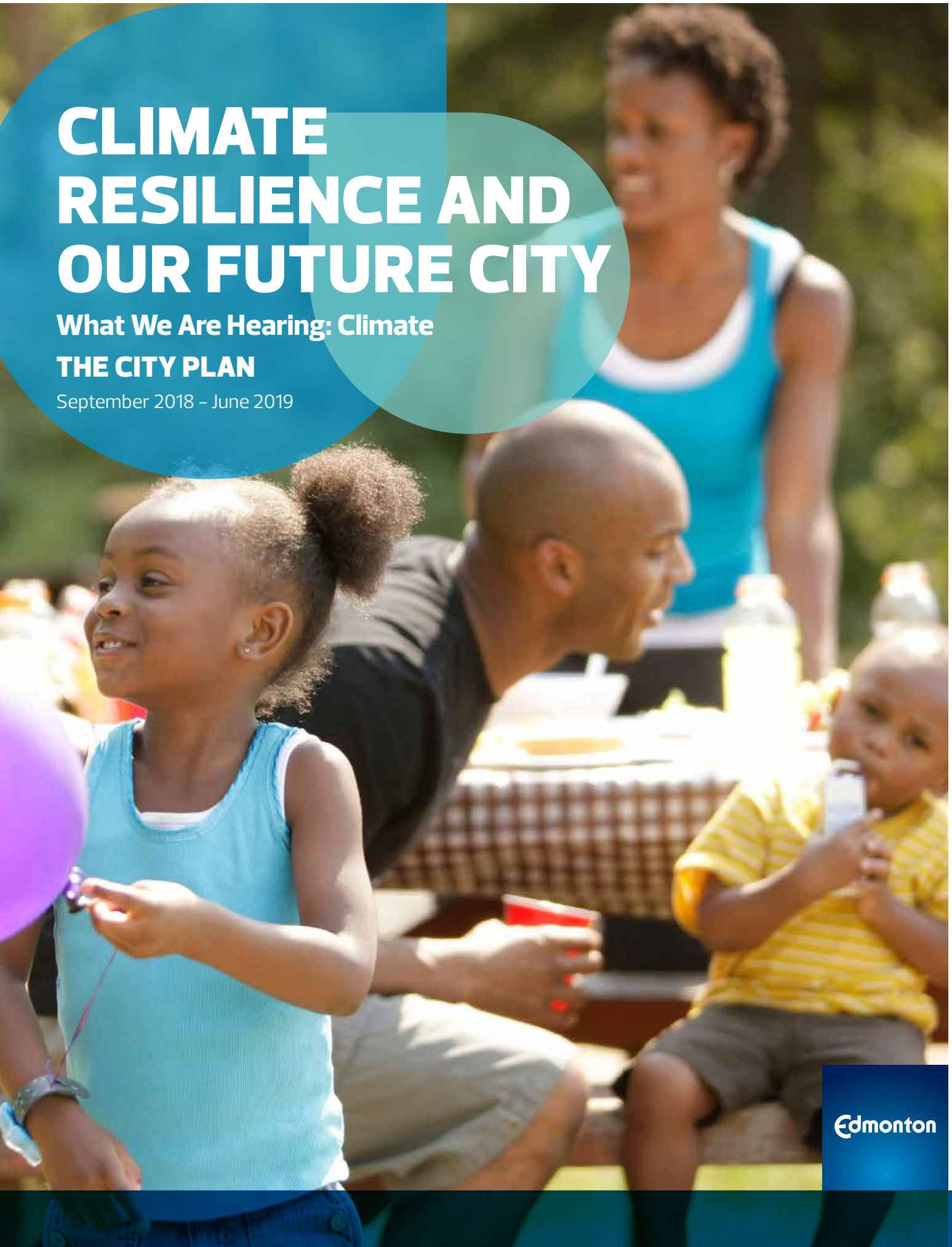

CLIMATE RESILIENCE AND OUR FUTURE CITY

What We Are Hearing: Climate

THE CITY PLAN

September 2018 – June 2019

Edmonton

Acknowledgements

We acknowledge the traditional land on which Edmonton sits, the Territory of the Treaty 6 First Nations and the Métis Nation of Alberta Region 4. We would like to acknowledge and thank the diverse Indigenous peoples whose ancestors' footsteps have marked this territory for centuries such as: Cree, Dene, Saulteaux, Nakota Sioux, Blackfoot, as well as the Métis and the Inuit.

Edmonton is a welcoming place for all people who come from around the world to share Edmonton as a home. Together we call upon all of our collective honoured traditions and spirits to work in building a great city for today and future generations.

The authors thank everyone who participated in the engagement activities. Your contributions are greatly appreciated and we hope you see your values and ideas reflected in these pages.

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ENGAGEMENT SNAPSHOT

WHO WE ARE HEARING FROM

Throughout The City Plan project phases, specific efforts were made to reach a diverse range of Edmontonians of different age, cultural and socio-economic background in different geographic areas of the city.

5000 Pre-engagement data points
67 Events
1438 People attended in person events

23 Workshops
16 Coffee Chat communities
1950 Students engaged across Edmonton

625 Person hours of workshops

5,402 Survey responses
3,308 Responses to open-ended questions
18,000 Responses to closed survey questions

13 Models built
2,430 Card Game responses
33 Blocks Game scenarios

6 Meetings with youth organizations
23 Meetings with Regional Indigenous Nations and Organizations
19 Neighbouring municipalities represented

1

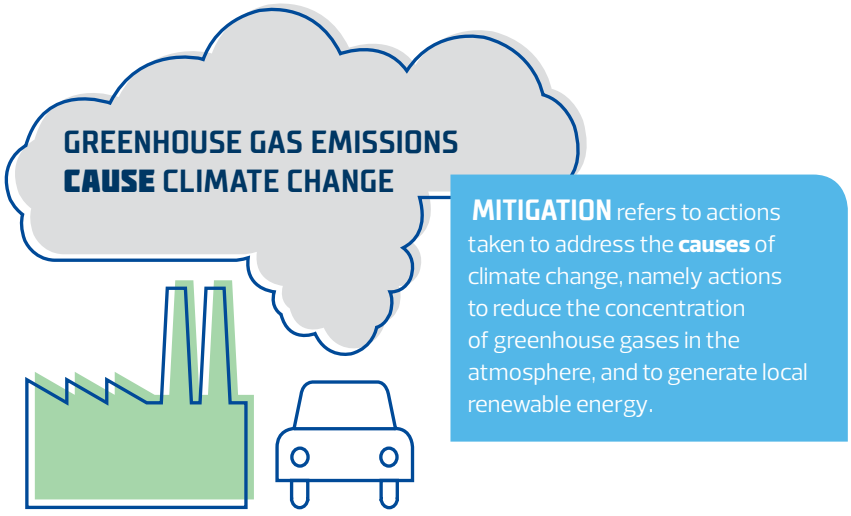
CLIMATE RESILIENCE & ENERGY TRANSITION STRATEGY

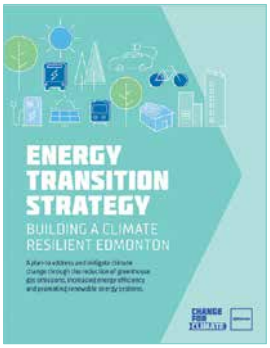
Climate resilience is one of the four goals of Edmonton's strategic plan ConnectEdmonton (Vision 2050). Climate resilience is about transitioning Edmonton to a low carbon future with clean air and water while adapting to a changing climate. To achieve this, the City of Edmonton developed the *Community Energy Transition Strategy* (2015) and the *Climate Resilient Edmonton: Adaptation Strategy & Action Plan* (2018), with the best scientific research and advice available, to help mitigate the risks of climate change and adapt to a changing climate.

On Aug. 27, 2019 City Council declared a climate emergency and directed administration to update the Community Energy Transition Strategy to align with the international target of limiting global warming to 1.5°C. While the Strategy is currently being implemented, to help Edmontonians, businesses and organizations mitigate their impact on climate change, it is also in the process of being updated. The updated Strategy will work within a local carbon budget of 155 Megatonnes and will be guided by the six Climate Shifts described on page 7. The Adaptation Strategy and Action Plan is not being updated at this time.

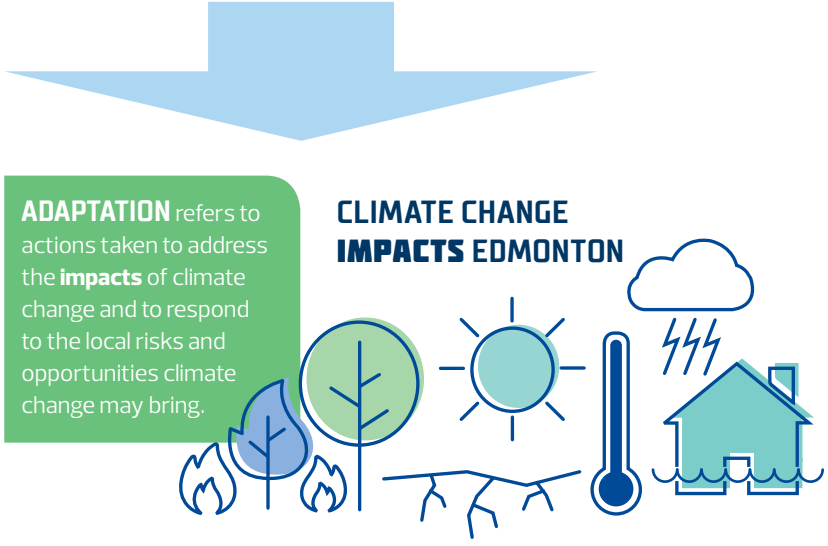
Edmonton's Community Energy Transition Strategy is a risk management response to a carbon constrained world. The strategy was designed to accelerate Edmonton work to take direct and indirect action to reduce greenhouse gas emissions, and increase renewable energy and energy efficiency across all sectors. The actions were designed to position Edmonton to prosper in a low carbon economy, and to take advantage of emerging opportunities in clean technology and carbon abatement.

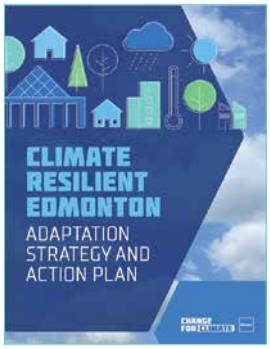
Figure 1. Mitigation and adaptation diagram





Energy Transition Strategy and Civic Operations Greenhouse Gas Management Plan





Climate Resilient Edmonton: **Adaptation Strategy and Action Plan**

CLIMATE SHIFTS

CLIMATE SHIFT 1

TOOLS & TARGETS

One of the foundations of the updated Strategy will be to use a local carbon budget to set its goals and to monitor its progress. Edmonton's carbon budget has been calculated using an internationally accepted methodology to be 155 Megatonnes. This is the amount of greenhouse gas emissions Edmonton can emit between 2017 and 2050 to meet the global target of limiting global warming to 1.5°C. Setting targets based on a carbon budget allows municipalities to visualize the urgency of the need for change. Every year that emissions are added to the atmosphere essentially reduces the remaining local carbon budget.

CLIMATE SHIFT 2

LOW CARBON CITY AND ZERO EMISSONS TRANSPORTATION

Intensification of land use reduces emissions but it also drives transportation choices. A built form that includes low carbon dwellings and a high proportion of trips taken by active transportation and public transit will reduce emissions in Edmonton.

CLIMATE SHIFT 3

EMISSIONS NEUTRAL BUILDINGS

Buildings represent approximately 30% of Edmonton's greenhouse gas emissions. Approximately 80% of the buildings that will exist in 2050 have already been built. Both new and existing buildings need to reach a carbon neutral state in the future.

