follow:

<p><b>Outcome 3A</b></p> <p><b>Calgarians are aware of our key natural infrastructure and its role in providing community benefits.</b></p> <p><i>Action 3A.1</i> Natural Infrastructure Awareness materials shared with different audiences to increase our understanding of the role of natural infrastructure.</p> <p><i>Action 3A.2</i> Natural Infrastructure Inventory created to identify our key natural assets relied upon by Calgarians to deliver services.</p>	<p><b>Outcome 3B</b></p> <p><b>Calgarians are supported through sound analysis of natural infrastructure value that informs decision-making.</b></p> <p><i>Action 3B.1</i> Natural Infrastructure Valuation Toolkit adopted to support integrated and informed planning, management and investment decisions.</p> <p><i>Action 3B.2</i> Natural Infrastructure Integration into City of Calgary land, asset management and financial reporting processes.</p>	<p><b>Outcome 3C</b></p> <p><b>Calgarians are supported through strategic investment in natural infrastructure.</b></p> <p><i>Action 3C.1</i> Policy Integration to align and embed natural infrastructure into current and new relevant policy.</p> <p><i>Action 3C.2</i> Implementation Support to develop design criteria and pilot a collaborative approach to innovative and strategic natural infrastructure investments.</p>
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### Value Proposition

- Focused on a multiple benefit rather than single purpose infrastructure.
- Focused on community quality of life while enhancing long-term infrastructure resilience and managing our resources well.



### Linkages to other Resilient Calgary Pillars



#### The Future of Calgary's Economy:

investment in natural assets can reduce future risk and avoid cost, natural assets can help make the city more attractive to live and work and therefore attract investment.



#### Inclusive Futures: natural assets

can provide spaces to help advance inclusivity within the city and also support physical and mental well-being.



#### The Future of Calgary's Natural Infrastructure:

natural assets can provide solutions to capital infrastructure challenges and offset future infrastructure capital and maintenance costs.



#### Future-Focused Calgary: cities need

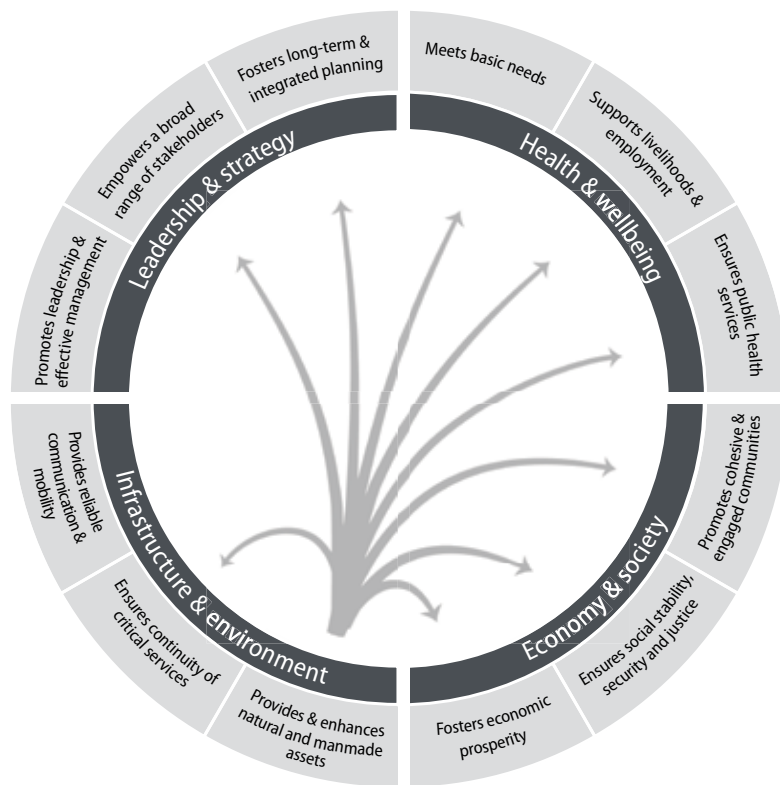
healthy natural assets to survive and thrive. Shared tools will help identify the return on investments of these assets.



### Our Journey

With the help of resources from 100 Resilient Cities, The City of Calgary embarked on an effort to identify opportunities to further incorporate natural infrastructure into City-wide decision-making. The discovery area was co-led by the Climate Program in Environment and Safety Management and supported by a core project team of City business units. Further insight was provided by a broader collaboration circle that included non-governmental organizations, academia, education, industry, First Nations and the provincial government.

The 100RC resources included an opportunity to work with AECOM and Earth Economics as our Strategy and Platform Partners. They each produced reports to help guide the actions in this pillar. A highlight for their findings can be found in Resilience in Action stories (R1A.18 Dale Hodges Park: A Natural Infrastructure Case Study by AECOM and R1A.19 An Earth Economics Natural Infrastructure Blueprint for Calgary).



“Building Resilience with Nature: A Practitioner’s Guide to Action report” published by 100RC in November 2018

Natural infrastructure provides a broad range of services and benefits to Calgarians and makes our city more attractive to live and work in. It can improve resilience to the gradual and sudden impacts of climate change. Healthy natural systems are self-adapting and require less intervention to thrive in changing conditions than more traditional hard infrastructure. It provides a foundation for a robust and healthy environment that is needed not only for us to survive, but to have a thriving economy and society. We know this from our experience with the 2013 Flood and the real costs of response and recovery.

The image above illustrates the connection between benefits provided by our natural assets to city resilience. It communicates the multiple resilience benefits of healthy natural assets to our health and well-being, our economy and society and city leadership and strategy. A key focus of this pillar is to understand and measure these benefits to inform decisions.

The role of natural infrastructure is increasingly recognized as a contributor to managing flood risk and the provision of services from other municipalities and institutions. A November 2018 report published by 100RC notes that “Nature and natural infrastructure are critical assets in strengthening cities’ resilience to a broad range of resilience shocks and stresses — and a failure to protect or enhance them is a missed opportunity to unlock the economic, health and social dividends that strengthen our cities’ ability to thrive no matter what happens.” The report further outlines considerations for cities to leverage nature-based solutions.

Another report published by the Canadian Council of Ministers of the Environment indicates that “Natural infrastructure practices have the potential to play a critical role in making coastal, riverine, rural and urban communities more climate resilient.” According to The Insurance Bureau of Canada, “As a general ‘rule of thumb’, in order of preference, the most cost-effective means to mitigate flood losses utilizing natural systems is to:

- (i) Retain what you have.
- (ii) Restore what you’ve lost.
- (iii) Build what you must.

It is our intent that the actions under this pillar will provide the vision and tools for Calgary to protect our existing key natural assets, restore and enhance others, and build new natural infrastructure that will contribute to a resilient Calgary, for generations to come.

### Nature as a Community Asset

Calgary has recently experienced severe and uncommon weather events, indicative of the long-term changes in our local climate that will continue to bring more frequent and severe droughts, floods and storms. The City of Calgary has dedicated a team to facilitate corporate, citizen and business actions to mitigate and adapt to the impacts of climate change, guided by Calgary's Climate Resilience Strategy that was adopted by Council in 2018. Strategies are actioned by a multi-stakeholder Climate Panel to develop and build a collaborative force to achieve resilience. Community members, organizations, businesses and The City of Calgary are coming together with shared goals to take local climate action.

Climate mitigation is a commitment to reducing the production of greenhouse gases. Actions are underway, including sustainable transportation options such as increased access to electric vehicle charging stations, developing a commercial energy benchmarking program and using renewable energy in City operations.

Calgary is also taking on climate adaptation based on the risks we've identified, such as increased heat days, flooding, and more intense storms. Adaptation actions include updating design standards and guidelines for City infrastructure and recognizing natural infrastructure as a critical component to a resilient city. Incorporating the assets and key services provided by natural infrastructure into the overall City asset management process will be the next step in valuing the innumerable benefits provided by natural infrastructure.

Calgarians enjoy our natural spaces on a daily basis, and these assets can also serve an important function in urban climate change adaptation. Taking care of what we have and building our natural infrastructure is helping Calgary become a more resilient community.









## OUTCOME 3A:

### Calgarians are aware of our key natural infrastructure and its role in providing community benefits

**Description:** This outcome supports our learning to understand the natural assets that Calgarians rely upon to deliver services and other benefits. We will identify our key natural assets and the services they provide and add them as a new asset class within our corporate asset management framework. As well, we will create a common vocabulary for natural infrastructure and related terms and share this information with various audiences. Audiences include The City of Calgary and the City Council, the general public and external partners in academia, industry and non-governmental organizations. We will work together and build on current awareness and education programs to align and build a common understanding of the role of natural infrastructure in contributing to city resilience and our community well-being.



## Action 3A.1: Natural Infrastructure Awareness

<p> <b>Why Is This Important?</b></p> <p>A shared understanding of the value of natural infrastructure as well as the municipal services and other co-benefits that they provide can help us to recognize our role in protecting and enhancing our natural assets for future generations.</p> <p><b>What Will We Do?</b></p> <p>We will support the development of awareness and education materials to help different audiences understand the relationship between natural infrastructure and city resilience, their role, and opportunities to enhance our natural infrastructure including on private lands by landowners themselves. We will shepherd and enable key messages and alignment between current and planned education and awareness projects and programs such as work underway within Environmental &amp; Safety Management, Water Resources, Parks as well as with related work led by the partners external to The City of Calgary.</p> <p><b>How Will We Do This?</b></p> <p>We will identify current state and assess opportunities and gaps for holistic awareness and education regarding what natural infrastructure is and the reason why it is important, the services provided, the broader value it brings, actions being taken by The City and others, and its role in our collective future.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead Organization</b> The City of Calgary: Environment &amp; Safety Management</p> <p><b>Proposed Partner Organizations</b> Other City of Calgary Business Units/Services</p> <p>Community partners with an interest and role in environmental education are also key to this initiative</p> <p><b>With What Proposed Resources?</b></p> <p>City of Calgary staff Others through community partners</p> <p><b>When Will We Start?</b></p> <p>Q3 2019</p> <p><b>How Long Will It Take?</b></p> <p>Two years to develop and ongoing to implement and revise.</p>
<p> <b>Resilience Value</b></p> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Education</li> <li>• Public risk awareness</li> <li>• Communication between government and public</li> <li>• Knowledge transfer and best practice sharing</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Community participation</li> <li>• Local identity &amp; culture</li> </ul> <p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Environmental policy</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p></p>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• City of Calgary and external stakeholder awareness, and understanding of natural infrastructure increase over time.</li> </ul>	

**“Promoting environmental education, promoting environmental initiative and action to help maintain a healthy environment for future generations.”**

– What We Heard report, 2019 Resilient Calgary Summary of input

**“Calgary needs to support the citizens in reducing their environmental impact and societal impact.”**

– What We Heard report, 2019 Resilient Calgary Summary of input



## The 2014 Calgary Tree Disaster

Calgary's weather is notoriously unpredictable. On Sept. 9-10, 2014, the largest September snowfall in 130 years before the fall equinox occurred.

The big problem was Calgary's trees still had all their leaves. The weight of heavy, wet snow snapped trees citywide. Many roads and pathways were impassible because of fallen trees and broken branches. Hanging tree limbs meant public safety hazards, especially near sidewalks, schools, businesses and public spaces.

Within three days, over 33,000 calls from citizens to 3-1-1 and 9-1-1 stretched City resources. These were the most calls for help The City has ever had (even surpassing the June 2013 flood). The Calgary Fire Department responded to more than 3,100 storm-related events. Calgary Parks had 10,000 tree emergency service requests (five times more than it usually gets in an entire year). More than 50,000 ENMAX customers lost power due to branches falling on wires, poles, etc. The power outages took out traffic signal lights at major intersections throughout the city.

In response to "Snowtember" and its path of destruction, Calgary's Emergency Operations Centre (EOC) was activated early into the storm due to the extraordinary 9-1-1 and 3-1-1 call volumes. Calgary's EOC agencies partnered with crews from Alberta Environment and Sustainable Resource Development, Canada Task Force 2, EPCOR and The City of Edmonton.

The EOC deactivated after clearing streets, removing the most-pressing public safety hazards and restoring normal service levels. After that, the response phase shifted to the Parks Tactical Operations Centre (TOC) and continued with City and provincial agencies assessing and pruning 14,000 tree hazards. As well, City business units worked systematically to remove 19,000 tonnes of tree debris from 227 communities.

Recovery and restoration phases in 2015-17 delivered the ReTree YYC strategy, aimed at building a more resilient urban forest. ReTree's successful results included:

- Inspecting and pruning 357,000 public trees citywide.
- Planting almost 25,000 trees to help replace those lost in the storm.
- Engaging and empowering 79 communities to plant and care for trees in their neighbourhoods.
- Improving citizens' access to tree care information through online courses, social media and various outreach initiatives.

A key learning from the ReTree YYC resiliency program was the importance of a robust tree pruning program. By pruning more public trees in 2019-22, Urban Forestry is forecasting a decrease in 3-1-1 tree emergency.



## Action 3A.2: Natural Infrastructure Inventory



### Why Is This Important?

The City does not have a consistent inventory approach and natural assets (such as rivers and riparian areas) are not included as part of our corporate land inventory or asset management frameworks. This lack of visibility from a corporate perspective puts their protection, enhancement, maintenance at risk.

### What Will We Do?

We will create a corporate inventory of key natural assets. We will formalize and describe a new natural asset class in the asset management policy, strategy, objectives, and corporate asset management plan. This will set the stage for natural assets to be identified and visible in corporate databases and to be included in infrastructure reporting.

### How Will We Do This?

We will work with our current asset management specialists and asset owners to create a centralized natural infrastructure inventory of key natural assets.



### Who's Involved?

**Proposed Lead Organization**  
City of Calgary: Corporate Analytics and Innovation

**Proposed Partner Organizations**  
Other City of Calgary Business Units/Services such as Parks, Water Resources and Resilience and Infrastructure Calgary

### With What Proposed Resources?

City of Calgary staff

### When Will We Start?

Q3 2019

### How Long Will It Take?

18 months



### Resilience Value

#### Infrastructure & Environment

- Ecosystem management
- Environmental policy flood risk management
- Maintenance of assets

#### Economy & Society

- Inward investment

#### Leadership & Strategy

- Government alignment
- Strategies & plans
- Building codes & standards
- Land-use and development
- Multi-stakeholder alignment
- Decision-making and leadership



### Benefit to Other Pillars and Shared Theme

### Success Measure:

- Natural assets are included as a new asset class and identified within relevant corporate asset management documents.

**“All of the greenspaces and parks in the city; they help to make quality of life for people better.”**

– Citizen Satisfaction Focus Groups, Fall 2017

**“It should be obvious that trees provide many benefits such as oxygen and habitat. They are more than just nice to have and are important to health as well.”**

– What We Heard report, 2019 Resilient Calgary Summary of input

**“We chose to live here in the NW because of the amenities to support quality of life. We are close to COP for skiing, recreation centres, Nose Hill park, pathways for jogging and biking. It’s all close by.”**

– Citizen Satisfaction Focus Groups (Spring Pulse), Spring 2017

## Bee Friendly Boulevard – Helping pollinators, educators and reducing road maintenance

RESILIENCE IN ACTION (RIA.17)

Things are buzzing along Canyon Meadows Boulevard these days. Staff from across The City, along with partners from around Calgary, created a natural infrastructure project that will not only reduce maintenance in the area, but also create a home for pollinators such as bees and butterflies and provide educational opportunities for local schools.

This pollinator-friendly corridor runs from Macleod Trail to Bow Bottom Trail and features native flowers, grasses and shrubs and nesting habitats including a log that visitors can open to see bees working, a bee hotel, and informational signs. A main bee bed — designed in the shape of a flower — has been built near Acadia Drive S.E. and Canyon Meadows Drive S.E. and several schools came out to help plant flowers around the bed.

Staff from The City worked together with individuals from the University of Calgary, Mount Royal University and the David Suzuki Foundation on the project. Researchers from the University of Calgary will continue to monitor the bee population to see if the number of species increases in the area.

The site incorporates re-purposed and recycled materials and was created with the involvement of over 300 students to plant milk weed for monarch butterflies. The materials used include logs for a bee nest from trees that were removed from a local golf course, as well as recycled concrete and sandstone boulders from road construction.

The Bee Friendly Boulevard project is a great example of a natural infrastructure project that delivers value to Calgarians in a unique way.

In early 2019, an endangered bee species was found on the site — a Gypsy Cuckoo Bee or *Bombus bohemicus*. Talk about buzz!









### **OUTCOME 3B:**

#### **Calgarians are supported through sound analysis of natural infrastructure value that informs decision-making**

**Description:** Natural or ecological systems provide social, economic and environmental benefits. They support our physical and mental well-being and can contribute to a robust economy, in part by making the city more attractive to a skilled workforce and investment. This outcome supports valuing our natural infrastructure through sound analysis of the services and multiple benefits that natural infrastructure provides in order to inform decision-making and corporate reporting. Having a shared understanding of the value of natural infrastructure and the municipal services and other co-benefits they provide can assist with the prioritization of decisions related to planning and development, resource allocation and natural infrastructure investments.

Action 3B.1: **Natural Infrastructure Valuation Toolkit**

 <b>Why Is This Important?</b>	 <b>Who's Involved?</b>
<p>Current City processes do not fully account for the services and benefits provided by natural infrastructure in development and investment decision-making. This action will create decision criteria that takes into account the service value, as well as the environmental, social, economic and health benefits of natural infrastructure and embed them into City of Calgary infrastructure investment processes. This also aligns with the Climate Lens (climate resilience assessment) as required by Infrastructure Canada for certain funding requests.</p> <p><b>What Will We Do?</b></p> <p>We will identify and test valuation tools that measure the services as well as the broader environmental, social and economic resilience benefits provided by natural infrastructure for applicability to Calgary's unique environment. As part of this we will consider current and future risk, co-benefits of natural infrastructure, natural asset connectivity and the long-term ecological function of the infrastructure in the full lifecycle of projects. This could include creating or informing a business case for natural infrastructure return-on-investment.</p> <p><b>How Will We Do This?</b></p> <p>We will build from our understanding of the triple bottom line, social return on investment and the resilience dividend (in development), and the valuation tools currently being used in Water Resources and Parks to manage their assets, as well as the capital business case used in Infrastructure Calgary. We will collaborate with our community partners — in academia, non-governmental organizations and industry to identify, test and monitor valuation tools. Finally, we will consolidate our learning into a valuation toolkit, with recommendations and guidance for its use.</p>	<p><b>Proposed Lead Organization</b> The City of Calgary: Environment and Safety Management</p> <p><b>Proposed Partner Organizations</b> Other City of Calgary Business Units/Services</p> <p>Community partners with experience and expertise in natural infrastructure of ecosystem services valuation are also key to this initiative</p> <p><b>With What Proposed Resources?</b></p> <p>City of Calgary staff</p> <p>Others through community partners and academic institutions such as the University of Calgary</p> <p><b>When Will We Start?</b></p> <p>Q2 2019</p> <p><b>How Long Will It Take?</b></p> <p>Two years to develop and ongoing to implement and revise.</p>
 <b>Resilience Value</b>	<b>Benefit to Other Pillars and Shared Theme</b>
<p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Ecosystem Management</li> <li>• Maintenance of assets</li> <li>• Environmental policy</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• City budgets, inward investment</li> </ul> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Multi-stakeholder alignment</li> <li>• City monitoring &amp; data management</li> </ul>	
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• A valuation toolkit is adopted to help with the assessment of natural infrastructure investment and planning options.</li> </ul>	

- “Triple bottom line analysis should be submitted and evaluated on all construction projects within the city. When your administration is making a decision or recommendation on a project, they should be armed with a complete view.”**

– What We Heard report, 2019 Resilient Calgary Summary of input
- “Consider environmental resilience and importance of natural assets when evaluating ideas ... which do not support or enhance social or environmental resilience.”**

– What We Heard report, 2019 Resilient Calgary Summary of input

## Dale Hodges Park: A Natural Infrastructure Case Study by AECOM

For decades The City of Calgary has explored how to integrate engineered and natural or green infrastructure, and leverage the social, economic and environmental benefits of municipal services. One compelling example is Dale Hodges Park.

The City of Calgary's acquisition of the former Klippert gravel pit presented an outstanding opportunity to restore the ecological integrity of the area, while at the same time enhancing the recreational and educational value of the east side of Bowmont Park. The park, named for former Calgary Alderman Dale Hodges, includes stormwater wetlands, wildlife habitat, trails for cycling and walking, and lookout points across the scenic river valley.

The site was originally acquired solely for parkland purposes and was intended to be restored to natural habitat. However, it became apparent that a number of other issues could be meaningfully addressed. Some of the considerations were:

### Issues

- Untreated stormwater threatens the ecological health of the Bow River and specifically fish habitats.
- High risk of industrial contamination of the Bow River during flooding or major storms – the former Klippert gravel pit contained concentrations of industrial waste and hydrocarbons.
- Limited recreational and park areas lead to erosion of embankments and other paths.

### Opportunities

- Location and size of the site posed a unique opportunity to restore a disturbed gravel pit landscape into a natural environment with biodiversity, recreational and educational potential.
- Opportunity to bring an innovative stormwater treatment solution into public focus.
- Opportunity to incorporate public art into the design of stormwater treatment wetlands and its associated hard infrastructure in a way that added to the existing natural landscape context.
- The project could be co-developed by Water Resources and Parks.
- Community stakeholder support for the protection of natural habitat, recreational trails, and the stormwater design.
- Realization of social, economic, environmental and resilience benefits.





The Dale Hodges Park is a key example of how Natural Infrastructure assets can be identified, protected, enhanced, monitored and managed as part of The City of Calgary's asset management portfolio. This helps to demonstrate how the multiple benefits (economic, environmental, social and resilience) benefits can be understood and used to inform capital investment and planning decisions. As part of the Resilient Calgary strategy, a recommendation is to use a business case template to integrate and normalize this approach to natural infrastructure decision-making.

### The Quadruple Bottom Line Assessment of Natural Assets

The Water Research Foundation identified examples of the social, economic and environmental benefits of natural or green assets as shown below. The City of Calgary can consider adding a criterion for resilience when assessing natural assets. Including the assessment of Resilience adds another layer to the Triple Bottom Line (TBL), resulting in a Quadruple Bottom Line (QBL) analysis, as illustrated.

Social	Economic	Environmental	Resilience
<ul style="list-style-type: none"> <li>• Reduced heat stress and associated health benefits</li> <li>• Improved recreational opportunities</li> <li>• Greater flood protection</li> <li>• Increased property values</li> <li>• Green job creation</li> </ul>	<ul style="list-style-type: none"> <li>• Asset life extension</li> <li>• Energy savings</li> <li>• Avoided infrastructure costs</li> </ul>	<ul style="list-style-type: none"> <li>• Improved air and water quality</li> <li>• Groundwater recharge</li> <li>• Improved habitat/ecosystem benefits (wetlands)</li> <li>• Decreased GHG emissions</li> </ul>	<ul style="list-style-type: none"> <li>• Reflective</li> <li>• Resourceful</li> <li>• Inclusive</li> <li>• Integrated</li> <li>• Robust</li> <li>• Redundant</li> <li>• Flexible</li> </ul>

## Action 3B.2: Natural Infrastructure Integration into City Processes

<p> <b>Why Is This Important?</b></p> <p>Natural infrastructure assets are among Calgary’s most valuable assets, delivering City services and supporting community well-being. This action will embed the natural asset inventory into our corporate land and asset management processes and enable natural assets to be integrated into financial planning and managed through a Corporate service outcome and risk-based lens.</p> <p><b>What Will We Do?</b></p> <p>We will assess existing programs to track and monitor natural assets and build upon the natural infrastructure awareness, inventory and valuation toolkit actions to integrate natural infrastructure into Corporate processes. Natural assets will be embedded and referenced in business unit asset management plans and reported in the Infrastructure Status Report. We will create a place in our Land Inventory Data Application (LInDA) for natural infrastructure to be identified and enable an environment to integrate natural assets into financial administration support and reporting activities over the long-term.</p> <p><b>How Will We Do This?</b></p> <p>We will work with our land and asset management specialists to add natural assets to business unit asset management plans and our corporate land inventory as well as our financial team for future integrated financial planning.</p>	<p> <b>Who’s Involved?</b></p> <p><b>Proposed Lead Organization</b> The City of Calgary: Business units, with corporate asset reporting led by Corporate Analytics and Innovation.</p> <p><b>Proposed Partner Organizations</b> City of Calgary land stewards and other City of Calgary Business Units/Services including Real Estate &amp; Development Services, Finance, Law, Environmental &amp; Safety Management, and Resilience and Infrastructure Calgary</p> <p><b>With What Proposed Resources?</b> City of Calgary staff</p> <p><b>When Will We Start?</b> Q1 2021</p> <p><b>How Long Will It Take?</b> 18 months with adjustments in response to related regulatory changes</p>
<p> <b>Resilience Value</b></p> <p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Ecosystem Management</li> <li>• Environmental Policy</li> <li>• Land use and infrastructure assets</li> <li>• Maintenance of assets</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• City budgets, inward investment</li> </ul> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Government alignment, Decision-making and leadership</li> <li>• Multi-stakeholder alignment</li> <li>• Land-use and development</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p></p>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• The new natural asset class is recognized by Council and is included in corporate asset reporting.</li> </ul>	

**“Enhance children’s programming at City sites to focus on teaching kids about importance of environmental resilience. Consider environmental resilience in decision-making.”**

- What We Heard report, 2019 Resilient Calgary Summary of input

**“Building code has come a long way in the past few years, but I believe stronger regulation on the impact of the building on the environment and community is required.”**

- What We Heard report, 2019 Resilient Calgary Summary of input

## An Earth Economics Natural Infrastructure Blueprint for Calgary

The City of Calgary is well prepared to become a leader in utilizing nature to build economic and community resilience. **Natural infrastructure is real infrastructure** that can be combined with, or used in place of, grey infrastructure to provide vital services, often at lower cost and improved performance as compared with pure grey infrastructure solutions. The City can take steps to apply academic research, best practices, and lessons learned from cities around the world to fully integrate natural infrastructure concepts and opportunities broadly into budgeting, project development and long-term stewardship of The City's resources.

This Natural Infrastructure Blueprint for The City of Calgary outlines four tangible steps that represent a cycle of awareness building, analysis and policy/procedure development. With long-term commitment, The City can produce innovative solutions to its existing and pending challenges, and be a role model and resource to other large cities around the world in fostering long-term resilience. The steps are as follows:

### STEP 1

#### Create Inventory

Create a detailed and dynamic inventory of Calgary's natural assets. Without a full understanding of The City's natural assets and the many physical and financial benefits provided to the local community, planners will be making decisions with partial data, putting outcomes at risk and elevating costs.

### STEP 2

#### Raise Awareness and Set Targets

Build awareness and set bold targets for natural infrastructure's role in Calgary's future. Thoughtful targets can spur innovation, build public support, and create a vision. The City has an opportunity to refine existing targets and create new ones to focus the work and energy of all stakeholders on supporting The City's reliance on natural infrastructure over the next 100 years.

### STEP 3

#### Invest and Implement

Gather funding partners (City, private sector, other orders of government etc.) and implement a portfolio of projects. Natural infrastructure projects often require more creativity and collaboration to fund and implement than traditional grey infrastructure projects. This is an opportunity to bring City departments together with their stakeholders to define and explore new ways of working together.