CLIMATE SHIFT 4

RENEWABLE REVOLUTION

Zero emissions energy is required both to reduce existing emissions and to ensure no new emissions are added. Proven technologies like solar will need to be deployed at scale. A circular economy and sustainable waste management practices including reducing waste at the source will be essential for a low carbon future.

CLIMATE SHIFT 5

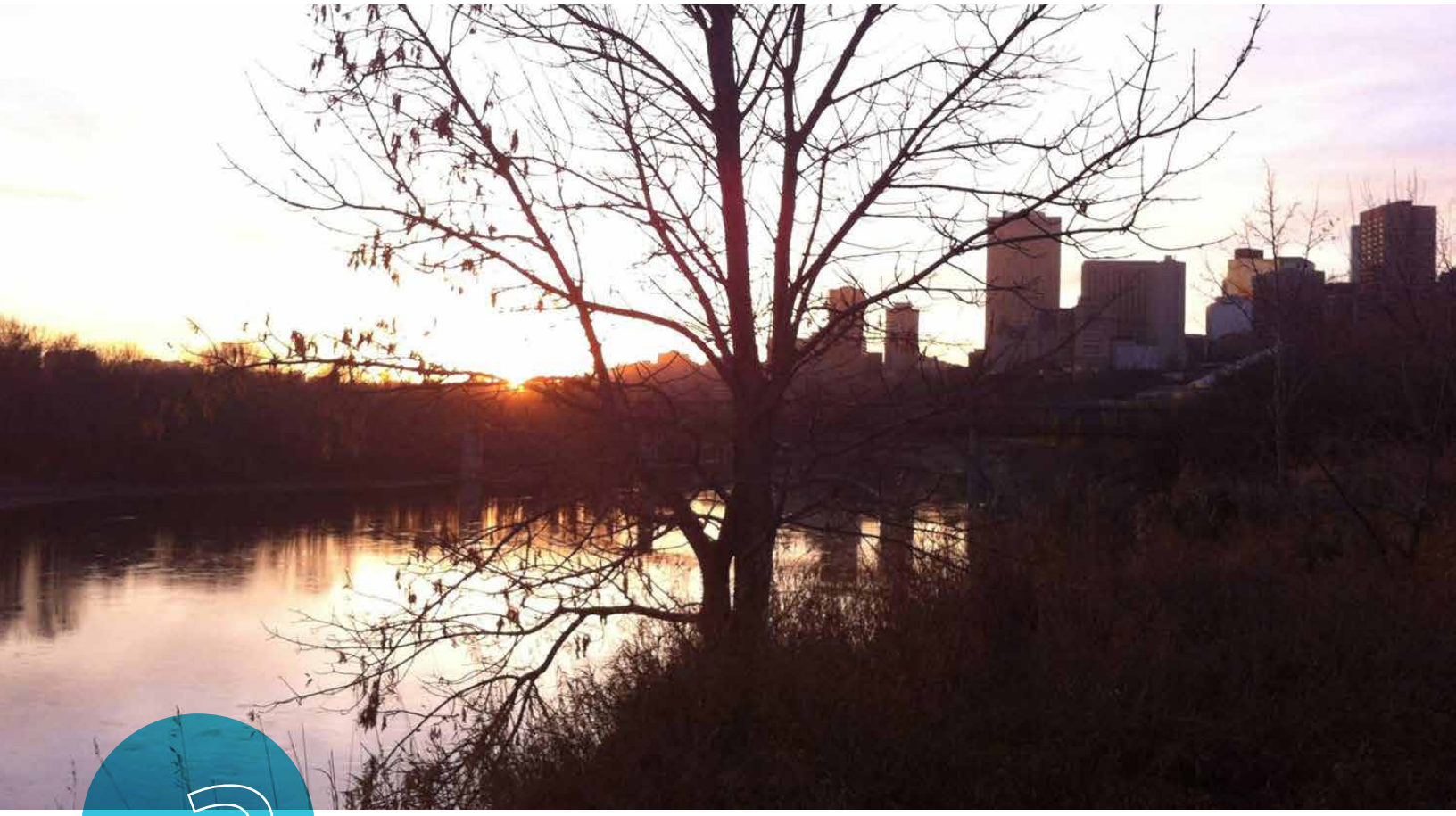
JUST AND EQUITABLE TRANSITION

A critical component is to ensure that all Edmontonians have access to the opportunities a low carbon future provides. Attention to the reduction of energy poverty, gender equity and ensuring access to green jobs for the vulnerable populations will be critical.

CLIMATE SHIFT 6

NEGATIVE EMISSIONS

Even if Edmonton is able to aggressively reduce its overall greenhouse gas emissions, modelling suggests that there will still be residual emissions to manage. A combination of natural and technological solutions for direct removal of carbon and sequestration and/or utilization of that carbon is required.



2

WHAT WE ARE HEARING ABOUT CLIMATE

Prior to City Council's decision to declare a state of climate emergency in August 2019, Edmontonians had already started to express urgent concerns about making major changes to address our environmental impact as a city.

The following pages summarize the climate-related feedback received to date through engagement for The City Plan, and the Vision 2050 engagement that has informed The City Plan. The City Plan engagement was designed to intentionally gather input from a wide cross section of Edmontonians. While this engagement did not explicitly ask about climate, climate did surface as a theme of interest. This document captures feedback about climate and will be used to inform the update of Edmonton's Community Energy Transition Strategy.

For a full report of what we heard through The City Plan engagement, who we listened to and how we listened, please visit www.edmonton.ca/thecityplan

- **What We Are Hearing: October – November 2018**
- **What We Are Hearing: November – December 2018**
- **What We Are Hearing: January – June 2019 (City-Wide Engagement)**
- **What We Are Hearing: January – June 2019 (Indigenous Engagement)**

INDIGENOUS VOICES

Indigenous communities shared that they need to be involved in City projects earlier to share perspectives about the environment and the impacts that they are experiencing in their home communities surrounding Edmonton, and Edmonton regionally impacts rivers, air, and wildlife in their communities. There is still a perception that what Indigenous communities are sharing is not being heard and acted upon.

When asked about their future aspirations during engagement for the City Plan, participants were not focused on specific actions, goals or targets related to climate change. As participants were not directly engaged on the specific Climate Shifts, responses often highlighted ideas related to the quality of life, quality of the river and valley, and the importance of protecting the environment. Generally, five themes emerged from the City Plan Indigenous Engagement data that have direct ties to climate and the resilience of the city.

Natural Areas and Wildlife

Communities are concerned that natural areas are disappearing in the city that contains wildlife corridors and traditional plants. Indigenous communities believe everything has a spirit and is alive and is equal, not greater than another. Although Indigenous communities have been engaged on environmental monitoring, additional work is required to understand the broader regional cumulative impacts that extend beyond the city limits.

North Saskatchewan River and Other Water Bodies Are Important

The forts in Edmonton located beside the North Saskatchewan River were important trading posts; the North Saskatchewan River was an important component of the Indigenous economy helping to bring trade goods to the fort and helping them to purchase supplies for themselves and their community. Rivers were also used to help access hunting grounds and areas for gathering plants and medicines. Rivers were also used to help Nations to gather, celebrate and share and participate in ceremonies, which is one of the ways Indigenous communities could pass on wisdom, knowledge, traditions, and stories important to sustaining their way of life.

Indigenous communities that still use the river system are concerned about the rivers drying up. Some communities that are downstream of the city are concerned about the pollutants coming into their communities and that contaminated water will impact their drinking water. Concern was also raised about pollution contaminating the fish, which are caught and eaten by Indigenous people.

Protect Natural Areas and Create New Green Spaces

Natural areas and green spaces are more than parks for Indigenous people, they provide important cultural and spiritual qualities supporting, their mental, physical, and spiritual well-being. Indigenous people have a strong and very unique connection to the environment, including the land, water, air, and everything living in the environment. The expression "all my relations" is often used to reflect that everything is connected.

Through previous engagements several Indigenous communities referenced the importance of having natural areas free of pollution and contamination. Many Indigenous people use natural areas to practice cultural ceremonies and to collect and harvest traditional plants and medicines. These natural areas are important places to teach future generations about culture, language, and connection to the land that help them protect and preserve their way of life.

Ideas on Renewable Energy

Many Indigenous communities were familiar with renewable energy, as many communities in attendance of the engagement session had their own forms of renewable energy projects including wind and solar. During engagement sessions, Indigenous communities specifically identified that the City could look at utilizing "green energy", "green power", and explore "reusing waste for energy". Indigenous communities have also recommended that the City seek out best practices from other countries (e.g., Germany) around the world.

Implement Recycling Programs

Throughout the engagement, Indigenous communities referenced the importance of recycling programs suggesting ideas such as: composting, gray water, water barrel program, and reusing products and reducing how much waste goes to the landfill.

CITY-WIDE ENGAGEMENT AND CLIMATE SHIFTS

When asked about their future aspirations as a city, participants were not focused on specific actions, goals or targets related to climate change. Responses often highlighted ideas related to quality of life, including access to amenities, services, affordable housing, reasonable commutes and job opportunities. Analysis of the data identified where those quality of life aspirations aligned with the climate shifts at the centre of the update of the Community Energy Transition Strategy. The text below highlights common themes related to climate change and sustainability received in the city-wide engagement for The City Plan.

CLIMATE SHIFT 1

TOOLS & TARGETS

Participants broadly identified that they would like to see Edmonton reduce its ecological footprint and greenhouse gas emissions. On the whole, these statements did not have an amount or time frame attached to them.

More Than Just Greenhouse Gas Emissions – Perception of environmental sustainability is focused on more than just limiting CO_2e emissions. Overall, responses were more likely to identify concerns about our collective ecological impacts like habitat degradation, or polluted waters, than global climate impacts.

General Aspirations – High-level aspirations like "be greener", "be a climate leader" and "reduce our carbon footprint" were frequent. Specific actions were not identified.

"Greener" Is Not Enough – Saying "Greener" as part of The City Plan is not enough to meet the high bar of reaching the Paris Climate Agreement. Without clear and specific goals, ideas can be "green-washed" and approved. Guidelines should have clear thresholds and requirements for a range of topics including building and community design practices.

Track Metrics – It is crucial to have specific metrics and regularly monitor goals so we can understand how our decisions bring the city closer to its aspirations. Climate indicators and alignment with the Edmonton Declaration were specifically identified.

Specific targets – Adhering to international, national and local climate goals is important. (Limit increase in global average temperature to 1.5 degrees, a 40% reduction in emissions by 2050, and having all new buildings be built to Net Zero standards or better by 2030.)

Apply a Universal Climate Lens – All decisions should be made with consideration of climate impacts. Formally adding this lens to the decision-making process will help to ensure that Edmonton's climate goals are given a high priority and that its goals are actively considered at all stages of service delivery and policy making.

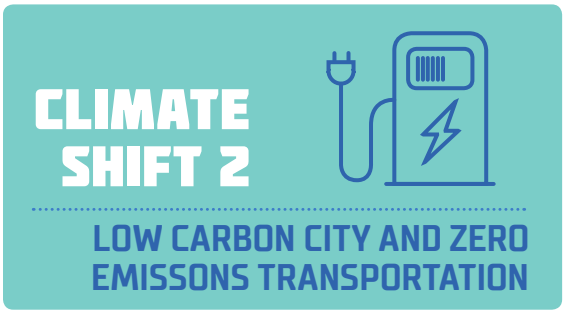
Consistency – Consistency over time is crucial to realizing major changes. Realizing goals requires implementation; decisions should be made only in alignment with goals.

Other Ideas

In addition to the above, participants also identified these ideas:

- Monitoring of air and water quality to address local environmental impacts; and
- Some participants indicated the need to use other metrics including 8/80 principles, Gender Based Analysis (GBA+), among others to help measure how the climate shift impacts people's quality of life and other factors associated with a just and equitable transition.