### STEP 4

#### Monitor outcomes

Monitor the performance and outcomes of natural infrastructure to inform the next phase of planning and investment. This type of work is often new and challenging. As with any new field, there will be successes and shortfalls. Implementing a strong process to glean and apply lessons learned is vital to the efficiency, cost and overall success of the initiative over time. While the steps themselves are simple in concept, success requires serious focus and a commitment of funds and staff over time. They are summarized in the figure below.






## OUTCOME 3C:

### Calgarians are supported through strategic investment in natural infrastructure

**Description:** Current City processes do not fully account for the benefits of natural infrastructure in development and investment decision-making. The City also does not have a consistent policy or operations and maintenance approach putting their long-term planning and maintenance at risk. This outcome will support building through action by integrating our learning and analysis into City and regional policy and implementation projects. An identified opportunity is to establish an integrated approach to natural infrastructure management and decision-making as part of The City's ongoing capital investment, planning and asset management processes. As well, this outcome will support integrated decisions and operations and maintenance for natural infrastructure investments on school sites such as school site naturalization projects.



## Action 3C.1: Natural Infrastructure Policy Integration

 <b>Why Is This Important?</b>	 <b>Who's Involved?</b>
<p>Natural infrastructure is currently absent or not consistently recognized in City and regional policy. This will help us align policy in our Municipal Development Plan, Corporate Environmental Policy, Regional Growth Strategy and related strategies and plans, and take into account changes in legislation related to environmental well-being, climate change and shared regional services.</p> <p><b>What Will We Do?</b></p> <p>Identify alignment and gap areas in the Planning &amp; Development planning continuum and Corporate Policy with regard to natural infrastructure. As a component of policy plan updates or new policy at The City of Calgary, embed reference to natural infrastructure where it is relevant and currently absent. As a component of new regional policy development, recommend the integration of policies that support natural infrastructure and resilience to the Calgary Municipal Regional Board (CMRB) Growth Plan and Servicing Plans.</p> <p><b>How Will We Do This?</b></p> <p>This initiative will have three focus areas: Planning &amp; Development, Corporate Policy, and Regional Policy. Working with policy leads, align with current time frames for policy review and the creation of new policy. Identify gap areas regarding natural infrastructure in existing policy and opportunities to include natural infrastructure in new policy development.</p>	<p><b>Proposed Lead Organization</b> The City of Calgary: Calgary Growth Strategies for Planning &amp; Development, Environmental &amp; Safety Management for Corporate, Intergovernmental &amp; Corporate Strategy for Regional Policies.</p> <p><b>Proposed Partner Organizations</b> Other City of Calgary Business Units/Services</p> <p><b>With What Proposed Resources?</b> City of Calgary staff</p> <p><b>When Will We Start?</b> Q3 2019</p> <p><b>How Long Will It Take?</b> Ongoing</p>
 <b>Resilience Value</b>	<b>Benefit to Other Pillars and Shared Theme</b>
<p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Ecosystem Management</li> <li>• Environmental policy</li> <li>• Flood risk management</li> </ul>	<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Government alignment</li> <li>• Strategies &amp; plans</li> <li>• Building codes &amp; standards</li> <li>• Land-use and development</li> <li>• Multi-stakeholder alignment</li> <li>• Decision-making and leadership</li> </ul>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• Natural infrastructure is integrated into all relevant new or amended related City of Calgary and regional policy.</li> </ul>	

**“We should have a better relationship with the way our city interacts with land and communities outside our city limits; just because it’s outside our limits doesn’t mean it doesn’t affect us. And it also isn’t limited to water use.”**

– What We Heard report, 2019 Resilient Calgary Summary of input

**“It’s the natural assets — they are a key element for most who live in Calgary, especially with the mountains in our back yard.”**

– Citizen Satisfaction Focus Groups (Spring Pulse), Spring 2018

**“The idea of resiliency is a good first step in the way that we appreciate the environment.”**

– What We Heard report, 2019 Resilient Calgary Summary of input

Ensuring a healthy, secure food supply requires a resilient food system that can adapt to both natural and human-made shocks and stressors posed by climate change, rapid urbanization, economic crises and other factors. A resilient food system can bounce back from disruptions in each link in the food supply chain, from farm to fork. People with low incomes, residents of food deserts, people with disabilities, seniors and people experiencing homelessness may be most at risk of losing access to safe and nutritious food during and after a disaster.

The CalgaryEATS! Food Action Plan was endorsed by City Council in 2012. Its goals focus on creating a sustainable and resilient food system by increasing urban and regional food production and consumption, ensuring access to healthy and nutritious food for all Calgarians, and ensuring a secure supply of food for all Calgarians.

Through the implementation of CalgaryEATS!, The City of Calgary is facilitating improved access to healthy food to consumers while creating favorable conditions to ensure the investments needed to increase food production, processing and distribution capacities can be realized. Ensuring Calgarians have access to nutritious, safe and affordable food, creating decent jobs and income opportunities for small-scale producers and businesses, and encouraging more local food production lessen the dependence on distant supply sources. Recent amendments to the Land Use Bylaw lay the foundation for achieving these objectives. The amendments provide new economic opportunities for both small- and large-scale indoor food growing businesses and much needed opportunities for local food distribution.







Illustration by AUArts student **Cory Budgen** | **WHAT IS RESILIENCY TO YOU?** How can we push ourselves to better our economy, infrastructure, and environment?



Neighbourhoods and cities are changing so much and we need to get creative and work together to find out how to make them more resilient.

I decided to focus on the phrase "aging grant, into something new." In this case, the Scotiabank Saddledome imagined as a community green space.

## Action 3C.2: Natural Infrastructure Implementation Support

<p> <b>Why Is This Important?</b></p> <p>This initiative will help to align policy and implementation and test innovative approaches to natural infrastructure within the Calgary region. It will provide an integrated approach to natural infrastructure project planning and implementation across multiple stakeholders and provide a platform to share learning and improve practices. A pilot focus area will be Calgary Board of Education (CBE) school sites. The CBE is the second largest landowner in Calgary after The City of Calgary and this action will help to support decisions related to natural infrastructure investments on school sites such as school site naturalization projects.</p> <p><b>What Will We Do?</b></p> <p>We will take part in projects and partnerships where natural infrastructure can be protected and projects built, monitored and evaluated to provide multiple benefits and resilient value. This will be tied to learning and awareness, valuation, policy alignment and supported decision-making to enable project approval and implementation. This will support innovation, the development of partnerships, broaden access to funding and support shared risk. A key output of this action will be design guidelines to inform school site naturalization and other projects.</p> <p><b>How Will We Do This?</b></p> <p>We will learn from projects within our region and broader network and work with external stakeholders to support the application of natural infrastructure concepts in capital development activities. This will be achieved primarily through four focus areas: a new Climate/Developer Advisory Committee, a Natural (or Green) Stormwater Infrastructure program, a Habitat Restoration Program and the school site naturalization program.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead Organization</b> The focus areas will be led by The City of Calgary with the school site focus area led by the Calgary Board of Education</p> <p><b>Proposed Partner Organizations</b> City of Calgary Business Units/ Services and community and industry partners with natural infrastructure projects.</p> <p><b>With What Proposed Resources?</b></p> <p>City of Calgary staff CBE staff for school site naturalization guiding documents Other resources to fund capital projects (i.e. school funds and fundraising for school site naturalization)</p> <p><b>When Will We Start?</b></p> <p>To be determined, possibly Q1 2020</p> <p><b>How Long Will It Take?</b></p> <p>Two years to develop and ongoing to implement and revise</p>		
<p> <b>Resilience Value</b></p> <table border="0"> <tr> <td> <p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Ecosystem Management</li> <li>• Flood risk management</li> <li>• Maintenance of assets</li> <li>• Redundant diverse infrastructure</li> <li>• Environmental policy</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Inward investment, Community participation, Local identity and culture</li> </ul> </td> <td> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Multi-stakeholder alignment</li> <li>• Maintenance of assets</li> <li>• Education</li> <li>• Public risk awareness</li> <li>• Communication between government and public</li> <li>• Knowledge transfer and best practice sharing</li> </ul> </td> </tr> </table>	<p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Ecosystem Management</li> <li>• Flood risk management</li> <li>• Maintenance of assets</li> <li>• Redundant diverse infrastructure</li> <li>• Environmental policy</li> </ul> <p><b>Economy &amp; Society</b></p> <ul style="list-style-type: none"> <li>• Inward investment, Community participation, Local identity and culture</li> </ul>	<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Multi-stakeholder alignment</li> <li>• Maintenance of assets</li> <li>• Education</li> <li>• Public risk awareness</li> <li>• Communication between government and public</li> <li>• Knowledge transfer and best practice sharing</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <div style="text-align: center;">  </div>
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<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• Guidelines are adopted to inform the implementation of natural infrastructure projects.</li> </ul>			

**“Incentivize the systems and behaviours we want to see. Offer fee reductions for increased site perviousness. Streamline permitting processes for a range of environmental strategies instead of an aggregated way. Consistent application process.”**

– What We Heard report, 2019 Resilient Calgary Summary of input

Riparian areas occupy the spaces where land and water interact. They border rivers, creeks and wetlands and extend across the floodplain, down into the groundwater and upwards to include plants and trees. Networks of healthy, well-connected riparian areas are vital natural infrastructure for cities, contributing immensely to our city's resilience. Some of the key ecosystem services provided by healthy, intact riparian areas include; flood risk management, clean, safe water and increased biodiversity.

In 2013, City Council approved a Riparian Strategy, outlining a high level framework with a vision, principles, and strategies for protecting our riparian areas. From that strategy came The Riparian Action Program (RAP), a 10-year implementation plan for protecting, restoring and raising awareness about Calgary's river areas. The RAP takes an integrated approach that includes land use planning, restoration + monitoring and education + outreach. The program is part of The City's integrated water management approach and contributes to our goal of healthy rivers and watersheds.

A key action under the restoration and monitoring program area is to integrate bioengineering techniques into riverbank restoration. Bioengineering is the use of vegetation and natural materials for slope stabilization, erosion reduction and vegetation establishment.

Bioengineering is more ecologically beneficial than hard riprap designs — the practice of armoring and stabilizing banks with rock. While riprap is an effective immediate answer to erosion, it can negatively impact riparian health. By pushing for bioengineering solutions, bank stabilization objectives are met while also creating critical habitat for fish and wildlife, improving water quality and creating areas of natural beauty in our urban landscapes.

A flagship example is the Bioengineering Demonstration and Education Project (BDEP), located on the Bow River in Calgary between Pearce Estate Park and the Inglewood Bird Sanctuary. The BDEP is a joint effort between The City of Calgary and Alberta Environment and Parks and aims to improve fish habitat, stabilize slopes and demonstrate the effectiveness of various bioengineering techniques. A new interpretive pathway and the development of several education programs will increase awareness and understanding around bioengineering techniques and facilitate knowledge transfer, research and partnerships between The City of Calgary, the Province, professional practitioners, industry, academia and the public.



Before (left) and after (right) at the BDEP – a new bioengineering timber crib wall and boulders placed in the river create improved fish habitat, enhance bank stabilization and improve biodiversity.



## PILLAR 4



# Future Ready Infrastructure

### GOAL

Calgarians are supported through strategic investment in future-focused and resilient infrastructure.



## Overview

Resilience of a city improves when the community has access to infrastructure. If the infrastructure is designed to accommodate the diverse and ever-changing makeup of the community, it will serve the intended purpose. If adaptable, it will accommodate unintended uses. Harder working, multi-use and co-created infrastructure or retro-fits may be solutions to consider in response to a growing and diverse population, emerging natural impacts due to a changing climate, and a value-based interest in public funded projects. We also must prepare for a future that is connected socially, digitally, automatically and technologically.

Calgary has a long history of infrastructure investment. Our community is well served by water, wastewater and sewage facilities, good quality roads and transportation networks, public transit systems, recreation facilities, education and legal facilities and energy facilities. We have begun important investment in capital requirements that will support our resilience in the face of shocks and stresses, such as flood adaptation and mitigation, facility and infrastructure sensors, and dark fibre.

The City of Calgary has historically made significant improvements to capital management processes at a departmental level. In recent years, an enterprise-wide approach to infrastructure investment has been initiated to reach multiple resilience goals. These include stimulating the economy by increasing the quality and velocity of capital expenditures, strengthening investment decision-making to maximize the return for Calgarians, enhancing capital delivery efficiency and effectiveness, improving transparency and line of sight for key stakeholders, and attracting investment to Calgary. Continuing this approach to infrastructure investment to support public services is critical.

Following Council’s Five Guidelines to Administration, Capital Infrastructure Investment Principles provide greater alignment to The City’s shift towards service plans and budgets. Intentional management of capital will: support the delivery of City services at approved service levels; promote the well-being of communities, environment, and economy; build an adaptable,

resilient and smart city; enhance the long-term value of City assets; integrate, coordinate and optimize The City’s investment; and optimize financing and funding sources.

The outcomes and actions provided in this pillar are intended to keep an intentional focus on the relationship between services and capital planning, so that Calgarians are supported through strategic investment in future-focused and resilient infrastructure.

This will be achieved through two outcomes and four actions:

### Outcome 4A

**Calgary infrastructure investment is strategic, coordinated and future-focused**

#### Action 4A.1

A resilience lens is applied to strengthen public infrastructure investment decisions.

#### Action 4A.2

Maintain and improve the infrastructure that supports service needs.

### Outcome 4B

**Calgary services are supported by shock and stress resilient watershed systems**

#### Action 4B.1

Implement the integrated water management plan.

#### Action 4B.2

Watershed investment strategy.