"Psychologically we need to shift, it's not passion, it is terror. That's taking over the whole world and we don't want to be stuck with a plan that does not go far enough on that."



The majority of responses received were focused on actions related to building a low carbon city. Edmontonians have clear ideas about the ways that the built form of our city can change to influence CO_2e emissions.

City Design Relies on Driving – Edmontonians recognize how the current design of our city directly contributes to CO_2e emissions. Reasons cited: how far Edmontonians have to travel to get to work and services, and how our cold winters have both contributed to large parts of the city being car-oriented or dependent. Driving is by far the best way to get around compared to transit or other modes, and even more so in the winter.

Car Dependency is Not Equitable – For most Edmontonians, living without a car is not a viable option. Reasons cited: cold climate, the design of suburban neighbourhoods and poor transit service. This is especially true for families, people who don't work downtown and people living in new suburbs. Without significant investment, achieving a greater uptake of public transportation and active transportation will be very challenging and will not occur equally across the city.

Electric Vehicle Adoption – Given Edmonton's existing car dependence and the magnitude of change required to reduce that dependency, it is important to find ways to speed the overall electrification of private vehicles in order to reach Edmonton's climate goals.

Exceptional Future Transit – The poor quality of Edmonton's existing transit system directly contributes to participants' decision to drive for their daily needs. To attract significantly more riders, the quality of the transit experience needs to improve. Common complaints raised against the existing system included long wait times, waiting in the cold, feeling unsafe both waiting and riding, as well as how long it takes to get to destinations compared to driving and the overall cost of transit, especially when considering paying for multiple family members and park and ride services. Ideas brought forward as part of these changes included:

- Make certain parts of the city free for transit;
- Build more transit priority infrastructure;
- Develop additional bus shelters;
- Expand the LRT network to serve a greater portion of the city including low income areas; and
- Improve neighbourhood access to bus transit.

Build a Low Carbon City – There is a desire to build a low carbon city by promoting more sustainable transportation systems including mass transit, walking, biking and electric vehicles. Reducing urban expansion into surrounding farmland and addressing car dependency across the city, especially in outlying areas can take place by reshaping the city. There are concerns about infill development and taking road space away from cars.

Safe Active Transportation – Active transportation networks that feel safe for a broad range of users are needed.

Local Access to Services – It is important to have communities in which it is possible to access services and amenities without a vehicle. The current design of neighbourhoods requires Edmontonians to drive; changes that encourage and enable residents to make more trips without a vehicle are desirable.

Design Well Integrated Future Communities – Edmonton's climate aspirations need to be considered in the design of greenfield areas, where a large portion of Edmonton's growth occurs. Special attention needs to be paid to fully integrating major transportation transit rights-of-way, either for bus rapid transit or LRT into the design of new neighbourhoods.

Green Infrastructure – Green infrastructure can directly contribute to Edmonton's low carbon future. This includes the development of priority lanes for "green vehicles", expanding the LRT network, higher efficiency buildings, and active transportation corridors. Green transportation systems should efficiently connect the suburbs to other parts of the city and the core.

Role of the Private Sector – Identifying the roles of private businesses, service providers and utilities in helping Edmonton achieve its sustainability goals is important.

Evolve Carbon Emitting Industries – Reducing the impact of "carbon-emitting industries" to reduce Edmonton's climate impacts is an opportunity. While this is desirable from an environmental perspective, there is a need to evolve these industries to avoid eliminating jobs and livelihoods. Support to workers and their families impacted by the evolution of carbon industry is needed.

Develop Along Green Transportation Corridors – The co-location of additional medium and high-density residential development alongside major green transportation corridors, like frequent bus transit or LRT, is important.

Other Ideas

In addition to the above, participants also identified these ideas:

- Establish a "cap and trade" system to manage suburban growth;
- Establish car free areas to promote active transportation and transit to major destinations;
- Develop solutions to the "last mile" problem of transit systems;
- Create expanded green spaces that are more accessible and dispersed throughout the city;
- Promote opportunities for local food and urban agriculture;
- Redevelop and intensify existing neighbourhoods instead of developing in the suburbs;
- Connect greenspaces as part of the multi-modal transportation network; and
- Improve use of underutilized land instead of expanding the city.

CLIMATE SHIFT 3

EMISSIONS NEUTRAL BUILDINGS

Compared to the other Climate Shifts, there were fewer responses related to carbon neutral buildings. Despite this, when carbon neutral buildings were raised by participants, there was consensus that more should be built. The significant role that carbon neutral buildings can play in achieving global climate goals was not identified.

Green Incentives – Incentives and rebates to undertake green renovations in Edmonton are desirable. These renovations, such as installation of high efficiency windows and re-insulation of older residential buildings, are often seen as more expensive or challenging than traditional building practices.

Renovate and Retrofit Heritage Buildings – Vacant and heritage buildings can be renovated and retrofitted to preserve Edmonton's character. It is possible to renovate the interior of buildings and maintain the façade: green retrofits.

Community Scale Carbon Retrofits – Supporting individual building owners interested in achieving carbon neutrality was mentioned. There was little mention of the massive scale at which these renovations are needed to bring buildings towards carbon neutrality.

"ENVIRONMENT! Our vision must have something such as: Green Initiative etc. etc. Global Warming is real and if we don't do anything, the temperature of our planet WILL go up."

CLIMATE SHIFT 4

RENEWABLE REVOLUTION

Mention of the renewable revolution was more often mentioned at workshops than at drop-in events. Overall, participants were supportive of renewable revolution ideas.

Renewable Energy Production – Future energy production should come from renewable sources. This involves limiting the use of coal and other fossil fuels for energy production and heating in order for Edmonton to meet our local commitments to the Paris Climate Agreement.

Type of Energy – Greater use of solar, hydro and wind energy, as well as exploration of nuclear energy, are possibly sources of future energy. There is a need for large-scale retrofitting of existing homes and buildings for solar energy production and greater adoption of electrified transportation options.

Manage Waste Wisely – The management of, and how we handle our waste products is important. It is important for Edmontonians to divert material from landfills, be better recyclers, and compost organics. Consumer culture plays into our carbon footprint.

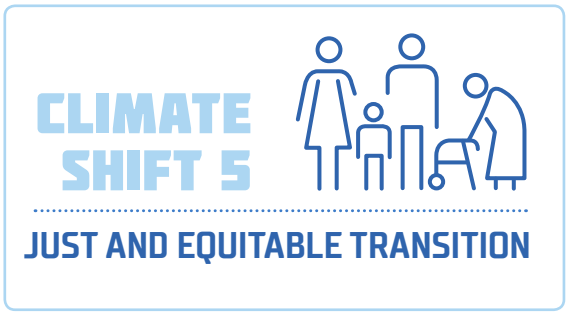
Green Incentives – Incentives would be appreciated, especially for the installation of residential solar arrays.

Other Ideas

In addition to the above, participants also identified these ideas:

- Compost as a way reduce waste production;
- Reduce overall consumerism; and
- Work with grocers, local restaurants and commercial food supplies to reduce waste in the food industry.

"Something related to the environment and climate change mitigation – controlling urban sprawl is part of this but is not enough. I see later that this idea is one of the goals, but I would prefer to see it as a concept that flows throughout."



Ideas of inclusion and equity were described throughout The City Plan and Vision 2050 engagement data but generally without an explicit reference to climate. Across all engagement events, participants were interested in seeing greater levels of equity in many aspects of city building from policing to affordable housing and transit. While these concepts were not paired directly with environmental concerns, they did identify the following areas where concerns over equity and justice are aligned with the other Climate Shifts.

Overall Inclusion – It is important to ensure that Edmonton be an inclusive city in all ways, including welcoming newcomers and furthering reconciliation with Indigenous people.

Inclusive Redevelopment – In areas undergoing redevelopment and retrofitting, it is important to consider how redevelopment, even done with positive environmental outcomes, affects communities through displacement and cultural erasure. Residents of affordable or low-income neighbourhoods are more vulnerable to these challenges compared to residents of wealthier neighbourhoods. Green housing throughout the city is important, and it needs to be affordable and appropriate for a greater diversity of residents.

Housing Affordability – One of Edmonton's key appeals is its affordability compared to other cities in Canada and around the world. The future affordability of home ownership should be considered, especially as cheaper suburban housing shifts to be denser and additional costs associated with more sustainable and carbon neutral are incorporated into housing costs.

Indigenous Knowledge and Partners – Recognizing the long-standing role that Indigenous people have played as environmental stewards and advocates is important.

Green Jobs and Diversification – When it comes to revolutionizing the economy, Edmonton and Alberta as a whole, needs to be prepared for a "post-oil economy". This includes positioning educational institutions, designing new curricula and attracting new industries to contribute to a diversification of the economy away from oil and gas. Aim for plentiful green jobs that support workers in transition toward low carbon industries.

Equitable Access to Transit – Access to transit service around the city, including more affordable transit fares, expanded subsidized transit fare programs and an extended network of high-quality transit is important. Equity in distribution of major LRT investments is important; marginalized areas often do not have access to high-quality and frequent transit.

"There are no healthy cities or urban places if climate change is not solved. There is no other possibility than responding to these things."

Equitable Transit Enforcement – Marginalized or minority groups are discouraged from taking transit because transit bylaw enforcement unfairly targets those groups.

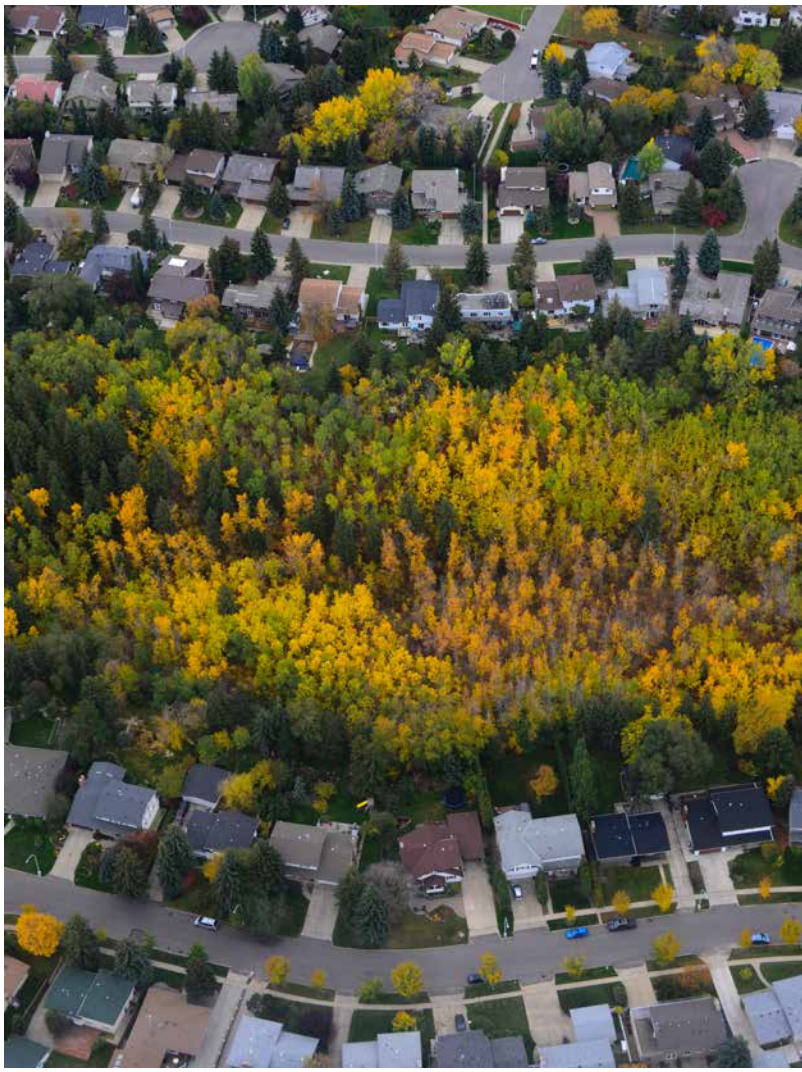
Dispersed Active Transportation Networks – Active transportation networks, distributed throughout the city to be accessible are important. These networks need to feel safe for all, including Indigenous people, people with mobility challenges, women, children and seniors.

Link to Other Climate Shifts – There is an explicit link between Climate Shifts 4 and 5 through calls for renewable energy production that was affordable for all users and having climate and energy production systems that are inclusive, rather than segregated.

Other Ideas

In addition to the above, participants also identified these ideas:

- Address quality of life inequities with promotion of time-consuming modes of transportation, like transit, for individuals who are already time impoverished as a result of other socio-economic factors; and
- Prepare to accept the arrival of new Edmontonians as a result of displacement and climate migration. Edmonton is a place with resources to be a climate refuge.



CLIMATE SHIFT 6

NEGATIVE EMISSIONS

Few methods and actions were identified to contribute to negative CO_2e emissions. Vision 2050 and The City Plan engagement did not ask for methods and actions, therefore this should not be interpreted as lack of public awareness or support.

Preserve and Protect – Preserving and enhancing greenspaces and natural areas is important to serve as carbon sinks and sequester additional CO_2e over their lifetime. It is important to also naturalize open spaces and protect farmland. This includes conversion of city-owned open park spaces into naturalized open spaces throughout the city. These concepts, although not always associated with negative emissions can contribute to this climate shift.

Other Ideas

In addition to the above, participants also identified these ideas:

- Establish permaculture systems which promote more circular use of resources in the agricultural industry including re-use of waste products;
- Use underutilized or vacant lands for urban agriculture as a way to strengthen the local food system;
- Require that additional lands be protected from development and maintained as natural areas during urban development to protect natural carbon sinks like wetlands and forests; and
- Consider how city infrastructure systems can be designed to make use of or emulate natural processes to manage products like sewage, stormwater or other waste materials.

CITY-WIDE ENGAGEMENT AND CITY DESIGN

Several engagement activities done by The City Plan Team focused explicitly on the preferred future form of Edmonton. These activities included building a model of Future Edmonton, a card game that focused on city patterns, and a game with blocks to explore how to distribute 1 million new Edmontonians. The following sections highlight some of the climate related findings of those activities.

City Patterns Card Game

The City Patterns card game identified Edmontonians' preferences about how the city's transportation, jobs, greenspaces and neighbourhoods might change in order to welcome another 1 million people to Edmonton.

Participants were asked four questions:

1. Transportation – How will Edmontonians move around the city?
2. Employment – How will jobs be distributed in the city?
3. Greenspace – How will we use greenspace in the city?
4. Proximity to Services – How will we intensify residential and commercial developments in the city?

For each question, at both drop-in workshops and through the Insight Community survey, participants chose their preferred pattern for the city:

DYNAMIC DOWNTOWN

This city pattern concentrates employment and population within a specific boundary centred around the current downtown and mature areas.

CONNECTED CORRIDORS

This city pattern distributes population and employment throughout the city along corridors as opposed to concentrating it at nodes.

VIBRANT VILLAGES

This city pattern attracts people and employment to major hubs distributed throughout the city.

Vibrant Villages

For all four questions, Edmontonians preferred the ideas which revolved around the concept of Vibrant Villages, which hinged on the idea of intensifying and promoting redevelopment around major destination and activity points throughout the city. Vibrant Villages would mean additional growth near major destinations like universities, hospitals, and commercial areas including areas like MacEwan University, NAIT, the Royal Alexandra Hospital and West Edmonton Mall.

In all question areas except Transportation, respondents second preference was for Connected Corridors, which would see intensification and change along major thoroughfares within Edmonton. Connected Corridors would mean additional growth along major thoroughfares such as Gateway Boulevard, 137 Avenue, 82 Street, Whyte Avenue or Kingsway Boulevard. This preference affirms other calls to see communities evolve to be more complete and offer a greater range of services locally.

What Kind of City Are We? Blocks Game

The Blocks Game provided The City Plan Team with feedback about how the city can welcome an additional 1 million residents within existing boundaries. Overwhelmingly, they identified changes to Edmonton's design and form that will contribute to an overall reduction of Edmonton's climate footprint and CO_2e emissions.

The actions identified by the participants included have a low carbon city in mind:

- **Reduce Edmontonians' dependence on private vehicles** by promoting the conversion of mature communities and the development of new areas to be hyper-local and walkable. This includes having local commercial spaces, recreation centres, park spaces and jobs many of which should be accessible within a short walk.
- **Improve the functionality and convenience of the transit system**. Without improving public perception of convenience, cost, safety and benefits of mass transit, Edmontonians have clearly indicated that driving will remain their primary mode of transportation into the future.
- **Integrate and co-locate where people work and live** so that daily commutes can be reduced: live close to work.
- **Develop high density, mixed-use developments along major transportation corridors**. Medium and l ow-density developments should be integrated into existing communities to support the overall densification of the city.
- **Reconfigure the system of multi-use trails and greenways as a functional transportation network**, as opposed to a mostly recreational system.

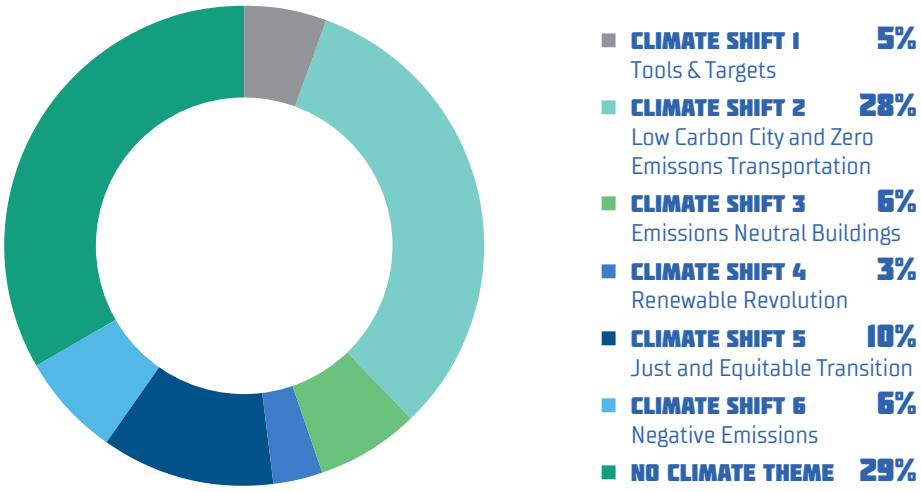
Quantitative Analysis

The March 2019 Insight Community Survey conducted as part of The City Plan engagement involved roughly 2,300 open text responses. From the responses, it is clear that Climate Shift 2: Low Carbon City and Zero Emissions Transportation is the climate shift that Edmontonians are most familiar with. The data mining software, when given a list of keywords related to the Climate Shifts, classified 28% of responses into that category. In addition, the survey responses also noted that Edmontonians are clearly interested in a Just and Equitable Transition, with 10% of responses including references to themes like energy poverty, green jobs, new Canadians, affordable housing and environmental justice.

Finally, the analysis also indicates a relative lack of input on the remaining four climate shifts: Tools and Targets, Emissions Neutral Buildings, Renewable Revolution, and Negative Emissions. Further engagement during this project should consider how best to gather a greater depth of perceptions and ideas related to these climate shifts as well as seek to educate Edmontonians about the potential value that they represent for meeting Edmonton's climate goals.

The combined results of the workshops and the Insight Community Survey are noted below.

Figure 2. Distribution of responses related to the climate shifts



For a full report of what we heard through The City Plan engagement, who we listened to and how we listened, please visit www.edmonton.ca/thecityplan

3

CONCLUSIONS AND NEXT STEPS

CONCLUSIONS

This What We Are Hearing Report gathers data about climate from the engagement undertaken for The City Plan (October 2018 to June 2019). The ideas captured here are the beginning of public engagement for the update of Edmonton's Community Energy Transition Strategy; they help highlight the many ways Edmontonians have already been telling the City what to do about the evolving crisis. It's now up to Edmonton's residents, municipal administration, business community, community organizations as well as other levels of government and decision makers to listen and take action. Other overall conclusions are discussed below:

A Low Carbon City of the Future – Edmontonians' are most interested and have the most ideas about this climate shift: being a low carbon city and electrifying the transportation system.

Climate Leadership – Edmontonians who provided input on the Vision 2050 overwhelmingly described a desire to have Edmonton be a global leader in environmental sustainability. While Edmontonians are clearly concerned about climate change and our impact on the environment, most did not articulate what actions should be taken to address these concerns.

Local and Tangible Environmental Sustainability – While many responses directly addressed ideas related to climate change, more often Edmontonians were focused on local and tangible impacts on the natural environment: air pollution, habitat degradation and waste management.

Timing – Of the responses directly related to environmental resilience, only a few indicated a time frame and those that did were focused on 2050 as opposed to the shorter 2030 timeframe which is identified for the Community Energy Transition Strategy.

Indigenous Voices – Indigenous communities shared that they need to be involved in City projects earlier to share perspectives about the environment and the impacts that they are experiencing in their home communities surrounding Edmonton, and Edmonton regionally impacts rivers, air, and wildlife in their communities.

Taxes and Efficiency – The City needs to be cautious when it comes to spending tax dollars, say a significant portion of respondents: keep taxes low, use common sense and ensure basic services are provided in a high-quality and cost-effective manner. Spending money on services which are considered extras compared to waste, roads and snow clearing, is not desirable for many Edmontonians. This includes spending on bike lanes and transit, which many feel contributes to traffic congestion.

City Design – The design of the city has an impact on our lifestyle and our CO 2e emissions. It also has an impact on how accessible and equitable the city is for its inhabitants.

Climate Adaptation – Adapting to the future impacts of climate change needs attention alongside the reduction of Edmonton's contribution to climate impacts.

Education and Awareness – Survey responses tended to indicate a lack of knowledge or awareness on multiple climate shifts. Future work as part of the Community Energy Transition Strategy update should focus on educating residents and broadcasting the importance of these climate shifts in meeting Edmonton's climate goals.

NEXT STEPS

The What We Are Hearing Report contains feedback from Edmontonians about climate resilience prior to City Council declaring a state of climate emergency and directing administration to update the Community Energy Transition Strategy to align with the international target of limiting global warming to 1.5°C. While many of the ideas summarized here indicate that residents s have ideas about climate change, they did not get into specifics actions or how to make them happen in Edmonton. The targeted engagement activities which started in September 2019 and go into August 2020 will do this work. Expect to be in conversation about carbon budgeting, monitoring, negative emissions strategies, equity, and being a low carbon city.

For a full report of what we heard through The City Plan engagement, who we listened to and how we listened, please visit www.edmonton.ca/thecityplan

www.edmonton.ca/thecityplan

Edmonton

What We Are Hearing Report

Community Energy Transition Strategy

September 2019 - May 2020

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edmonton.ca/**EnergyTransitionUpdate**

SHARE YOUR VOICE
SHAPE OUR CITY

Edmonton

Acknowledgements

We acknowledge the traditional land on which Edmonton sits, on Treaty 6 Territory, a traditional meeting ground, gathering place and travelling route for the Nêhiyawak (Cree), Anishinaabe (Saulteaux), Nakota Sioux, Dene (Denesuline), Niitsitapi (Blackfoot), and Métis. We acknowledge all the many First Nations, Métis, and Inuit, whose footsteps have marked these lands for centuries.