## Value Proposition

Strategic investment and management of all infrastructure assets (hard, natural, community) will be one of the municipality's most challenging undertakings. If well managed, this will result in significant benefits to the community (return on investment) and improved community, city and regional resilience.



## Our Journey

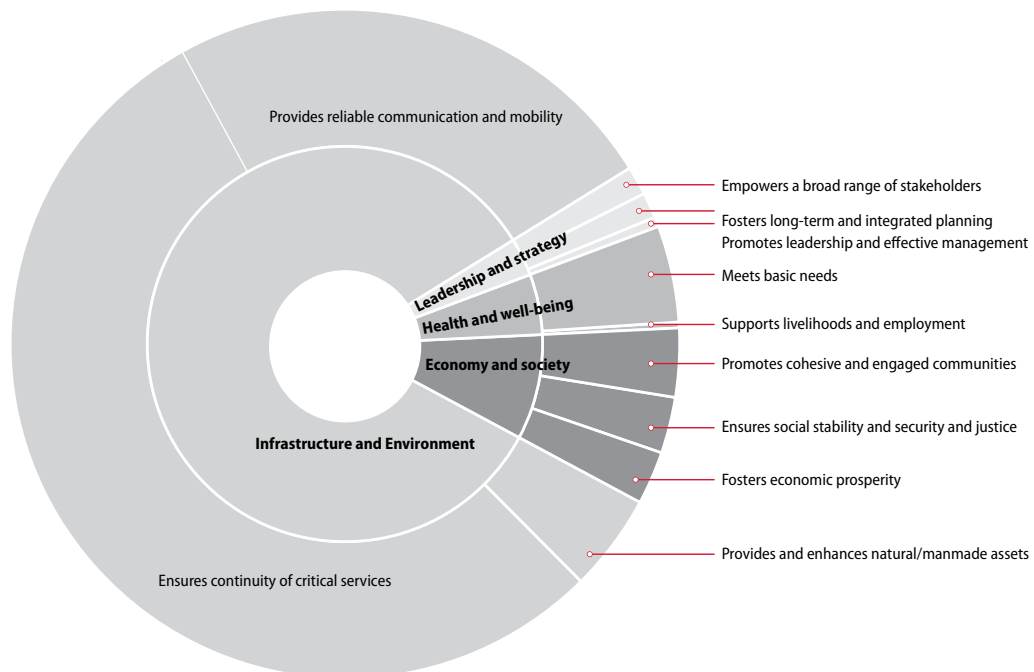
### Understanding infrastructure investment in supporting a resilient community

As a member of the 100 Resilient Cities network, a variety of tools, academic information and experience shared by other global cities is available to help better understand the components required to support a resilient community. The City Resilience Framework (CRF), available through 100 Resilient Cities, provides a lens to understand the complexity of cities and the drivers that contribute to their resilience. When developing its 2019-2022 capital budget, The City of Calgary capital business case format included reference to the framework drivers. This information was contained within a business case summary that identified key drivers such as resilience, economic investment and service support. This was a new

approach taken to help us better understand what investments are occurring to help our community withstand stresses and shocks. Consistent with The City's capital prioritization focusing on essential capital, the majority of new capital investments for 2019-2022 focus on critical infrastructure and asset risk mitigation.

Over the next four years, we will continue to develop a better understanding of the resilience return on investment in future-ready infrastructure that supports service delivery. This work will be conducted through the oversight of the Resilience and Infrastructure Calgary business unit.

### New Capital Investments aligned to City Resilience Framework (by Value)



## Linkages to other Resilient Calgary Pillars



### **The Future of Calgary's Economy:**

intentional investment that leverages private and public funding, such as activities tied to our Centre City, Established Area Growth and Change, and regional benefits.



### **Inclusive Futures:** service needs

by our community are growing more complex and there are exciting opportunities to elevate the service impacts supported by resilient capital investment.



### **The Future of Calgary's Natural**

**Infrastructure:** capital investment, particularly in relation to our water systems, is considered jointly with potential impacts or benefits to natural infrastructure and ecosystem. The better understanding of our natural infrastructure as an asset system will provide important knowledge in future infrastructure planning.



### **Future-Focused Calgary:**

capital planning and investment will rely on scenario and foresight activities that help us understand the service needs of our community in a quickly emerging future; optimizing every investment dollar will involve including a resilience lens to gain the greatest resilience dividend.





## OUTCOME 4A:

### Calgary infrastructure investment is strategic, coordinated and future-focused

**Description:** The City of Calgary seeks to improve the quality of life, build public confidence and trust, and demonstrate service value to Calgarians. Capital planning and investment plays a pivotal role in creating inclusive, accessible and connected communities and dynamic economies, contributing to a resilient city. Council affirmed the role of capital investment in building and improving city resilience by approving the Capital Infrastructure Investment Strategy in 2015. A corporate capital strategy enables The City to restructure and increase its capacity to intentionally provide economic stimulus, add resilience to the community, maintain and preserve The City's infrastructure and community assets through lifecycle funding, build a great community through legacy investments and leverage external public and private investments.

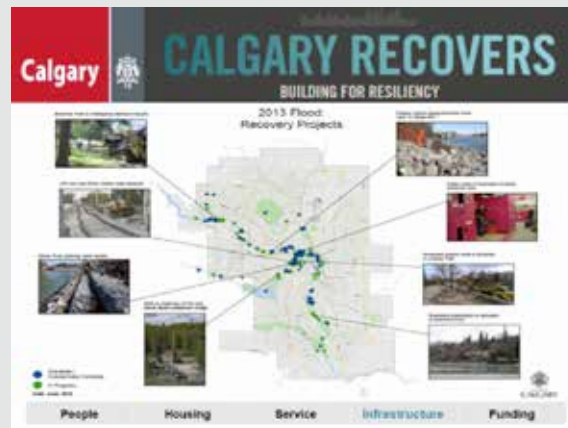


In 2013 June, Calgary was impacted by a flood disaster resulting in significant municipal infrastructure damage — at that time, estimated at more than \$400 million total damages. When the 2013 flood occurred, The City did not have a coordinating process to monitor, track and report on infrastructure recovery and resilience. Previous smaller disaster events analyzed by the Calgary Emergency Management Agency had taught us that a coordination role would be necessary to reduce service, insurance and financial risks for the organization, and the establishment of a Recovery Operations Centre (ROC) was identified by The City of Calgary as an important civic role post-disaster event.

The ROC was established to oversee five recovery pillars, two of which were Infrastructure and Funding. Immediately after the flood occurred, a Municipal Infrastructure Recovery Program (MIRP) was established as part of the ROC to track, monitor and report to City Council and the public about City of Calgary infrastructure and asset recovery and funding progress.

The MIRP had a responsibility to help with progress reporting to the public who were dependent on services supported by infrastructure, and to ensure financial prudence and share this with Council. The primary goal of business units was to restore public services supported by infrastructure; a secondary and equally important goal was to reduce financial risk to the organization.

The MIRP team was put in place with dedicated resources offered by each impacted business unit/service, reporting to an MIRP coordinator, who reported to the ROC. This matrix model was one of the first of its kind at The City of Calgary, streamlining communication to Council on infrastructure recovery and financial reporting, and with an intention to create efficiencies in internal processes. A portfolio coordination process was established, refined over the first few years







as expectations by insurance providers and the provincial recovery team were clarified, and project prioritization related to risk and funding availability was conducted.





The development of a reporting framework to track project progress, funding source and budget was established. Monthly reports on the progress and status of the recovery work continue to be conducted, and The City of Calgary standard of practice has been integral to support evidence-based updates that support a high rate of success in receiving funds from insurance and other government recovery and resilience programs. Regular information updates are provided to the public through an online map that showed every MIRP project, progress recovery and cost. Six years post-flood, this team of City staff continue to oversee the project completion and financial recovery of approximately 240 flood impacted infrastructure and asset projects.

The matrix model that supported the success of the MIRP infrastructure recovery and investment in resilience has been a foundation of the approach taken to Infrastructure Calgary, the current City of Calgary portfolio approach to infrastructure investment.

**Action 4A.1: Apply a Resilience Lens to Strengthen Public Infrastructure Investment Decisions**

 <p><b>Why Is This Important?</b></p>	 <p><b>Who's Involved?</b></p>		
<p>Calgary has a long history of infrastructure investment; whether it is new or maintaining what is in place in support of service to citizens. Our community is well served by water, wastewater and sewage facilities, good quality roads and transportation networks, public transit systems, recreation facilities, parks, pathways, education and legal facilities and energy facilities. We have begun important capital investment that will support resilience in the face of shocks and stresses, such as flood adaptation and mitigation, facility and infrastructure sensors, and the investment in dark fibre.</p> <p><b>What Will We Do?</b></p> <p>The City of Calgary has embraced a service-based approach to meet the needs of our residents and supporting our City vision of a great place to make a living, and a great place to make a life. Infrastructure investment supports the current and future services that our community needs. It is strategic and supported by a coordinated view of the whole city. During the One Calgary service plan and budget process, capital planning was conducted at a portfolio level, enabling a holistic planning view of all City of Calgary capital for the first time. A resilience lens was included in this planning view.</p> <p>The City of Calgary will mature enterprise-wide processes and practices to support investments that keep public infrastructure resilient to future stresses and shocks. This will be coordinated through Infrastructure Calgary program goals to support capital infrastructure investment recommendations.</p> <p><b>How Will We Do This?</b></p> <p>Through the delivery of the One Calgary 2019-2022 service plans and budgets, The City of Calgary will continue activities to align capital planning under one portfolio and to the Capital Infrastructure Investment Principles. Governance and oversight of portfolio capital planning and budget recommendations will be overseen by Infrastructure Calgary, a cross-departmental coordination steering committee of services responsible for capital delivery. The inclusion of a resilience lens as part of the reporting and measuring of capital delivery will continue and be refined through the work plan of Infrastructure Calgary. This work will include maturation processes, taking guidance from reviews conducted by consultants including the Initial Infrastructure Business Case Assessment Review conducted by our resilience strategy partner, AECOM. We will also undertake a research and development project to adapt existing benefit-cost and return on investment toolkits to the Calgary context and include additional categories of social, cultural and environmental impacts.</p>	<p><b>The City of Calgary: Resilience and Infrastructure Calgary</b></p> <p><b>Proposed Partner Organizations</b></p> <p>The City of Calgary:</p> <ul style="list-style-type: none"> <li>Infrastructure Support</li> <li>All capital supported city services</li> <li>Established Area of Growth and change Strategy Advisory Team</li> <li>City Planning &amp; Policy</li> <li>Business Continuity &amp; Emergency Management</li> <li>Environmental Management</li> <li>Water Resources</li> </ul> <p><b>With What Proposed Resources?</b></p> <p>The City of Calgary – Resilience and Infrastructure Calgary</p> <p>The City of Calgary: capital supported city services</p> <p>Consultant resources where available</p> <p>Other government resources (grants)</p> <p><b>When Will We Start?</b></p> <p>Q1 2019</p> <p><b>How Long Will It Take?</b></p> <p>Four years</p>		
<p> <b>Resilience Value</b></p> <table border="0"> <tr> <td> <p><b>Leadership &amp; strategy</b></p> <ul style="list-style-type: none"> <li>Foster long-term and integrated planning</li> <li>Promotes leadership and effective management</li> </ul> </td> <td> <p><b>Infrastructure and environment</b></p> <ul style="list-style-type: none"> <li>Ensures continuity of critical services</li> </ul> <p><b>Health &amp; well-being</b></p> <ul style="list-style-type: none"> <li>Meets basic needs</li> <li>Promotes cohesive and engaged communities</li> </ul> </td> </tr> </table>	<p><b>Leadership &amp; strategy</b></p> <ul style="list-style-type: none"> <li>Foster long-term and integrated planning</li> <li>Promotes leadership and effective management</li> </ul>	<p><b>Infrastructure and environment</b></p> <ul style="list-style-type: none"> <li>Ensures continuity of critical services</li> </ul> <p><b>Health &amp; well-being</b></p> <ul style="list-style-type: none"> <li>Meets basic needs</li> <li>Promotes cohesive and engaged communities</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> 
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<p><b>Success Measures:</b></p> <ul style="list-style-type: none"> <li>Capital investment approved within the 2019-2022 One Calgary service plan is realized.</li> <li>New sources of funding are sought and capacity for additional infrastructure investment is maximized.</li> </ul>			

## Maintain and Improve the Infrastructure That Supports Service Needs

 <b>Why Is This Important?</b>	 <b>Who's Involved?</b>		
<p>The City of Calgary owns, operates and maintains a wide range of infrastructure assets. These assets support social, economic and environmental services that The City provides. To continue to provide these services, and align infrastructure assets to best support service delivery, it is important to know the state of our current assets. This information helps us effectively and efficiently manage our infrastructure. With proper asset management, The City can play its role in fostering the local economy through ongoing investments in infrastructure. In addition, this information also helps us effectively plan quality services for the citizens of Calgary.</p> <p><b>What Will We Do?</b></p> <p>City infrastructure and assets are appropriately maintained over their entire lifecycle and are aligned with known service needs and priorities. Assets that no longer meet service needs are identified. Innovative solutions which may be non-asset based are explored to achieve service needs. The infrastructure funding gap to support asset maintenance will be reduced.</p> <p><b>How Will We Do This?</b></p> <p>The City of Calgary embraces widely accepted asset management policies and practices essential for providing safe and reliable services to citizens. Continuing to mature in this area will be accomplished by focusing on three key areas. The first is to ensure clarity of prioritization criteria and processes related to infrastructure investment planning and project portfolio management. This ensures investments are directed towards the areas of highest value. The second focus area is formal and uniform identification and cataloging of critical assets. Third, The City will focus on clear and consistent data collection related to all assets, and critical assets in particular.</p>	<p><b>The City of Calgary – Infrastructure Support</b></p> <p><b>Proposed Partner Organizations</b>                  The City of Calgary: Resilience and Infrastructure Calgary                  The City of Calgary: All Capital supported city services</p> <p><b>With What Proposed Resources?</b></p> <p>Asset management and improvement as approved in the One Calgary 2019-2022 service plans and budgets.</p> <p><b>When Will We Start?</b></p> <p>Q1 2019</p> <p><b>How Long Will It Take?</b></p> <p>Four years</p>		
<p> <b>Resilience Value</b></p> <table border="0"> <tr> <td> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>Foster long-term and integrated planning</li> </ul> </td> <td> <p><b>Infrastructure and Environment</b></p> <ul style="list-style-type: none"> <li>Ensures continuity of critical services</li> </ul> </td> </tr> </table>	<p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>Foster long-term and integrated planning</li> </ul>	<p><b>Infrastructure and Environment</b></p> <ul style="list-style-type: none"> <li>Ensures continuity of critical services</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> 
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<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>Percentage of capital investment focused on maintenance, lifecycle and annual investment plans.</li> </ul>			

**Explore capabilities of existing assets, expand their level of service, their potentials to service other business groups, other uses. Maximize use of existing assets.**

– 2019 January 25 #ResilientYYC Workshop theme

Illustration by AUArts student **Steph Limb** | **WHAT IS RESILIENCY TO YOU?** We had a fire at our farm once and I remember the neighbours bringing over casseroles and food to make sure we were OK. It made us feel part of the community and showed how everyone comes together to help in times of adversity. I think that being neighbourly defines Alberta and reflects our rural roots, which is why I showed the Alberta Wild Roses at the base of the illustration.