Edmonton is a welcoming place for all people who come from around the world to share Edmonton as a home. Together we call upon all of our collective honoured traditions and spirits to work in building a great city for today and future generations.

The authors of this report thank everyone who participated in the engagement activities. Your contributions are greatly appreciated and we hope you see your values and ideas reflected in these pages.

TABLE OF CONTENTS

1. Executive Summary

On August 27, 2019, Edmonton's City Council voted to update the Community Energy Transition Strategy (CETS) to align with the international target of limiting global warming to 1.5°C. At the same time, City Council declared a Climate Emergency and signalled that climate change is serious and demands urgent action.

On August 27, 2019, City Council voted to update the Community Energy Transition Strategy to align with the international target of limiting global warming to 1.5°C.

How We Are Hearing

In alignment with the City of Edmonton's Public Engagement Policy, the City is asking stakeholders to help *REFINE* and *ADVISE* on the proposed update of the CETS. Three streams of engagement are being pursued:

- The City is committed to engage with the Memorandum of Understanding Partners, including Enoch Cree Nation, the Confederacy of Treaty Six First Nations and the Métis Nation of Alberta, as the project intersects with Indigenous interests and concerns that relate to climate change. The state of the environment, rivers, wildlife and plants have been among some of the most identified areas of concern.
- The City is focused on targeted stakeholders who have diverse expertise and are well positioned to contribute technical expertise.
- The City focused on providing the general public with opportunities to learn about the proposed changes, provide advice, contribute ideas, and flag areas of concern.

The first phase of engagement for the CETS focused on **what** needs to be done to transition to a low carbon city and took place from September 2019 to May 2020. During this period 28 events took place to gather feedback from Edmontonians.

What We Are Hearing: Themes

Twelve general themes of feedback were identified:

1. **Take action now:** The impacts of climate change are unpredictable, wide-ranging and potentially irreversible.
2. **There is no "silver bullet":** The CETS update must focus on a wide range of actions to meet the City's climate goals. Fundamental system changes are needed.
3. **Pandemic recovery opportunities:** Implementation of the CETS can bring opportunities for economic recovery during and following the COVID-19 pandemic.
4. **Support investment in the transition:** The transition requires a significant amount of public and private financial investment. There is recurrent concern of how to fund the transition.
5. **Sustain the transition:** Choose actions that are sustainable and desirable in the long run. This will help support a high quality of life for current and future Edmontonians.
6. **Ensure a just and equitable transition**: Ensure that the implementation of this transition doesn't exacerbate existing inequalities and that it brings opportunities for all Edmontonians.
7. **Leverage this opportunity for economic transition:** Beyond an energy transition this is an opportunity for Edmonton to innovate, leverage existing skills and diversify its economy.
8. **Change the culture:** Significant culture change will be required across many systems to embrace the overwhelming challenge of this transition. These include energy, transportation, food, waste and social and community systems. Our culture is already changing.
9. **Educate and communicate:** Wide-reaching awareness campaigns are necessary to help Edmontonians understand the needs, targets and solutions. This includes strategies to educate people on the new concepts and on the impacts of their lifestyle decisions.
10. **Align with the City Plan:** To succeed the CETS must align its targets and actions with those in the City's new municipal development plan.
11. **Look beyond greenhouse gas emissions:** A range of sustainability issues should be considered including air and water quality, waste

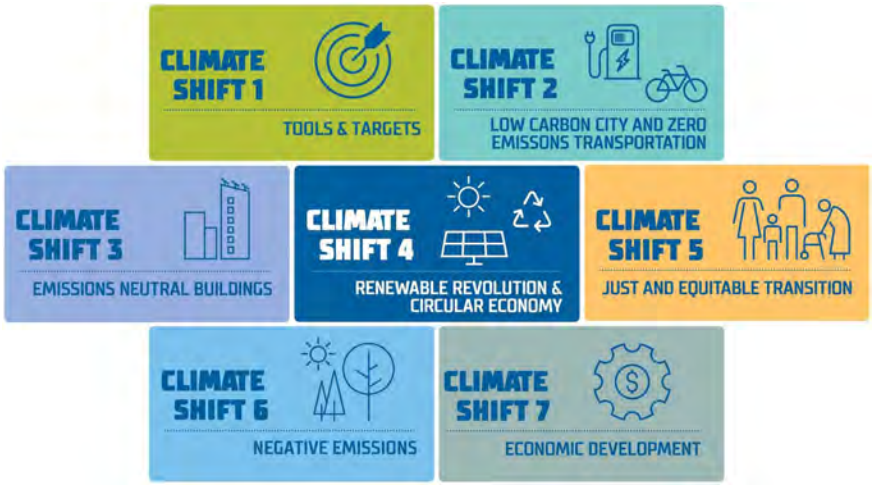
"Thank you for calling a climate emergency and putting it into the public record!"
-Community pop-up participant

management, biodiversity, ecosystem and public health, as well as social, cultural and economic perspectives.

12. **Partner for change:** A wide range of partnerships will be needed to meet the City's climate goals. This includes partnerships with Indigenous communities, education and research institutions, industry and community organizations.

What We Are Hearing: Climate Shifts

The proposed actions needed to meet the City's climate goals have been grouped into seven Climate Shifts. These Shifts are the foundation of the CETS update and of the engagement and were developed by modeling the various scenarios and solutions, conducting jurisdictional scans of 52 cities and researching best practices.



Highlights of the feedback received:

Climate Shift 1: Tools & Targets: There is support for a local carbon budget to prioritize and guide municipal decision making, and track progress. A carbon budget for individuals could help them understand the impact of their actions. It is important to use global best practices for measurement and monitoring while considering the uniqueness of Edmonton and the oil and gas sector in the region. There is also concern about how to finance this transition.

Climate Shift 2: Low Carbon City and Zero Emissions Transportation: There is a desire to enhance our transportation systems and support more active transportation. It is acknowledged that Edmonton is designed as a

vehicle city and this shift would involve a culture shift. Access to renewable energy ideally via a “green grid” is essential to achieve this shift.

Climate Shift 3: Emissions Neutral Buildings: There is support for having energy efficient buildings and acknowledgement that we need to have people trained with the skills to do this work. Realistic targets are necessary and the City needs to work closely with industry partners.

Climate Shift 4: Renewable Revolution and Circular Economy: There is a desire to embrace renewable energy sources, reduce waste and to foster a sharing and circular economy. Edmontonians want to see the City manage waste better and establish extended producer responsibility.

Climate Shift 5: Just and Equitable Transition: There is support to make sure that people are not left behind and inequalities are not exacerbated with this transition. Energy poverty must be addressed. Creating a just & equitable working group and framework was well received during engagement conversations, as well as looking for opportunities to partner with existing organizations/programs.

Climate Shift 6: Carbon Capture and Nature Based Solutions: There is a desire to use natural areas and open spaces as carbon sinks. Planting trees, protecting wetlands and urban farming, as well as a range of community partnerships can support this. Technology approaches are considered most effective when integrated into industrial heavy carbon emitting processes.

Climate Shift 7: Economic Development: The energy transition is an opportunity to create employment opportunities and diversify Edmonton’s economy. Consideration about the impacts and possible opportunities of this transition for under represented minorities, women and oil and gas workers is important. Partnerships, political leadership, regulation and policy signals, market opportunities and training/retraining will be needed.

Next Steps

The input received during this first phase of engagement is being used to inform the draft update to the CETS, which will be presented to City Council in the fall of 2020.* The next phase of engagement, tentatively scheduled from July to October 2020, will seek advice about **how** to implement the proposed CETS with Edmonton-focused actions/solutions. A second What We Heard report will be prepared with the input received during the next phase and will help inform the CETS document. The updated CETS will be presented to City Council early 2021 for approval.

**At the time of writing this report, dates for engagement and City Council meetings are not confirmed.*

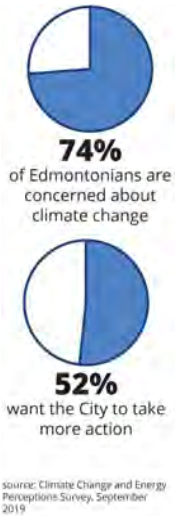
All subsequent engagement will be respectful of the directives of Alberta Health Services and Alberta's Chief Medical Officer of Health regarding the COVID-19 pandemic in the Edmonton area.

2. Update to the Community Energy Transition Strategy

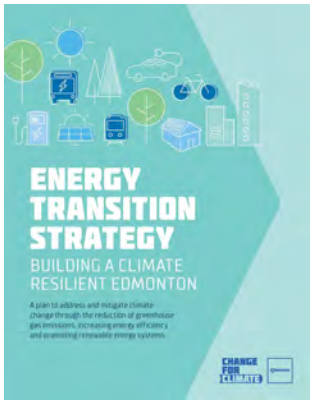
The CETS was approved by Edmonton's City Council in 2015 and it aims to reduce greenhouse gas (GHG) emissions, generate renewable energy and increase energy efficiency across all sectors.

The Community Energy Transition Strategy (CETS) was developed to help Edmonton mitigate the risks of climate change. The best scientific knowledge and advice available was used. The CETS was approved by Edmonton's City Council in 2015 and it aims to reduce greenhouse gas (GHG) emissions, generate renewable energy and increase energy efficiency across all sectors.

Since 2015, the City of Edmonton has been implementing the CETS with a suite of integrated programs under the *Change for Climate* banner. The programs have been developed to encourage residents, communities, corporations, industry, building owners/operators and others to work together to reduce GHG emissions.



source: Climate Change and Energy Perceptions Survey, September 2019



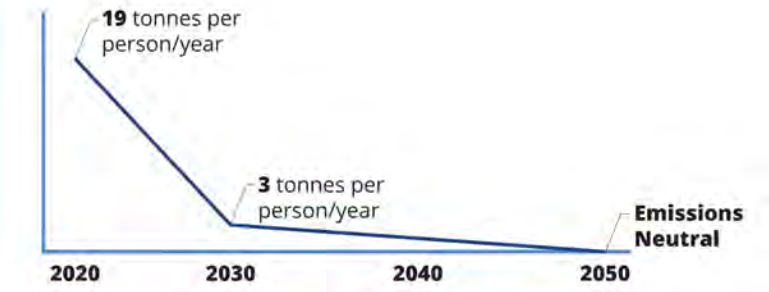
Edmonton's current CETS is thorough and bold, but it's not bold enough to respond to the urgent call from the United Nations' Intergovernmental Panel on Climate Change (IPCC) to limit global warming to an increase of 1.5°C. According to the IPCC scientists, 1.5°C is the maximum amount that the average global temperature can increase without causing serious climate destabilization. Staying within this threshold is necessary to ensure a sustainable and equitable society for all. This goal is also in line with the Edmonton Declaration, which calls on cities to take climate action and has been endorsed by over 4,500 municipalities in North America.

On August 27th, 2019, Edmonton's City Council voted to update the CETS to align with the international target of limiting global warming to 1.5°C. At the same time, City Council declared a Climate Emergency and signaled to local and international communities that climate change is to be taken seriously and demands urgent action.