## OUTCOME 4B:

### Calgary services are supported by shock and stress resilient watershed systems

Alberta has experienced significant changes to its climate in recent decades. Average annual temperatures in Alberta are expected to increase from nine to 27 heat days (29°C or above) per year by the 2050s and up to 49 heat days by the 2080s, depending on global and local actions to reduce carbon pollution. Just as a fever can be dangerous in our body, a change of a few degrees can have significant and dangerous impacts on the climate. Climate change hazards have worrying implications for cities, including impacts on city water resources, damage to and failure of infrastructure, threats to human health and increased mortality.

Climate modelling tells us that Calgary will experience more severe and frequent extreme weather events such as flooding, drought and the effects of wildfires. In 2013, Calgary experienced its worst flood in recent memory, impacting 15 per cent of our city's geographic region, including our economic core in the downtown. Residents, small and large businesses and infrastructure were all impacted, with flood recovery and resilience building continuing in 2019. Following the flood, our community interest in preparing for future flood events was heightened, leading to resilient and adaptive infrastructure investments, a focus on small business continuity planning, and supportive neighbourhood preparedness activities and network building began.

Great work has been done to best understand our flood risk in Calgary, and The City of Calgary has developed a [flood resilience plan](#). Contributing to this flood risk work has been a robust forecast of our climate resilience, and a review of our [climate related actions](#). Looking forward, our focus has expanded to be comprehensive of our overall relationship with water.

The City of Calgary works to ensure we have a healthy, resilient watershed capable of providing clean, reliable water for our current needs and future generations. The City is dedicated to implementing the Government of Alberta's *Water for Life Strategy* through an Integrated Watershed Planning Strategic Framework that ensures reliable and resilient water servicing for Calgary and regional customers. The City provides drinking water and wastewater treatment to about 1 in 3 Albertans. Working with the Province and regional partners, The City aims to protect the water supply, use water wisely, keep rivers healthy and build resiliency to flooding. The City delivers on this commitment through three lines of service: water treatment and supply, wastewater collection and treatment, and stormwater management.

Increased pressure on watersheds from growth in the region as well as the impacts of a changing climate make watershed management one of Calgary's most critical resiliency challenges. The City's commitment to watershed protection considers the needs of a growing customer base and balancing the economic, social and environmental impacts of our decisions, programs and actions. Sustainable management of our shared water resources is the driving force behind an integrated watershed management approach.

# Implement an Integrated Watershed Management Approach



### Why Is This Important?

The City’s Integrated Watershed (the land that drains into our rivers) Management approach is essential to protect public health and the environment, while strengthening our resiliency to a changing climate. Calgary must develop our communities with a focus on achieving future water security and a sustainable water supply. Watershed management must be integrated into our land use policies, plans and decisions to ensure healthy watersheds and rivers.

#### What Will We Do?

Infrastructure investment supports Integrated Watershed Management in the following areas:

- Building resiliency to climate change – in Water Utility operations and infrastructure.
- Flood and drought mitigation – at the municipal and regional levels.
- Resilient Sustainable regional water supply.
- Reducing stormwater impacts and improving stormwater quality.
- Riparian (river bank) area protection.
- Water efficiency and managing water demand.
- Ensuring appropriate/sufficient water and wastewater treatment capacity.

#### How Will We Do This?

Water Resources continues to identify and invest in watershed management as on-going relationships with internal services, utilities, other orders of government and other stakeholders continue to identify and/or invest in infrastructure. This work will be considered as an integral part of the deliverable within Action 4A.1. Integrated Watershed Management work underway by The City includes:

- Flood Resilience Plan
- Source Water Protection Plan
- Riparian Action Program
- Water Efficiency Plan
- Community Drainage Improvements Program



### Who’s Involved?

#### The City of Calgary – Water Resources

**Proposed Partner Organizations**  
The City of Calgary: Resilience and Infrastructure Calgary

The City of Calgary: City Community Planning

The City of Calgary: Calgary Emergency Management Agency

The City of Calgary: Environmental & Safety Management

#### With What Proposed Resources?

As approved in The City of Calgary One Calgary 2019-2022 service plans and budgets.

#### When Will We Start?

Q1 2019

#### How Long Will It Take?

Ongoing



### Resilience Value

#### Health & Well-being

- Meets basic needs: Supports the continued integrated watershed management to support service delivery of water to Calgary and area

#### Infrastructure & Environment

- Ensures continuity of critical services: Safeguards for critical infrastructure, Flood risk management, Ecosystem management
- Provides and enhances natural and man-made assets



### Benefit to Other Pillars and Shared Theme

#### Success Measures:

- Flood and drought mitigation investments are identified in the 2019-2022 One Calgary service plans and budgets are implemented.
- Flood and drought mitigation investments are prepared and recommended to Council for the next service plan and budget cycle.
- Watershed management resilience investment opportunities offered through grants and programs are optimized.

**Adapt a not-business-as-usual approach. Support innovative and risk taking, potentially in the new community growth opportunities and established area strategy work ahead. Align processes to support holistic thinking and test in a “living lab” environment.**

– 2019 January 25 #ResilientYYC Workshop theme

## Infrastructure Recovery and Resilience: 2013 Flood

RESILIENCE IN ACTION (RIA.23)

Since the 1930's, the Glenmore Dam has been integral to Calgary's water infrastructure system. In the 1930's, Calgary was experiencing an economic recession coupled with a growing population dependent on a reliable water source. The Glenmore Dam was an infrastructure stimulus program designed to respond to the water service need and to create jobs for the local economy.






The Glenmore dam and reservoir has since then provided important flood and drought management in Calgary. Following the 2013 flood, The City considered the role of the dam itself and the capacity of the reservoir to contain additional water during high peak flows. Additionally, the value of the reservoir during water shortages was considered. Investing in our water management infrastructure is considered an essential, and critical, municipal responsibility.

As a result, The City of Calgary identified improvements could be made to upgrade the Glenmore dam to provide greater water management service and improved ease of operation for Calgary.

The Glenmore Dam will be under construction from spring 2017 until 2020, realizing important integrated water management services and the co-benefit of being a popular link within our regional pathway system. Upgrades include a new bridge deck with better access for pathway users, concrete work on the face of the dam and a new steel gate and hoist system. This is a cost-shared project supported by The City of Calgary and Province of Alberta funding.



## Action 4B.2: Develop a Watershed Investment Strategy

<p> <b>Why Is This Important?</b></p> <p>This action will help us to address challenges related to our source watershed including: land use change from population growth and development that stresses water systems; and impacts from climate change such as high intensity storms and wildfires. There is an opportunity to move source watershed protection into various city and regional conversations and to provide incentives to private landowners and stakeholders for projects that achieve positive watershed benefits.</p> <p><b>What Will We Do?</b></p> <p>Through this action we will garner internal and external support for a City of Calgary Watershed Investment Program and develop a Watershed Investment Strategy that includes financial mechanisms for partnerships, micro-grants and a strategy for protecting natural infrastructure or building green stormwater infrastructure in The City of Calgary.</p> <p><b>How Will We Do This?</b></p> <p>We will work with a consultant, subject matter experts and stakeholders to identify who, where and how others are having success with watershed investment strategies and leverage related work and research to inform this action.</p>	<p> <b>Who's Involved?</b></p> <p><b>Proposed Lead Organization</b> The City of Calgary: Water Resources</p> <p><b>Proposed Partner Organizations</b> Other City of Calgary Business Units/ Services such as Parks, Real Estate &amp; Development Services, Environmental &amp; Safety Management, Finance, Law and Resilience and Infrastructure Calgary</p> <p><b>With What Proposed Resources?</b></p> <p>City of Calgary staff</p> <p><b>When Will We Start?</b></p> <p>Q3 2019</p> <p><b>How Long Will It Take?</b></p> <p>Two years</p>
<p> <b>Resilience Value</b></p> <p><b>Health &amp; Well-being:</b></p> <ul style="list-style-type: none"> <li>• Water</li> </ul> <p><b>Infrastructure &amp; Environment</b></p> <ul style="list-style-type: none"> <li>• Safeguard for critical infrastructure, Redundant, diverse infrastructure, optimization of critical infrastructure, flood risk management, ecosystem management</li> </ul> <p><b>Leadership &amp; Strategy</b></p> <ul style="list-style-type: none"> <li>• Decision-making and leadership, Government alignment</li> </ul>	<p><b>Benefit to Other Pillars and Shared Theme</b></p> <p> </p>
<p><b>Success Measure:</b></p> <ul style="list-style-type: none"> <li>• Develop, issue and implement a strategy that is supported corporately and within the community and region.</li> </ul>	











**“Integrating green infrastructure into regular infrastructure in order to offset the burden. Maybe expropriating green space to do flooding and storm water management should be considered. The City expropriates land for transportation projects, but supporting resilience is just as valuable. We need a healthy relationship between urban communities and rural communities. It’s a good thing that we are limiting the “urban sprawl”.**










– What We Heard report, 2019 Resilient Calgary Summary of input



# RESILIENT CALGARY STRATEGY SUMMARY

## Pillars, Outcomes, Actions Summary Table

Action ID	Action	Outcome	Owner	Begin	Duration	Resilience Value	Benefit to Other Pillars and Shared Theme
<b>SHARED THEME: A FUTURE-FOCUSED CALGARY</b>							
S.1	Deliver a Calgary Foresight Planning Method		The City of Calgary	2019 Q2	Ongoing	Leadership & Strategy Economy & Society	
S.2	Use a Resilience Dividend Tool		The City of Calgary: Resilience and Infrastructure Calgary	2019 Q1	10 months	Leadership & Strategy	
S.3	Review the Triple Bottom Line Policy		The City of Calgary: Calgary Growth Strategies	2019 Q4	Two years	Leadership & Strategy	
<b>PILLAR ONE: THE FUTURE OF CALGARY'S ECONOMY</b>							
1A.1	Develop Talent for Emerging Economies	Calgary's Workforce is ready for emerging economies	Calgary Economic Development	2018	Ongoing	Economy & Society Health & Well-being	
1B.1	Understand Digital Disparity	Digital Disparity in Calgary is addressed so Calgarians have safe and equitable access to a connected economy and social realm	The City of Calgary: IT-Smart City	2019 Q3	Two years	Economy & Society Infrastructure & Environment Leadership & Strategy	
1B.2	Be 5G Ready	Digital Disparity in Calgary is addressed so Calgarians have safe and equitable access to a connected economy and social realm	The City of Calgary: IT	2019 Q3	Ongoing	Infrastructure & Environment Economy & Society	
1C.1	Support Business Continuity Planning	Strengthening resilience through business continuity	Chamber of Commerce CARYA The City of Calgary - CEMA	2019 Q3	Ongoing	Economy & Society Infrastructure & Environment	
1D.1	Attraction, Growth and Resilience Dividend	Calgary is able to coordinate efficiencies, levers and incentives to grow and attract business	The City of Calgary: Resilience and Infrastructure Calgary	2019 Q2	Ongoing	Economy & Society Health & Well-being	
1D.2	Implement and Living Lab Strategy and Governance Model	Calgary is able to coordinate efficiencies, levers and incentives to grow and attract business	The City of Calgary: IT Smart City	2018 Q4	Ongoing	Economy & Society Health & Well-being	
1D.3	The Future of Calgary's Centre City	Calgary is able to coordinate efficiencies, levers and incentives to grow and attract business	The City of Calgary: Urban Strategy	2018 Q2	Two years	Leadership & Strategy Economy & Society	