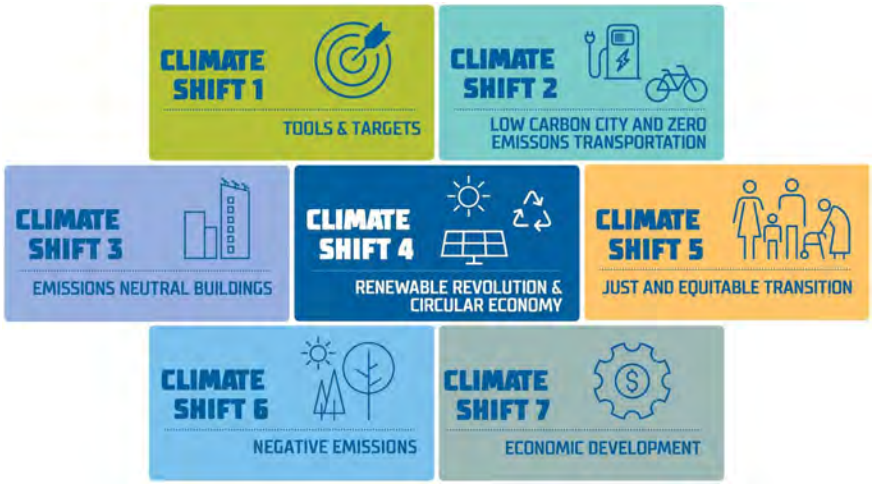
Edmonton is using a carbon budget to guide the update of the CETS, set targets and measure progress. A carbon budget is the total amount of GHG emissions permitted over a period of time (in this case until 2050) in order to stay within a temperature threshold.

Edmonton's carbon budget will be exceeded in 7 to 9 years.

At current levels of emissions, Edmonton's carbon budget will be exceeded in 7 to 9 years. Staying within this local carbon budget will require transitioning from 19 tonnes of emissions per person/year to 3 tonnes per person/year by 2030, to being emissions neutral by 2050.



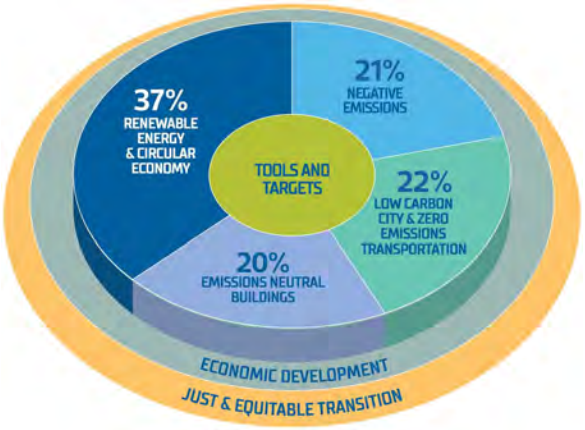
The City has grouped the proposed actions needed to achieve that transition into seven Climate Shifts. These Shifts were first developed by conducting jurisdictional scans of 52 cities, researching best practices and modeling the various scenarios and solutions.



The Shifts are designed to work in an integrated way. Tools & targets are at the core and are surrounded by the four Shifts whose actions directly or indirectly reduce GHG emissions. The percentages describe how each shift

contributes to reaching the target. In addition to being their own Shifts, the Economic Development and Just & Equitable Transition Shifts are lenses that apply to all Shifts. This integration ensures that this energy transition creates economic prosperity and that it happens in a just and equitable way.

The Climate Shifts with their proposed actions are being presented to stakeholders for their input.



Climate Shifts

3. How We Are Listening

Dynamic Listening

The update to the Community Energy Transition Strategy (CETS) as well as how Edmontonians are being engaged, has been a dynamic and flexible process. Information has been shared as it becomes available and input from stakeholders has been incorporated into the draft of the CETS as appropriate, as well as into the engagement design. Due to tight deadlines, engagement activities have taken place in parallel to the development of technical modeling and policy briefs.

In the fall of 2019 six "Climate Shifts" were shared with stakeholders. As a result of that engagement Climate Shift 7: Economic Development was added. The engagement that took place from January to May 2020 included this seventh shift as well as more detailed information on the proposed targets and actions. After March 12, 2020 the City changed how it engaged with stakeholders due to COVID-19. Although the majority of activities for the initial phase of engagement had already occurred, a few meetings with targeted stakeholders took place online in April and May 2020.

The purpose of engagement is to ensure that the proposed update of the CETS, with its Climate Shifts and actions, captures the best practices, innovations and ideas, and that it is implementable in Edmonton.

The City will continue this dynamic and flexible approach as the project proceeds. Particular attention will be paid to engagement activities that will advance the project and are respectful of the directives around the COVID-19 pandemic in the Edmonton area.

Purpose of Engagement

The purpose of engagement is to ensure that the proposed update of the CETS, with its Climate Shifts and actions, captures the best practices, innovations and ideas, and that it is implementable in Edmonton. Feedback from stakeholders and the public play a key role in the development of an updated CETS, which will be presented to Council for approval.

In alignment with the City's Public Engagement Policy, this project uses the engagement spectrum to identify the role of targeted stakeholders and the public in the decision-making process.

The level of engagement in this project varies between *ADVISE* and *REFINE* depending on the Climate Shift and is shown in the table below.

ADVISE	ADVISE & REFINE
• Climate Shift1: Tools & Targets • Climate Shift 2: Low Carbon City & Zero Transportation Emissions • Climate Shift 4: Renewable Revolution & Circular Economy	• Climate Shift 3: Emissions Neutral Buildings • Climate Shift 5: Just & Equitable Transition • Climate Shift 6: Carbon Capture & Nature Based Solutions • Climate Shift 7: Economic Development

Streams, Phases and Activities

Three Streams of Engagement

This phase of engagement involved three efforts:

1. **Indigenous engagement** in this phase took place with the City's Memorandum of Understanding Partners, including Enoch Cree Nation, the Confederacy of Treaty Six First Nations and the Métis Nation of Alberta, to ask how the Partners would like to be engaged and share information and ideas.
2. **Targeted stakeholder engagement** was the main focus for this phase of engagement. This involved a variety of existing groups from various backgrounds, with diverse expertise, who are well-positioned to contribute to the technical aspects of the CETS update.

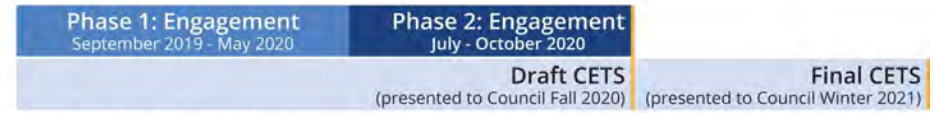
3. **Public engagement** events took place in the form of pop-up events at community gathering places (malls, recreation centres and public events) and workshop sessions on specific topics. The public had opportunities to learn about the proposed changes, provide advice, contribute ideas, and flag areas of concern. Education was an essential part of the engagement, as there are various new technical concepts and solutions that the general public might not be familiar with.

Participants were asked to identify what needs to be done for Edmonton to make the transition to a low carbon city and to do it in a just, equitable and prosperous way.

Parallel to these streams, an additional targeted stakeholder engagement is currently taking place with members of the building and development industry around Climate Shift 3: Emissions Neutral Buildings. Internal engagement with City of Edmonton representatives is also underway. The results of these engagements will be included in the final engagement report and integrated into the updated CETS as deemed appropriate.

Phases of Engagement

This phase of engagement took place from September 2019 to May 2020. A second phase of engagement is tentatively scheduled to take place from July to October 2020.* All subsequent engagement will be respectful of the directives of Alberta Health Services and Alberta's Chief Medical Officer of Health regarding the COVID-19 pandemic in the Edmonton area.



*Dates not confirmed due to COVID-19

This phase of engagement focused on obtaining input and advice about the Climate Shifts and the proposed actions/solutions. Participants were asked to identify **what** needs to be done for Edmonton to make the transition to a low carbon city and to do it in a just, equitable and prosperous way. The next phase of engagement, will seek advice about **how** to implement the proposed CETS with Edmonton-focused actions/solutions. The input received during this second phase of engagement will inform the final CETS document, scheduled to be presented to City Council for approval in the fall of 2020.

**At the time of writing this report, dates for engagement and City Council meetings are not confirmed.*

Engagement Activities

From September 2019 to May 2020, 28 engagement events took place giving participants opportunities to *ADVISE* and *REFINE* the update to the CETS, including:

- Community drop in events
- Public facilitated workshops
- Targeted stakeholder facilitated workshops
- Committee meetings and webinars

28
Events around Edmonton

850+
Conversations with Edmontonians

2600+
Written Comments

The details of how engagement took place, and the results, can be found in Section 4: Who We Are Hearing From and Section 5: What We Are Hearing. In addition to the above activities, seven stakeholder sessions specific to the Emissions Neutral Buildings Climate Shift and over 60 internal (City of Edmonton) stakeholder meetings to discuss the CETS update took place during this phase.

Communication of Engagement Opportunities

Public engagement events were promoted widely to ensure Edmontonians were aware of the opportunities to provide their input on the update of the CETS. Communications tools and tactics used include:

- Public service announcements
- Articles on the Change for Climate newsletter
- Social media (organic & boosted) posts on City of Edmonton and Change for Climate channels (Facebook and Twitter)
- Blog posts on changeforclimate.ca
- Up to date information at Edmonton.ca/EnergyTransitionUpdate
- Printed ads in the Edmonton Journal
- Invitations to targeted engagement events were emailed using existing stakeholder lists and when applicable through member organizations.

Public Engagement Commitments

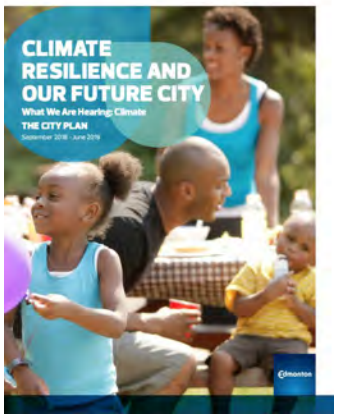
Below is a list of the commitments that have been made prior to initiating engagement with stakeholders. These commitments helped frame the engagement activities.

1. **We are aligning with the 1.5°C target:** Under City Council's direction the purpose of updating the CETS is to align its goals with the international target of limiting global warming to 1.5°C. This requires that Edmonton transitions to a low carbon city.
2. **We are using a local carbon budget:** The CETS update will use a local carbon budget to set its targets and to monitor its progress. Edmonton's local carbon budget was calculated to be 135 Megatonnes from 2020 to 2050.
3. **We are organizing actions into Climate Shifts:** The proposed actions have been grouped into categories called Climate Shifts. The proposed actions are the result of modelling, jurisdictional scans of 52 cities and best practices.
4. **We are working towards agreed goals and objectives:** With the larger goal of limiting global warming to 1.5°C, the objectives of the CETS are to reduce greenhouse gas emissions, reduce energy use, increase the generation of local renewable energy and pursue carbon capture and offset opportunities. The updated CETS is aiming for a just and equitable transition, while maintaining a

prosperous economy with excellent quality of life for all current and future Edmontonians.

5. **The project timelines are set by City Council**: The deadlines on this project were set by City Council on August 27, 2019 ***prior to the COVID-19 pandemic***:
    a. An interim report with accelerated actions due to City Council on December 2, 2019.
    b. An initial draft for the updated CETS due to City Council in June 2020.*
    c. The final CETS Update due to City Council in October 2020.*
    d. Endorsement of the final CETS by City Council for City Charter regulations in December 2020.

    **These dates have been changed due to COVID-19 pandemic.*



Dynamic Questions

This phase of engagement started with a review of the climate-related feedback Edmontonians provided during engagement for The City Plan from October 2018 to June 2019. The key findings are summarized in the Climate Resilience and Our Future City: What we are hearing about climate report. These findings provided an understanding of where Edmontonians wanted the city to be in the next 30 years in terms of climate resilience and insights on some specific actions. This review also helped inform the planning of subsequent engagement, including how to engage specific key stakeholders such as Indigenous Peoples and identify the Climate Shifts that needed the most input.