Action ID	Action	Outcome	Owner	Begin	Duration	Resilience Value	Benefit to Other Pillars and Shared Theme
<b>PILLAR TWO: INCLUSIVE FUTURES</b>							
2A.1	Diversify representation on boards	Calgary institutions include equity-seeking communities in decision-making and democratic processes	Post-secondary Institution / Foundation	2019 Q1	Four+ years	Leadership & Strategy Economy & Society Health & Wellbeing	
2A.2	Open spaces for inclusive conversations	Calgary institutions include equity-seeking communities in decision-making and democratic processes	A public institution	2019 Q3	Four+ years	Leadership & Strategy Economy & Society	
2A.3	Advance equity in organizations with a Multi-Sectoral Community of Practice	Calgary institutions include equity-seeking communities in decision-making and democratic processes	The City of Calgary: Resilience and Infrastructure Calgary	2019 Q2	Three+ years	Leadership & Strategy Economy & Society	
2B.1	Support the revitalization of Indigenous cultures and languages	Calgary institutions have trusted and informed relationships with Indigenous communities "in a good way"	Indigenous community organizations	2020 Q2	Four+ years	Leadership & Strategy Economy & Society	
2B.2	Walk parallel paths together in a "good way"	Calgary institutions have trusted and informed relationships with Indigenous communities "in a good way"	A public institution	2020 Q3	Four+ years	Leadership & Strategy Economy & Society	
2C.1	Build a governance systems map	Calgary institutions value diverse governance paradigms	A community collective	2021 Q2	Three years	Leadership & Strategy Economy & Society	
2D.1	Encourage business investments addressing inclusion	Calgary institutions invest in equitable economic development	A private institution	2020 Q4	Four+ years	Leadership & Strategy Economy & Society	
2D.2	Develop a Social Procurement Policy and Strategy	Calgary institutions invest in equitable economic development	The City of Calgary: Supply Management	2018 Q4	Three years	Leadership & Strategy Economy & Society	
2D.3	Explore guaranteed universal basic income options	Calgary institutions invest in equitable economic development	A community collective	2019 Q1	Two years	Leadership & Strategy Economy & Society	

Action ID	Action	Outcome	Owner	Begin	Duration	Resilience Value	Benefit to Other Pillars and Shared Theme
<b>PILLAR THREE: THE FUTURE OF CALGARY'S NATURAL INFRASTRUCTURE</b>							
3A.1	Natural Infrastructure Awareness	Calgarians are aware of our key natural infrastructure and its role in providing community benefits	The City of Calgary: Environmental & Safety Management	2019 Q3	Two years	Leadership & Strategy Economy & Society Infrastructure & Environment	 
3A.2	Natural Infrastructure Inventory	Calgarians are aware of the role and value of our natural infrastructure in providing community benefits	The City of Calgary: Corporate Analytics and Innovation	2019 Q3	18 months	Leadership & Strategy Economy & Society Infrastructure & Environment	   
3B.1	Natural Infrastructure Valuation	Calgarians are supported through sound analysis of natural infrastructure value that informs decision-making	The City of Calgary: Environmental & Safety Management	2019 Q2	Two years	Leadership & Strategy Economy & Society Infrastructure & Environment	 
3B.2	Natural Infrastructure Integration into City Processes	Calgarians are supported through sound analysis of natural infrastructure value that informs decision-making	The City of Calgary	2021 Q1	18 months	Leadership & Strategy Infrastructure & Environment Economy & Society	 
3C.1	Natural Infrastructure Policy Integration	Calgarians are supported through strategic investment in natural infrastructure	The City of Calgary	2019 Q3	Ongoing	Infrastructure & Environment Leadership & Strategy	 
3C.2	Natural Infrastructure Implementation Support	Calgarians are supported through strategic investment in natural infrastructure	The City of Calgary or Calgary Board of Education	2020	Two years	Infrastructure & Environment Leadership & Strategy Economy & Society	 
<b>PILLAR FOUR: FUTURE READY INFRASTRUCTURE</b>							
4A.1	Apply a resilience lens to strengthen public infrastructure investment decisions	Calgary infrastructure investment is strategic, coordinated and future-focused	The City of Calgary: Resilience and Infrastructure Calgary	2019 Q1	Four years	Leadership & Strategy Infrastructure & Environment Health & Wellbeing	
4A.2	Maintain and improve the infrastructure that supports service needs	Calgary infrastructure investment is strategic, coordinated and future-focused	The City of Calgary: Infrastructure Support	2019 Q1	Four years	Leadership & Strategy Infrastructure & Environment	
4B.1	Implement our Integrated Watershed Management Plan	Calgary services are supported by shock and stress resilient watershed systems	The City of Calgary: Water Resources	2019 Q1	Ongoing	Health & Wellbeing Infrastructure & Environment	 
4B.2	Watershed Investment Strategy	Calgary services are supported by shock and stress resilient watershed systems	The City of Calgary: Water Resources	2019 Q3	Two years	Leadership & Strategy Infrastructure & Environment Health & Well-being	 



## Acknowledgements

The Resilient Calgary strategy is our next step in a historical commitment to resilience in our great city. We have a strong legacy of visionary thinking translated into action; we have built our communities with a focus on housing, connectivity and well-being, we have developed a transportation network that supports every mode of travel; we have a strong business community that has a voice; we have welcomed guests and supported people with arts, recreation, sports and leisure; we have an incredible community of leadership and grass roots activity that comes together when we are tested through stresses and shocks. Our resilient challenges remain those we have identified in our historic plans and policies: keeping our community green, our economy strong, our infrastructure and assets working for us, and most importantly, our people vested in each other's success.

The Resilient Calgary strategy represents a point in time: our strategy was developed as we recovered from a significant flood, while we have been responding to an economic downturn not experienced in decades, and while we see our community struggling to overcome job loss, maintain mental wellness, and including new neighbours. The actions and outcomes represented in this strategy are not a starting point — they are an intentional force. Together we have placed a lens on the most urgent resilience issues, lifted our awareness of each other's efforts to build resilience, and leveraged our collective action to achieve our vision of Calgary: a great city to make a living, and a great city to make a life.

## Special Thanks To:

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### **Resilient Calgary Steering Committee**

#### **City of Calgary services and business units**

##### **Organizations**

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##### **Calgary Poet Laureate**

Sheri-D. Wilson

##### **Calgary Communities**

Our people, not for profits, educators, first responders, faith leaders, Indigenous elders and community, business community, community associations, other orders of government, and our Team Canada partners.

##### **Yours in Resilience,**

##### **The City of Calgary Resilience Team**

Brad Stevens, Chief Resilience Officer and Deputy City Manager

Christine Arthurs, Deputy City Resilience Officer and Director, Resilience and Infrastructure Calgary

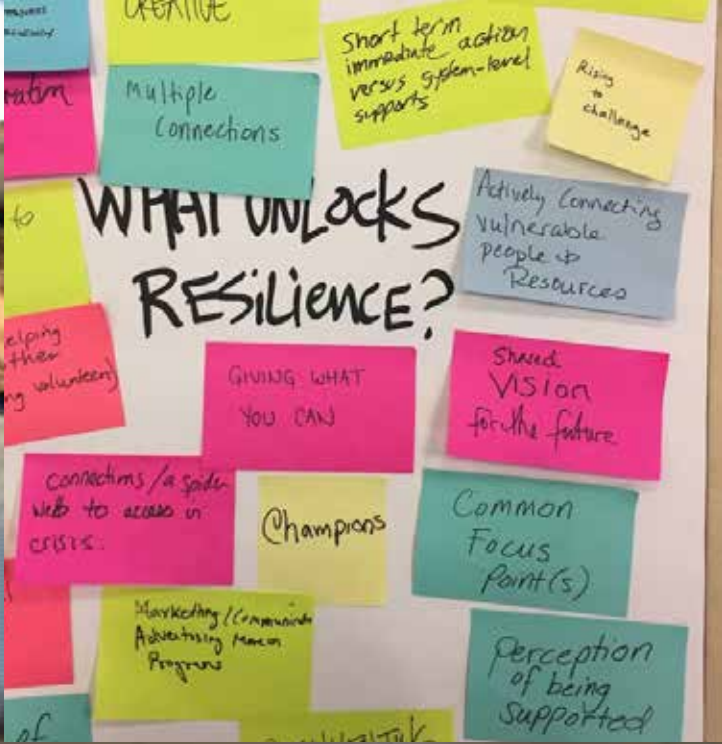
Julia Bicknell, Jason Cameron, Heather Galbraith, Jennifer Isbister, Jeny Mathews-Thusoo, Adonica Marchand, Afsheen Mohamed, Garth Paynter, Kendal David, Lorna Wallace

## A Call to Action

Please join us in strengthening Calgary's resilience by being our resilience lens, helping us lift and leverage opportunities to move these actions forward. Your continued participation will help us create a more future-focused and resilient Calgary.

**Watch for** updates, events and opportunities on our website, [www.calgary.ca/resilientcalgary](http://www.calgary.ca/resilientcalgary) to follow the ongoing progress of the strategy.

**Follow** #ResilientYYC on Facebook and Twitter



## Appendices

### Appendix 1: Glossary

**Agenda-Setting Workshop:** the Agenda-Setting Workshop was the first step in purposeful resilience building. It brought together a diverse group of stakeholders and city leaders to discuss the concept of urban resilience and identify the city's resilience priorities — the goal was the collectively set the agenda for a resilient Calgary.

**5G:** 5th Generation of cellular mobile communications. 5G realizes a marked performance enhancement over previous generations for high data rate, reduced latency, energy saving, cost reduction, higher system capacity, and massive device connectivity.

**Biodiversity:** the variability among living organisms — animals, plants, their habitats and their genes — from all sources including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part. This includes diversity within species, between species, and of ecosystems. (International Union for Conservation of Nature per "Our BiodiverCity: Calgary's 10-year biodiversity strategic plan.")

**Business Continuity:** the process of creating systems of prevention, mitigation and recovery to deal with potential stresses and shocks to an organization or business.

**Calgary Economic Development (CED):** managed by an independent Board of Directors, Calgary Economic Development is a not-for-profit corporation funded by The City of Calgary, community partners, other orders of government and the private sector to steward Calgary's Economic Development Strategy.

**Capital Infrastructure Investment Principles (CIIP):** to support the purposeful approach to capital investment, Council approved the Capital Infrastructure Investment Principles (CIIP) in March 2018. This is an update to the previously approved Capital Infrastructure Investment Strategy (CIIS) from November 2015. Infrastructure Calgary is responsible for the implementation of these principles. These principles emphasize that intentional management of capital at The City will: Support the delivery of City of Calgary services, at approved service levels; Promote the well-being of communities, environment, and economy; Build an adaptable, resilient and smart city; Enhance the long-term value of City assets; Integrate, coordinate and optimize The City's investment.

**Capital Prioritization Criteria:** a set of criteria established in 2018 by Infrastructure Calgary to help prioritize capital investment recommendations to support the One Calgary 2019-2022 service plans and budgets. Three categories of investment were defined: essential, current and enhanced.

**City Foresight is the science of thinking about the future of a city**

**Climate Resilience Strategy:** The City of Calgary's *Climate Resilience Strategy* outlines The City's strategies and actions to:

1. Reduce our contributions to climate change by improving energy management and reducing greenhouse gas emissions (climate change mitigation).
2. Respond to a changing climate by implementing risk management measures to reduce the impact of extreme weather events and climatic changes on infrastructure and services (climate change adaptation).

**Corporate Asset Management Plan (CAMP):** The City of Calgary corporate plan which comprises individual business unit asset management plans and serves as an action plan for the improvement of The Corporation's Asset Management System (including practices, technology, people and business processes).

**Corporate Project Management Framework (CPMF):** created to lead improving our processes and ultimately the quality of work for selecting, building and reporting on capital construction projects.

**Current Capital:** capital investments needed to maintain a level of service at existing levels.

**Digital Disparity:** the gap between demographics, education and regions that are able to access modern information and communications technology.

**Diversity:** is about consciously understanding and appreciating different ways of being and knowing and ensuring that our communities reflect and respect all differences in all its forms.

**Dominant Group:** not necessarily a majority in terms of numbers, but the group with power, privilege and social status in a society. Attributes of this group are accepted as the 'norm' by which other groups are measured or compared, often to their detriment.

**Drivers of Change:** are factors which bring change in our society. They can cause significant or disruptive change within a system. Examples include artificial intelligence learning to be social and ethical.

**Ecosystem:** a dynamic system of plants, animals and other organisms, together with the non-living components of the environment, that functions as an interdependent unit. (per "Our BiodiverCity: Calgary's 10-year biodiversity strategic plan")

**Enhanced Capital:** capital investments needed to provide an increase in the level of service of an existing service or introduce a new service

**Environmentally Significant Area:** an area that has been assessed prior to potential development and which, because of its features or characteristics, is significant to Calgary from an environmental perspective. (per "Our BiodiverCity: Calgary's 10-year biodiversity strategic plan")

**Essential Capital:** capital investments needed to meet legal, regulatory, health and safety requirements, critical infrastructure, critical asset risk mitigation or minimize service delivery costs

**Equity:** an approach whereby all people – including those who bear the burden of historic and contemporary forms of marginalization, whether intentional or unintentional – have equal access to opportunities to define and achieve goals. Equity is more than an outcome; it is an on-going process that seeks to correct systemic barriers and create a more just and fair society for all.

**Equity-Seeking Communities (ESCs):** include groups of people who generally have less access to opportunities, resources, and systems of power because of their actual or perceived identity or identities. Equity-seeking communities often experience social and financial disadvantages because of systems of oppression. Oppression takes many forms including but not limited to racism, sexism, and ableism. Examples of ESCs include but are not limited to:

- Indigenous peoples, women, racialized/people of color, immigrants, members of non-western religions, people with mental illness or physical or intellectual disabilities, older adults, youth, people experiencing poverty, and lesbian, gay, bisexual, trans-identified, intersex, queer/questioning, two-spirited (LGBTIQ2S+) people, etc.

This list is not exhaustive and is always evolving. People who belong to multiple ESCs often experience overlapping and interdependent systems of discrimination or disadvantage.

**Ethical Space:** is the space created where the parallel processes of decision-making between Indigenous and Western worldviews co-exist. Creating ethical space is especially important when issues at hand impact both Indigenous and non-Indigenous communities. Ethical space can be fostered by 'walking together in parallel paths' where stakeholders with distinct worldviews work together, converge, and collaborate in meaningful ways (Ermine, 2007).

**FSG:** originally known as the Foundation Strategy Group, this organization re-imagines social change by helping groups worldwide find ways to create more equitable and sustainable futures.

**Green Infrastructure:** many cities, including The City of Calgary also use the term green infrastructure to specifically denote stormwater systems that use natural processes and green technologies to improve the quality, and decrease the volume of, stormwater runoff entering our waterways. In some instances (such as with Infrastructure Canada) green infrastructure includes any environmentally based or clean energy infrastructure.

**Governance Paradigm:** are the values, beliefs, assumptions, interpretations, and biases that shape structures, policies, and processes that determine how decision-making and accountability occurs within institutions.

**Human Rights:** are those “that belong to persons simply by virtue of their being human.” (Goodhart, 2011, p. 745).

**imagineCALGARY:** long-term outlook document for The City of Calgary containing the 100-year vision and 30-year targets and goals, as well as strategies for accomplishing these goals. It was developed with input from thousands of Calgarians to help create a sustainable future and exceptional quality of life for generations to come.

**Inclusion:** is the process of creating a culture and environment that recognizes, appreciates, and effectively utilizes the talents, skills, and perspectives of every individual. An inclusive environment uses these skills to achieve the organization’s objectives and mission; connects individuals to the organization; and encourages collaboration, flexibility, and fairness.

**Indigenous Peoples:** refers collectively to First Nations, Inuit and Métis people. The word recognizes the fact that Indigenous peoples are the original inhabitants of Canada. The term is similar to Aboriginal peoples. There are other words that Indigenous peoples may use to describe themselves and therefore, it is a good practice to ask how people wish to be named. It was Indigenous peoples themselves who choose this word at the United Nations level to best describe the original peoples of a territory.

#### **Information and Communications Technology**

**Council:** a national centre for digital economy expertise.

**Infrastructure Calgary (IC):** an enterprise wide, cross-corporate team that provides governance and oversight of The City of Calgary’s Capital Infrastructure Investment Principles. IC provides intentional management of The City’s capital investment across all departments to strengthen decision-making and to maximize value for Calgarians. IC also works with the private sector and public institutions to align and optimize capital investments in order to foster social, environmental and economic value in the Calgary community.

**Infrastructure Status Report (ISR):** The City of Calgary corporate level document which includes business unit data. It reports on the overall state of City assets.

**Integrated Watershed Management (IWM):** is managing the interconnectedness between human activities and natural resources on a watershed basis, to create a resilient water future. IWM takes into account social, economic and environmental factors that influence protection of water resources when balancing the pressures of regional growth and climate change. This interconnectedness must be considered when working together to address the impacts of city-building on watershed management.

**‘In a Good Way’:** is a concept used by many Indigenous peoples to recognize work that is conducted in an authentic and meaningful ways, with intention and sincerity, through reciprocal and respectful relationships. It is a demonstration of working with clear purpose and with high levels of integrity, moral strength and communal spirit (Source: U of C Indigenous Strategy).

**Institutions:** are formal, hierarchical organizations. They come in many organizational forms: for-profit, not-for-profit, and governmental, among others.

- Examples of **for-profit institutions** include, but are not limited to: corporations, companies, banks and other financial institutions.
- Examples of **not-for-profit institutions** include: registered charities, grassroots organizations, community associations, sports and recreation leagues, faith organizations.
- Examples of **governmental institutions** include: all orders of government, justice system, schools and school boards, health care services, and political parties.
- Other types of organizations include: post-secondary institutions, think-tanks or research institutions, etc.

**Leadership Culture:** are the values, beliefs, assumptions, interpretations, and biases that shape the direction and vision of communities and institutions.

**Linking Social Capital:** describes relationships among people or institutions at different levels of societal power, wealth or status.

**Living Lab:** the program where City infrastructure, data and other assets are made available to companies, researchers and individuals to test and try ideas and products in a real-life environment.

**Localism:** is a transfer of public service delivery (e.g. transit, healthcare, education, etc.) from local, provincial or federal governments to local communities.

**Low Impact Development:** is an approach to land development that uses various land planning and design practices and technologies to simultaneously conserve and protect natural resource systems and reduce infrastructure costs. (per Source Water Protection Plan)

**Mental Models:** habits of thought — deeply held beliefs and assumptions and taken-for-granted ways of operating that influence how we think, what we do, and how we talk.

**Microaggressions:** the everyday verbal, nonverbal, and environmental slights, snubs, or insults, whether intentional or unintentional, which communicate hostile, derogatory, or negative messages to target persons based solely upon their marginalized group membership.

**Municipal Natural Infrastructure:** is the collection of resources, ranging from naturally occurring to engineered to mimic nature, that are relied upon by Calgarians, managed, or could be managed by The City of Calgary or regional partners, and that contribute to the provision of one or more municipal services and other resilience benefits. Some lines of service within The City of Calgary may have different or complementary definitions for operational and programming purposes. This definition created for the purposes of this report reflects the definition of *“municipal natural assets (as) the stock of natural resources or ecosystems that is relied upon, managed, or could be managed by a municipality, regional district, or other form of local government for the sustainable provision of one or more municipal services”* (Municipal Natural Assets Initiative 2017) and the Natural Infrastructure definition used by the Canadian Council of Ministers of the Environment (June 2018 report, page 1) where Natural Infrastructure *“refers to existing, restored, or enhanced combinations of vegetation and associated biology, land, and water, and their naturally occurring ecological processes that generate infrastructure outcomes such as preventing and mitigating floods, erosion and landslides, mitigating effects of extreme heat, and purifying groundwater. This is distinct from green infrastructure, which refers to any environmentally based infrastructure.”*

**Natural Assets:** a biotic (e.g. vegetation, fauna and other living organisms) or abiotic (e.g. soil, watercourses, atmosphere) item, thing or entity from which ecosystem services are derived, that has potential or actual value to an organization.

**Operating Impact of New Capital (Incremental):** the additional annual cost to operate and maintain new capital assets requested in 2019-2022. Operating Impact of Previously Approved Capital – the annual cost to operate and maintain capital assets previously approved in the 2015-2018 budgets but not in service until 2019 or later.

**Opportunity Calgary Investment Fund (OCIF):** The City of Calgary and its partners are supporting economic recovery and growth to help reduce the impact of the most recent economic downturn on citizens and businesses and to help ensure Calgary’s ongoing success into the future. As part of these efforts, Council created the \$100-million Opportunity Calgary Investment Fund (OCIF), previously known as the Economic Development Investment Fund, and has established a wholly-owned subsidiary to manage its investments.

**Preliminary Resilience Assessment:** a Preliminary Resilience Assessment (PRA) describes the city profile, the main stresses and shocks in Calgary perceptions of stakeholders and the public and the inventory of actions already in place. The information was drawn from surveys, individual meetings, and workshops with diverse stakeholders. These results led to the identification of four recommended discovery areas that will serve as the basis for Calgary’s resilience strategy.

The PRA is a living document that summarizes the method and principal results of the activities carried out by the resilience team in Phase I of the strategy development process.

**Participatory Democracy and Decision-Making:** supports opportunity for all people to be meaningfully involved in economic, political, and social aspects of civic life. To be successful, participatory democracy and decision-making requires intentional relationships between institutions and individuals/communities that are built on trust and respect. Individuals and diverse communities can genuinely influence policies and programs that impact them.

**Pluralistic Society:** happens when different people or communities coexist. Different groups with varying interests, values, and beliefs are all considered legitimate.

**Polarized Society:** happens when people or communities are extremely divided over particular political issues, policies, and/or people.

**Policies:** government, institutional and organizational rules, regulations, and priorities that guide the entity's own and others' actions.

**Power Dynamics:** the distribution of decision-making power, authority, and both formal and informal influence among individuals and organizations.

**Public Service Delivery:** refers to services which are typically provided by government, either directly or by financing provision of services. Services may include education, law enforcement, healthcare, social services, public transportation, urban planning, etc.

**Practices:** espoused activities of institutions, coalitions, networks, and other entities targeted to improving social and environmental progress. Also, within the entity, the procedures, guidelines, or informal shared habits that comprise their work.

**Racialization:** is the social process by which certain groups of people are singled out for unequal treatment on the basis of race and other characteristics, whether real or imagined.

**Reconciliation:** means a shared and active process between Indigenous and non-Indigenous peoples to transform relationships and understandings by acknowledging what has happened in the past, addressing the impact of colonial policies and then following through with action.

**Relationships & Connections:** quality of connections and communication occurring among actors in the system, especially among those with differing histories and viewpoints.

**Resilience:** 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.

**Resilience Dividend:** a framework that can be used to estimate the net benefits of a resilience project.

**Resource Flows:** how money, people, knowledge, information, and other assets such as infrastructure are allocated and distributed.

**Scenarios:** are descriptions of plausible alternative futures. They paint a picture in the future of how Calgary evolved as it interacted with identified drivers of change. The objective of using scenarios for strategic foresight planning is NOT to predict the future. Scenarios are used to identify potential challenges and opportunities that could emerge. They also help develop robust strategies that may help cope with these challenges and opportunities.

**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. Structural racism occurs regardless of individual prejudices, beliefs or intentions and encompasses both individual and institutional forms of racism. The norms, policies and practices set by the dominant group can prevent the equal participation of, deny opportunities to and/or create barriers for racialized groups.

**Technology Giants:** include Google, Apple, Amazon, Facebook, Netflix, Uber, etc.

**Urban Sustainability Directors Network (USDN):** is a five-part series to support the team's learning of how to apply an equity lens to our work and advance equity in our organizations.

**Watershed:** watersheds include groundwater, springs, wetlands, ponds, streams and lakes as well as all land that drains into these linked aquatic systems. Watersheds reflect both the natural characteristics of their geography and the impacts of human activities within them. (per "Our BiodiverCity: Calgary's 10-year biodiversity strategic plan") <http://www.calgary.ca/CSPS/Parks/Documents/Planning-and-Operations/BiodiverCity-strategic-plan.pdf>

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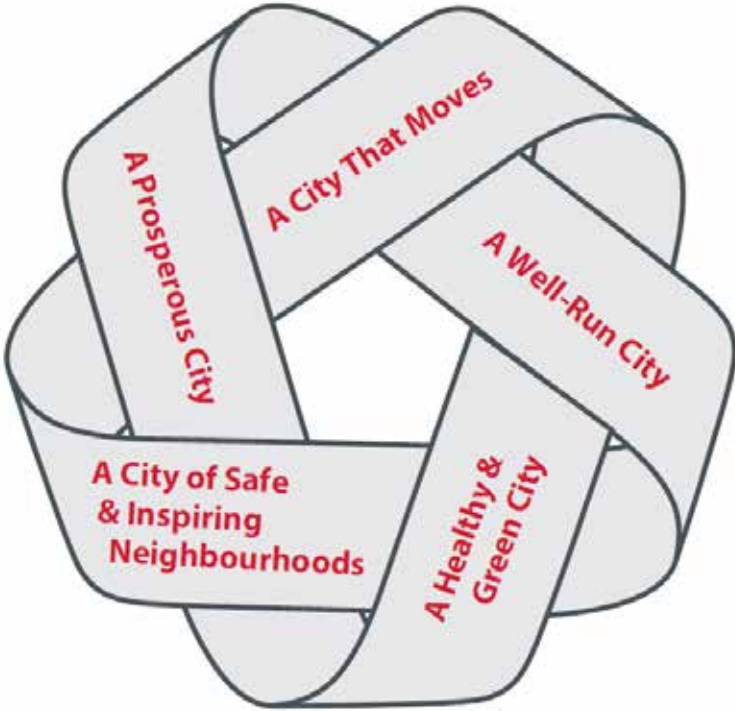
## Appendix 3: Strategic Alignment to Citizen Priorities and Council Direction

### Alignment of Resilient Calgary to Citizen Priorities and Council Directives – One Calgary 2019-2022





Citizen Priority	Shared Theme	The Future of Calgary's Economy	Inclusive Futures	The Future of Calgary's Natural Assets	Future Ready Infrastructure
A prosperous city	S.2 Use a Resilience Dividend Tool	1A.1 Develop talent for emerging economies 1B.1 Understand Digital Disparity 1B.2 Be 5G Ready 1C.1: Support Business Continuity Planning 1D.1: Attraction, Growth and Resilience Dividend 1D.2: Implement a Living Lab Strategy and Governance Model 1D.3 The Future of Calgary's Centre City	2D.1 Encourage business investments addressing inclusion 2D.2 Develop a social procurement policy and strategy 2D.3 Explore guaranteed basic income options	3B.1 Natural Infrastructure Valuation Toolkit adopted to support integrated and informed planning and investment decisions.	4A.1 Apply a resilience lens to strengthen public infrastructure decisions
A city of safe and inspiring neighborhoods		1D.3 The Future of Calgary's Centre City	2A.2 Open spaces for inclusive conversations 2A.3 Advance equity in organizations with a multi-sectoral community of practice	3A.1 Natural Infrastructure Awareness materials shared with different audiences to increase our understanding of the role of natural infrastructure.	
A city that moves	S.1 Deliver a Calgary Foresight Planning Method	1D.3 The Future of Calgary's Centre City			
A healthy and green city		1D.3 The Future of Calgary's Centre City		3A.2 Natural Infrastructure Inventory created to identify our key natural assets relied upon by Calgarians to deliver services. 3C.2 Implementation Support to develop design criteria and pilot a collaborative approach to innovative and strategic natural infrastructure investments.	4B.1 Implement our Integrated Watershed Management plan 4B.2 Watershed Investment Strategy

Citizen Priority	Shared Theme	The Future of Calgary's Economy	Inclusive Futures	The Future of Calgary's Natural Assets	Future Ready Infrastructure
A well-run city	S.1 Deliver a Calgary Foresight service S.2 Use a Resilience Dividend Tool S.3 Review the Triple Bottom Line Policy		2A.1 Diversify representation on boards 2A.2 Open spaces for inclusive conversations 2B.1 Support to revitalize Indigenous cultures and languages 2B.2 Walk parallel paths together	3B.2 Natural Infrastructure Integration into City of Calgary land, asset management and financial reporting processes. 3C.1 Policy Integration to align and embed natural infrastructure into current and new relevant policy.	4A.2 Maintain and improve the infrastructure that supports service needs

2019-2022 Citizen Priorities



## Appendix 4: United Nations Sustainable Development Goals Alignment

	 The Future of Calgary's Economy	 Inclusive Futures	 The Future of Calgary's Natural Infrastructure	 Future Ready Infrastructure
Goal 1: No Poverty	●	●		
Goal 2: Zero Hunger				
Goal 3: Good Health and Well-Being			●	●
Goal 4: Quality Education	●	●		
Goal 5: Gender Equality	●	●		
Goal 6: Clean Water and Sanitation			●	●
Goal 7: Affordable and Clean Energy				
Goal 8: Decent Work and Economic Growth	●	●		●
Goal 9: Industry, Innovation and Infrastructure	●		●	●
Goal 10: Reduced Inequality		●		
Goal 11: Sustainable Cities and Communities			●	●
Goal 12: Responsible Consumption and Production				
Goal 13: Climate Action			●	●
Goal 14: Life Below Water				
Goal 15: Life on Land			●	●
Goal 16: Peace, Justice and Strong Institutions		●		
Goal 17: Partnerships to achieve the Goal				

**United Nations Sustainable Development Goals**, also known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity.



## Appendix 5: Leveraging Existing Calgary Plans: Strategic Alignment to Council and Community Approved Documents

Our vision for Calgary is well established through imagineCALGARY. Fortunately, a wealth of existing and planned efforts also contribute to Calgary's resilience. This strategy aims to build upon these to help shape future city plans. The Resilient Calgary strategy has been developed in conjunction with the following programs.