From September 2019 to December 2019, engagement focused on sharing the Climate Shifts and asking stakeholders: **What needs to be done to transition Edmonton to a low carbon city?** To help them approach this broad question, stakeholders had an opportunity to learn about the proposed Shifts and actions/solutions and then answer three simple followup questions:

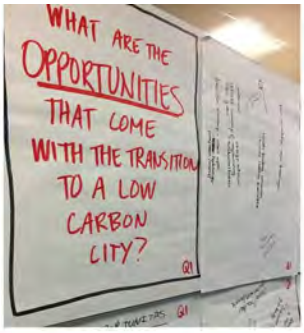
1. **What excites you?**
2. **What concerns you?**
3. **What is missing?**

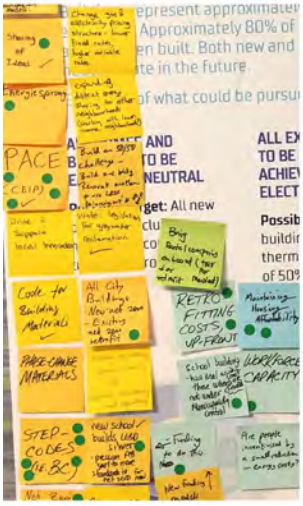
After reviewing the feedback from the 2019 sessions and examining the information needed, the focus of engagement from January 2020 to May

2020 became more specific. Stakeholders were asked: **How can we make this energy transition happen in a just, equitable and prosperous way?**

This question allowed the public and targeted stakeholders to explore and *REFINE* the two least developed Climate Shifts: Just & Equitable Transition and Economic Development. This question also invited participants to explore applying just, equitable and prosperity lenses to all the Shifts.

Throughout the engagement, participants were asked questions to help identify both **opportunities** to make the energy transition, and **barriers** to the transition. Further, participants identified **solutions** to the barriers, providing vital feedback to the City about what can work best in Edmonton.





4. Who We Are Hearing From

This phase of engagement involved three streams: Indigenous engagement, targeted stakeholder engagement and public engagement.

To inform the update to the Community Energy Transition Strategy (CETS) this phase of engagement involved three streams: Indigenous engagement, targeted stakeholder engagement and public engagement. This section describes who was engaged. Results of the engagement can be found in Section 5: What We Are Hearing.

Indigenous Engagement

The City of Edmonton is located within Treaty 6 Territory and Region 4 of the Métis Nation of Alberta, and has been a gathering place and traditional territory of Indigenous peoples since time immemorial. The Edmonton metropolitan region is also home to over 75,000 Indigenous peoples (First Nations, Métis, and Inuit) who have and continue to make significant contributions to the city's social, economic and cultural prosperity.

Based on the extensive engagement the City has done with Indigenous communities and organizations from across Alberta, the City has learned that Indigenous communities are very interested in the climate conversation. Throughout the City's engagement sessions on such projects as City Plan, Breathe, River Crossing, Touch the Water and the six Light Rail Transit projects, the state of the environment, rivers, wildlife and plants have been among some of the most identified areas of concern.

The City is committed to engaging with its Memorandum of Understanding (Memorandum) Partners that include Enoch Cree Nation, the Confederacy of Treaty Six First Nations and the Métis Nation of Alberta when projects intersect with Indigenous interests and concerns. The City acknowledges that the CETS project is of interest to Indigenous communities and believes

in the importance of positive relationships with these communities within the spirit of the Memorandum Agreements (See Appendix B).

Indigenous engagement in Phase 1 involved the City reaching out to the Memorandum partners to share information about the CETS update project, and ask how the partners would like to be engaged. Partners then identified individuals with interest and expertise in environmental and climate science to engage with the City through a meeting and workshop activity.

Following this, three engagement sessions took place with Memorandum partners. Prior to the sessions, participants received a workbook with examples of existing projects in the Edmonton region that helped illustrate the kind of action the proposed CETS update is aiming for.

Targeted Stakeholder Engagement

Given the technical nature of the CETS update and the tight timelines, targeted engagement has been the focus of in-depth engagement. For this project, the term targeted stakeholders refers to a variety of existing groups from various backgrounds and diverse expertise that are well-positioned to make technical contributions to the update. Below is a summary of the targeted stakeholder engagement that was completed during this phase.

Energy Transition Climate Resilience Committee

The Energy Transition Climate Resilience Committee (ETCRC) is made up of 15 members who provide advice to City Council regarding the implementation of the Community Energy Transition Strategy and the Climate Resilient Edmonton: Adaptation Strategy and Action Plan.

In this phase ETCRC members were invited to dive into the proposed update of the CETS as follows:

- Strategy & Planning Subcommittee: Edmonton Tower, Sept. 24, 2019
- Strategy & Planning Subcommittee: Edmonton Tower, Oct. 17, 2019
- Action on Buildings Subcommittee: Virtual meeting April 9, 2020
- Strategy & Planning Subcommittee: Virtual meeting April 9, 2020
- Transportation Subcommittee: Virtual meeting April 14, 2020
- Clean Energy Subcommittee: Virtual meeting April 15, 2020
- ETCRC monthly meeting: Virtual meeting May 7, 2020

Energy Transition Leadership Network

The Energy Transition Leadership Network is a group of 230+ community members passionate about the energy transition, with members working together to turn ideas into action.

During this phase the Network met twice to discuss the CETS update. The first meeting focused on the role of fission and fusion (nuclear technologies) in Edmonton's energy transition and the second time to provide input to all the Climate Shifts.

- Edmonton Tower: Sept. 11, 2019 2019 (50 attendees)
- Edmonton Tower: Dec. 4, 2019 (59 attendees)

Green Ribbon Panel (Energy Future Lab Fellows)

The Green Ribbon Panel is made up of 64 Energy Future Lab Fellows. This diverse group of innovators and influencers work together to shape the energy system the future requires. As a panel they bring their individual and collective expertise to provide technical advice and recommendations on the feasability of the various proposed actions.

After receiving a webinar introduction to the CETS update, the Green Ribbon Panel was asked to review and provide written feedback to the 18 policy briefs that inform the update. The panel also participated in a follow up workshop to learn about how all the pieces of the CETS fit together and share their feedback one more time.

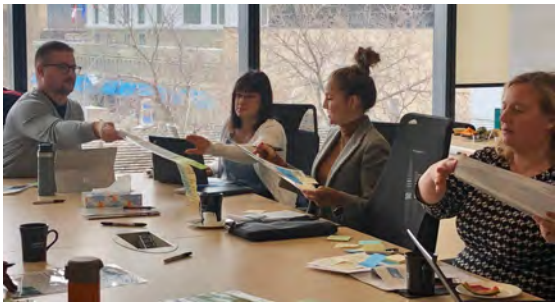
Engagement took place as follows:

- Webinar: Oct. 17, 2019
- Policy briefs review via Google form: Oct. 2019 to Feb. 15, 2020
- Workshop at Cochrane Ranchehouse: Feb. 27, 2020 (64 attendees)

Environmental Advisory Committee

The Environmental Advisory Committee coordinates strategic advice and expertise from the community for the continuing development of the City's environmental strategic plans and environmental issues as they arise. During a facilitated workshop, seven members of the committee provided input into the Climate Shifts and their actions.

The session took place on Feb. 12, 2020 at the Edmonton Tower.



Edmonton Food Council

As a volunteer committee of the City, the Edmonton Food Council's primary role is to advise on matters of food and urban agriculture and to take an active role in supporting the implementation of FRESH: Edmonton's Food and Urban Agriculture Strategy.

During a facilitated workshop eight members of the Edmonton Food Council provided feedback on the Climate Shifts as they relate to food. They mainly addressed: Renewable Revolution & Circular Economy, Just & Equitable Transition, Economic Development, Carbon Capture and Nature Based Solutions.

This engagement took place at The Roundhouse in MacEwan University on Feb. 18, 2020.

Economic Development Workshop

To further develop the Economic Development Climate Shift, the City invited members from the business community to a facilitated workshop. During this workshop participants were asked to apply an economic development lens to the proposed CETS update and help identify opportunities and challenges for innovation and collaboration, among others.

The session took place at the World Trade Centre on Feb. 27, 2020 and 23 active members of the business community participated.

Emissions Neutral Buildings (Industry Engagement)

In addition to the Indigenous, targeted stakeholder and public engagement sessions completed during this phase of the project, a targeted stakeholder engagement with members of the building and construction industry around this Shift is currently underway. Their feedback is not captured in this report but will be included in the final engagement report and integrated into the updated CETS as deemed appropriate.

The purpose of the targeted Emissions Neutral Buildings engagement is to identify how to achieve annual net zero greenhouse gas emissions in all new buildings constructed by the year 2030. This requires engagement with internal and external stakeholders involved in the building and construction industry as they will be those most affected by the updated CETS, as well as those responsible for its success.

In this phase an Emissions Neutral Buildings Steering Committee (ENBSC) was established and held three meetings. Three additional sessions took place to raise awareness and collect feedback on the Emissions Neutral Building Strategy with industry members from the Canadian Home Builders' Association, Infill Development in Edmonton Association (IDEA) and Commercial Real Estate Development Association. One meeting to gather technical feedback also took place.

As the ENBSC continues to meet in the coming months, a final Emissions Neutral Buildings pathway will be provided to City Council as part of the final CETS for their approval early 2021. Feedback provided from this stakeholder group during the duration of the project will be included in the engagement report for the next phase of engagement.

Internal City of Edmonton Engagement

Engaging with the City of Edmonton's leadership and staff is essential for the success of the CETS update. During this phase more than 60 meetings with representatives from across administration took place to share the proposed Climate Shifts, collect input on actions and explore new ideas for reducing greenhouse gas emissions. These meetings indicated an awareness of the City's energy transition and climate change work among staff and that a wide range of large and small actions to support the strategy are already underway.

It is worth noting that considerable effort is already being put into the following City initiatives: Emissions neutral buildings, electric buses, securing renewable energy, district energy, planning for climate mitigation & resilience as part of The City Plan and the Zoning Bylaw, and exploring a framework for incorporating carbon into the budget, among others. From a just and equitable transition lens, there are opportunities to collaborate and partner with other existing programs in the City.

Ongoing engagement with various internal stakeholders will continue until the final CETS is presented to City Council early 2021. Findings from internal engagement are continuously informing the update and a summary will be included in the final What We Heard Report which will be provided to City Council at the end of the project.

Public Engagement

Public engagement with Edmontonians on the CETS update is key to the long term success of the project. Being a community strategy, it is essential for the project team to know what excites and concerns the public on the proposed update and capture their ideas. Public engagement in this phase included a range of events as listed below.

Community Pop-Ups

In the fall of 2019, the City shared information about the CETS update and provided input opportunities at the following events across Edmonton:

- Engage Edmonton: This series of in-person sessions took place in partnership with the City Plan and Edmonton Bike Plan project and through these engagement activities, 264 conversations about the CETS took place.
    - Londonderry Shopping Centre, Oct. 19, 2019
    - The Meadows Recreation Centre, Oct. 22, 2019
    - Southgate Centre, Oct. 23, 2019
    - West Edmonton Mall, Oct. 24, 2019
    - Edmonton Tower, Oct. 25, 2019
- Spark 2019: Carbon Positive - Edmonton Convention Centre, Oct. 28 - 30, 2019 (36 conversations)
- The Local Good Green Drinks: A Carbon Neutral City - Yellowhead Brewery, Nov. 13, 2019 (106 participants)

- An Evening with Bill Nye - Northern Alberta Jubilee Auditorium, Nov. 16, 2019 (89 conversations)

During these sessions, participants were asked to share what excited them, what concerned them and what was missing from the Climate Shifts and proposed actions. Participants in these drop-in sessions had various levels of expertise on the topic.

Just and Equitable Transition Workshops

The City hosted two public workshops and asked participants to roll up their sleeves and dive into conversations about how to make this energy transition happen in a just, equitable and prosperous way. During the sessions participants applied their understanding of a just and equitable lens to the proposed CETS update and contributed ideas to the actions under Climate Shift 5: Just & Equitable Transition.
Sessions took place as follows:

- Commonwealth Recreation Centre: Mar. 4, 2020 (31 participants)
- La Cite Francophone: Mar. 7, 2020 (31 participants)

While these sessions were open to the public a concerted effort was made to invite stakeholders from social agencies, community organizations and diverse multicultural groups in the city.