**Age-Friendly (Seniors) Strategy** presents a vision and principles for creating a more age-friendly Calgary, as well as population-level results, strategies, partners and proposed actions within each of six local priority areas ranging from access to information and services, housing, health, participation, prevention and response to Elder Abuse and transportation and mobility.

**Business-Friendly Strategy (in development)** The Business-Friendly Strategy will focus on improving and highlighting the municipal initiatives and actions to support businesses at each stage of the business cycle.

### Calgary Corporate Accessibility Policy

This Council Policy provides a collective and coordinated approach to the inclusion of persons with disabilities and the accessibility of City programs and services. It will promote an environment in which all persons can participate in and contribute to the social, economic and political life in Calgary.

### Calgary in the New Economy

The Economic Strategy for Calgary is a road map that directs collaborative economic development activities and establishes shared priorities with, and for, community stakeholders. It is a living document that sets direction and establishes priorities while evolving to adapt to changing times. Calgary has a well-deserved reputation for inclusion, entrepreneurship and community spirit and those values have influenced the development of the Strategy.

### Calgary Transportation Plan

The Calgary Transportation Plan (CTP) provides policy direction on multiple aspects of the city's transportation system. Successful application of the CTP policies will move Calgary towards a more sustainable future — for our economy, our environment and our citizens.

### Centre City Plan Refresh

The Centre City Plan is a strategy document that provides the long-term vision, strategy and implementation actions for the Centre City.

### Climate Resilience Strategy

Council approved the Climate Resilience Strategy on June 25, 2018. The Strategy provides the main direction for Climate Resiliency in Calgary. Included within the Strategy are the Action Plans for mitigation and adaptation to guide The City's role and actions over the next ten years.

1. The Climate Mitigation Action Plan identifies the actions of The City to ensure services, enabling activities, regulations and operations are provided to reduce greenhouse gas emissions, improve energy management and enable the low carbon economy. It includes five themes (buildings and energy systems, land use and transportation, consumption and waste, natural infrastructure and leadership) that cover the largest areas of impact for emissions and energy in Calgary.
2. The Climate Adaptation Action Plan identifies the risks and vulnerabilities from severe weather events and identifies actions to manage the climate risks for Calgary in five themes (people, infrastructure, natural infrastructure, water management and governance). The plan helps us to respond to a changing climate by implementing risk management measures to reduce the impact of extreme weather events and climatic changes on infrastructure and services.



### **Council Directives & Citizen Priorities**

Council Directives include five priority areas — stemming from the imagineCalgary vision which will ensure Calgary remains a great place to make a living and a great place to make a life.

- A Prosperous City – Calgary continues to grow as a magnet for talent, a place where there is opportunity for all and strives to be the best place in Canada to start and grow a business.
- A City of Safe and Inspiring Neighborhoods – Every Calgarian lives in a safe, mixed and inclusive neighborhood and has the right and opportunity to participate in civic life. All neighborhoods are desirable and have equitable public investments.
- A City That Moves – Calgary’s transportation network offers a variety of convenient, affordable, accessible and efficient transportation choices. It supports the safe and quick movement of people and goods throughout the city and provides services enabling Calgarians and businesses to benefit from connectivity within the city, throughout the region and around the globe.
- A Healthy and Green City – Calgary is a leader in caring about the health of the environment and promotes resilient neighborhoods where residents connect with one another and can live active, healthy lifestyles.
- A Well-Run City – Calgary has a modern and efficient municipal government that is focused on continuous improvement to make life better every day for Calgarians by learning from citizens, partners and others.

### **Gender Equity and Diversity Strategy**

A dedicated, City of Calgary-wide strategy is under development to advance equity for diverse groups of women, men and gender-diverse people.

### **Industrial Land Strategy**

Real Estate & Development Services (RE&DS) has developed a long-term Industrial Land Strategy for the development of City-owned lands. The strategy provides a framework for how The City will develop and service City-owned land with the goal of adding to Calgary’s economy and making our city a great place to work and live.

### **Integrated Watershed Planning Strategic Framework**

The City of Calgary works to ensure we have a healthy, resilient watershed capable of providing clean, reliable water for our current needs and future generations. The City is dedicated to implementing the Government of Alberta’s Water for Life Strategy through an integrated water management framework that ensures reliable and resilient water servicing for Calgary and regional customers. The City provides drinking water and wastewater treatment to about one in three Albertans. Working with the Province and regional partners, The City aims to protect the water supply, use water wisely, keep rivers healthy and build resiliency to flooding.

### **Living Lab Strategy (in development)**

A Living Lab strategy supports increased economic diversification and jobs for Calgarians. It can help entrepreneurs bring big ideas to fruition, support investment in our local economy and make Calgary more business friendly.

### **Municipal Development Plan**

Calgary’s Municipal Development Plan and its accompanying maps were adopted by City Council in 2009. It contains policies that will shape how Calgary grows and develops over the next 30 to 60 years, and is built on seven interrelated goals. Calgary is expected to grow by another 1.3 million people over that time which makes it important that we plan for our future.

### **One Calgary**

One Calgary was the name given to The City of Calgary’s 2019-2022 Plans & Budgets. The 2019-2022 Plans and Budgets describe how we’re addressing ongoing challenges, providing essential services and delivering on Council’s vision for Calgary.

### **Social Well-Being Principles**

In May 2018, Calgary City Council approved a set of Guiding Principles for Social Well-Being which states that The City will:

- Strive to provide equitable services, including removing barriers to access and inclusion.
- Advance the shared and active process of Truth and Reconciliation in collaboration with the community.
- Seek opportunities to support and grow culture.
- Aim to stop problems before they begin using a prevention approach.

These principles are intended to act as a foundation to inform how The City makes decisions and delivers services in a manner that meets the needs of all Calgarians. In addition, The City of Calgary established a Social Well-Being Advisory Committee in 2018 to provide advice on how The City can advance these principles in City services.

### **The City of Calgary's Indigenous Policy**

This policy guides meaningful long-term efforts to bring Indigenous identities, histories, cultures, languages, traditions, principles, world views, relationships and ways of knowing into municipal planning, advising and decision-making efforts.

### **The City of Calgary Charter**

City Charters are special legislative agreements that redefine the relationship between the Government of Alberta and the two biggest cities, Calgary and Edmonton.

*The Municipal Government Act (MGA)* governs all the municipalities in Alberta, from the smallest summer village (Betula Beach, population 10) to the largest cities (Edmonton, population 900,000 and Calgary, 1.2 million). While the MGA will continue to guide the majority of what Calgary and Edmonton do from day to day, the City Charters are specific to the needs of each of the two cities, their large-scale populations, and the large-scale challenges they face.

City Charters focus on some key policy areas amended to address the cities' specific needs, aligning funding with responsibilities, and providing the flexibility needed to ensure Alberta's two largest cities remain accountable to citizens and respond effectively to future challenges and opportunities.

### **Triple Bottom Line (TBL) Policy**

The TBL policy reflects a greater awareness of the impacts of our decisions on the environment, society and the external economy — and how those impacts are related.

### **United Way of Calgary and Area: The Way Forward**

As a social impact organization, United Way of Calgary and Area has set three foundational goals that will advance their mission to mobilize communities for lasting social change. (1) Deepening Community Impact (2) Inspire relationships and generate resources (3) Demonstrate excellence as a trusted high-performing organization.

### **The City of Calgary: Capital Infrastructure Investment Principles**

With the development of One Calgary Service Plans and Budgets and following the 2019-2022 Council Directives that includes Council's Five Guidelines to Administration, the revised Capital infrastructure Investment Principles provide greater alignment to The City's shift toward service plans and budgets, and is intended to strategically better accommodate shocks and stresses through changing internal and external pressures. Intentional management of capital at The City will:

1. **Support the delivery of City of Calgary services, at approved service levels.** Capital investments facilitate the delivery of services to residents. Services and service levels are defined by Council through the approval of multi-year service plans and budgets. The primary criteria for identifying, prioritizing and funding capital investments will be the need for capital to deliver services at approved service levels and the associated operating impact of this capital.

2. **Promote the well-being of communities, environment and economy.** Capital investments are intended to promote the well-being of a community through improved connectivity, accessibility, inclusion, and environmental health as well as long-term resilience. The range of typical social, economic and environmental objectives accomplished through infrastructure investments includes benefits such as maintaining public safety and security, improving economic productivity, facilitating community cohesion, addressing risks and vulnerabilities for service providers, reducing the impact on climate change and enhancing public spaces and interactions within communities.
3. **Build an adaptable, resilient and smart city.** With adaptable and resilient infrastructure, The City can better manage risks and vulnerabilities to shocks and stresses. Resilient infrastructure is designed to ensure service delivery (meeting the needs of today while anticipating and not compromising the needs of tomorrow), adaptation (capacity to withstand disruption, both natural and man-made), community preparedness and financial strength. Infrastructure should also be designed to be resilient to the effects of climate change, and respect and help maintain ecological and biological diversity.
 

Smart cities utilize data innovation and technology to better inform decisions on service delivery, purpose and size of capital investments, economic development and resident empowerment and inclusion. Capital infrastructure planning and investments provide potential opportunities to explore, incubate, and potentially utilize innovative technologies, design, services and practices.
4. **Enhance the long-term value of City assets.** Capital planning and investment at The City requires a thorough appreciation of the long-term implications of service demand and asset needs, legal and regulatory provisions, technological trends, finance and asset ownership along with the integration of whole-of-life costing (i.e. asset acquisition, operation, maintenance and upgrades, and responsible disposal viewed through a single lens of asset stewardship). Capital planning and investment is necessary to deliver citizen-facing services as well as supportive services (within The City's control), to maximize the value to residents while minimizing service disruption, public safety and security risks, energy and environmental impacts and whole-of-life cost. Adopting industry-standard systematic asset management practices reduces legal and reputational risks to The City and improves accountability and transparency to the tax payer.
 

To maximize the value of The City's previous and proposed capital investments, funding is required for the development of asset management plans addressing costs across the entire lifecycle (planning, building/ acquisition, operation, maintenance, evaluation and eventual disposal) and the prioritization of municipal capital investment to support intensification prior to the completion of communities in planned and/ or future greenfield areas. Maintaining the overall asset health is necessary to ensure The City's ability to reliably and sustainably deliver Council-approved levels of service. Resources need be allocated to achieve an appropriate balance between the maintenance and renewal of existing infrastructure and the demand for new growth infrastructure.
5. **Integrate, coordinate and optimize The City's investment.** Capital investments should be managed in a way which provides maximum value to the community. An integrated and coordinated approach to capital planning, prioritization and funding — administered at the corporate level — refines investments, identifies efficiencies and achieves economies of scale. Where possible, The City's capital investments should contribute to multiple services and ensure continuity during times of normal use, emergency response and recovery. Regional benefits should also be considered.
 

Infrastructure investments may be coordinated or focused upon an identified investment need, support a service gap in the community, and/or contribute to alignment with external (i.e. private, provincial, federal) investment for a specific time. A directional investment focus may influence the corporate-level identification, prioritization and funding for capital investments.

Council recognizes the need to embrace appropriate levels of risk, innovation and experimentation as opportunities to improve. Capital planning and investments create opportunities to explore and potentially make use of innovative technologies, design, services and practices.

6. **Optimize financing and funding sources.** The development of a fiscally sustainable corporate approach to financing and funding will maximize The City's opportunity to provide capital investments that support service delivery. Allocating the most restricted funding sources first, and switching accordingly (where permissible) to free up more flexible funding will enable The City to more effectively respond to current and emerging funding opportunities.

Focusing on long-term financial strategies, attracting private and other government investments and/or other alternative funding mechanisms (such as shared service delivery models and cost/revenue sharing mechanisms) creates the opportunity to realize greater economic and social value. Developing partnerships with external organizations to reach common goals for Calgarians will further promote entrepreneurship and investment within the city.