Youth Policy Jam

The City organized a Climate Action Youth Policy Jam in collaboration with the Youth Climate Lab, a global organization that accelerates youth-led climate policy, projects and business ideas. This youth-for-youth interactive event used design thinking principles to engage the youth in the update of the CETS. Input was gathered around the seven Climate Shifts and the proposed actions.

This session took place Feb. 25, 2020 in the Heritage Room of Edmonton's City Hall and 34 Edmontonians between 18-24 years of age participated in this session.

Climate Change & Energy Perceptions Survey

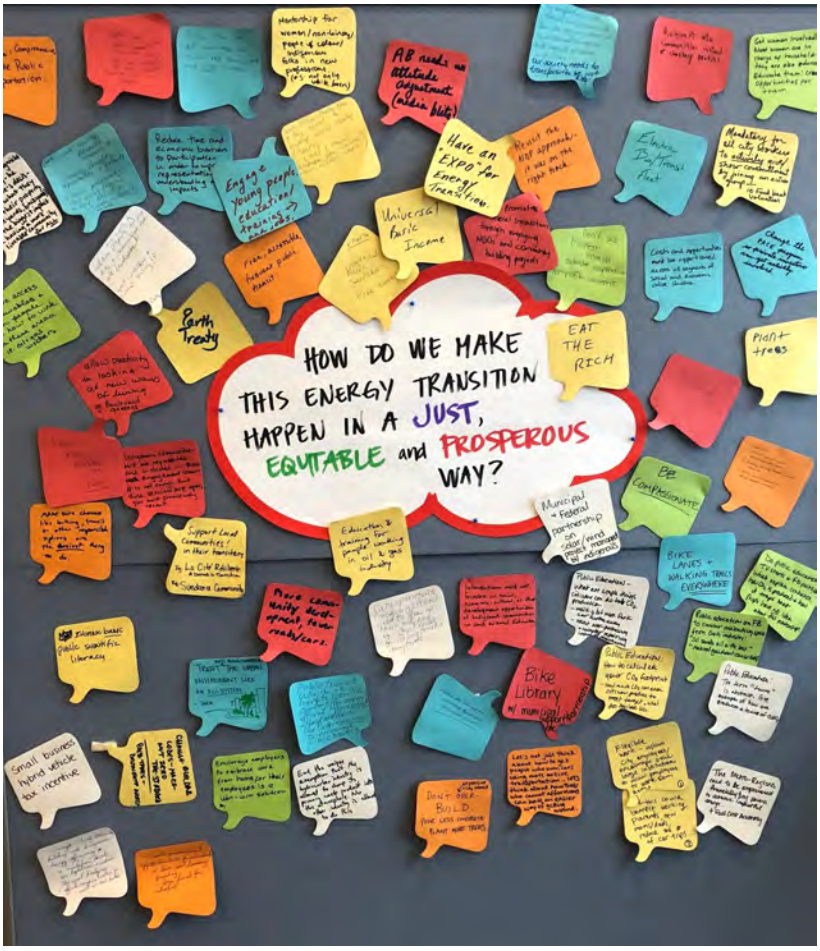
The City commissions an annual Climate Change & Energy Perceptions survey to understand Edmontonians' beliefs regarding climate and energy transition, and compare changes in perceptions and social norms throughout the years. The results help inform policy and programs, such as the update of the CETS.

The 2019 general population online survey took place from Sept. 13 - 23 and had 1,003 respondents (residents of Edmonton and 18 years of age or older). A stand alone report for the survey results can be found in changeforclimate.ca/surveyresults.

Engagement Feedback

Understanding participants' experiences at engagement events is important. Engagement evaluation forms were distributed to participants at the end of organized engagement sessions and where possible during drop-in events. This feedback is used by the City to identify areas of improvement or clarification and help shape future engagement.

The feedback provided during this phase was applied to subsequent engagement activities. For example, participants asked for City staff to join discussion tables, for more clarity on what a just and equitable transition is and for more opportunities to engage. They also expressed appreciation for the efforts the City is doing to provide engagement opportunities, listen to the public and work towards the City's climate goals. The majority of participants said they felt safe and included during sessions.



5. What We Are Hearing

This section describes the input received during the Indigenous, targeted stakeholder and public engagement sessions for the update of the Community Energy Transition Strategy (CETS). During these sessions engagement participants had opportunities to learn about the Climate Shift and the actions/solutions and were asked questions to help identify **opportunities and barriers, and solutions to those barriers**. Those categories are used to summarize the input received for each Climate Shift.

Indigenous Engagement: About the Climate Shifts

The following pages summarize the feedback provided throughout the Indigenous engagement workshops with Memorandum partners.

Climate Shift 1: Tools & Targets

Opportunities

- **Awareness and education:** There is an opportunity to build awareness and educate people on how much individuals contribute to collective greenhouse gas emissions and how much they individually contribute to Edmonton's carbon budget.

Barriers

- **Awareness and education:** The City will need to increase efforts to build awareness and educate Edmontonians on the current carbon budget and climate change context and the impacts of their daily behaviours to effectively contribute to meeting CETS targets.
- **Implementation and regulation:** Building and infrastructure retrofitting, consumption and emissions monitoring need to be implemented. It will be difficult to ensure that residents and industry have access to sustainable financial tools and technology for retrofits and that there is consistent monitoring regardless of incentive program regulations, political changes or socio-economic status.
- **Population growth:** Population growth will need to be accounted for in the local carbon and municipal budgets.

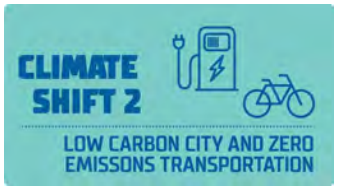
"Continue the greening of Alberta energy grid – bigger partnership City / Provincial/ Federal" - Indigenous workshop participant

- **Targets:** The 1.5°C target to mitigate climate change is evolving; what is going to happen when the current target is no longer relevant or feasible?

"Eco co-ops: partnering with City for green housing, social spaces in apartments, co-officing etc. Eco consuming lifestyle" - Indigenous workshop participant

Solutions

- **Awareness and education:** Educating Edmontonians on how they can effectively adapt their daily behaviours to reduce carbon emissions will be key to creating successful and meaningful long term solutions.
- **Climate modeling:** Modelling tools can be made widely available to Edmontonians so they can understand and track their impacts on the environment.



Climate Shift 2: Low Carbon City & Zero Emissions Transportation

Opportunities

- **Collaboration and partnership:** Collaboration and partnerships with communities and governments outside of the City present an opportunity to support regional adaptation to low carbon emissions and sustainable transportation.
- **Cultural change:** Making a cultural shift towards greener energy sources and transportation is an opportunity to bring communities and different social groups together to build support for changing our individual and collective choices and actions.

"The grid will need to get greener for electric vehicles being a good option" - Indigenous workshop participant

- **Sustainable transportation:** There is an opportunity to make transportation more sustainable in Edmonton by taking advantage of alternative transportation options such as rentable electric scooters and bicycles and creating incentives and built environments that make alternative options more appealing.

Barriers

- **Personal vehicle dependence:** The built environment has been designed to accommodate and encourage the use of private vehicles. It will be a challenge to adapt existing infrastructure to accommodate a shift towards public and sustainable transportation options.
- **Collaboration and participation:** Collaborating and coordinating changes with adjacent municipalities, communities and people commuting to the City for employment will be challenging but important as Edmonton is a regional economic and employment centre.
- **Implementation:** Implementing changes to reduce carbon emissions will require buy-in, participation and action from politicians and citizens. The City's jurisdiction may be limited to regulation and enforcement.

"Rentable e-bikes could make a difference, easy access, no storage"
- Indigenous workshop participant

Solutions

- **Personal vehicle reduction:** Reduce the widespread dependence on personal vehicles through incentivizing and supporting alternative transportation and transit options.
- **Incentives:** Create retrofitting and public transportation incentives for citizens to adapt to greener energy and transportation options to encourage individuals, industry and communities to change.
- **Sustainable transportation:** Electric vehicles (EV) may support more Edmontonians in their sustainable transportation transition rather than telecommuting or using public transit. E-scooters, E-bikes and HOV lanes will also support individuals in their transition.

Climate Shift 3: Emissions Neutral Buildings

Opportunities

- **Financial tools and partnerships:** Explore opportunities to collaborate and partner with financial institutions to provide low interest loans and other financing tools to lessen the financial burden of adapting and retrofitting buildings and incentivize participation.

- **Knowledge and expertise:** Use the knowledge and expertise that Edmontonians have.
- **Regulations:** There is an opportunity to update current building regulations to make new buildings more environmentally friendly and ensure that City facilities adhere to the same standards. Explore how the City can partner with other levels of government to support the transition to cleaner energy and emissions neutral buildings.
- **Retrofitting programs:** Explore program options to incentivize retrofitting buildings and coordinate program delivery with other levels of government to make retrofitting options appealing and affordable to Edmontonians.

"Opportunities for creating affordable housing by turning old houses into various energy efficient units and creating community." - Indigenous workshop participant

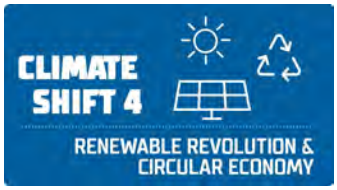
Barriers

- **Compliance:** Compliance and enforcement will be a challenge for commercial and private buildings.
- **Local & global impact:** There are local and global socio-economic and environmental impacts in transitioning to alternative forms of energy. How will the transition impact local and global Indigenous communities?
- **Funding:** A lack of funding and/or contingency financial reserves are significant barriers to being able to implement change. Often what is offered will not cover the full costs of retrofitting a home or transitioning to greener energy. There needs to be a greater and more consistent financial incentive and support if people are going to make changes.
- **Knowledge and expertise:** There is a gap in knowledge and expertise that can make it difficult for communities to participate, access appropriate resources, or contribute meaningfully.

"Proper phasing of renovation funding (got solar funding, but didn't realize that roof needed substantial upgrades)." - Indigenous workshop participant

Solutions

- **Funding and regulation:** Ensure that funding is substantive enough to be useful and incentivize meaningful participation. Simplify applications and reporting processes to encourage compliance and participation.
- **Retrofitting:** Retrofitting existing buildings could be a solution to the energy inefficiency of many older buildings and a way of creating more emissions neutral buildings.



Climate Shift 4: Renewable Revolutions and Circular Economy

Opportunities

- **Awareness and education:** There is an opportunity to enhance education and build awareness around renewable revolutions and circular economies.
- **Collaboration and partnerships:** There is an opportunity to partner with other municipalities, regions and levels of government to collaborate to become more effective and widespread.
- **Facilities:** There is an opportunity to expand existing recycling and composting facilities to make them more efficient, versatile, safe and reduce waste by increasing our capacity for recycling, composting and reusing.
- **Funding and incentives:** Providing funding and other incentives for renewables encourages participation and assists those that can not afford to implement the technology, such as people with low or fixed incomes.

- **Local energy and renewables:** Look into local renewable sources of energy production such as biofuels and solar power.

"In lower income neighbourhoods, could there be a community solar farm so that each home wouldn't have to pay to have one installed on their own building."
- Indigenous workshop participant

"Need policy around waste management for private companies... More control over commercial waste."
- Indigenous workshop participant

Barriers

- **Funding and grants:** There is a lack of sufficient funding/grants and significant cost challenges associated with adapting to cleaner energy. Cost can be a huge barrier to success.
- **Programs:** Explore ways to make City programming more accessible, efficient and robust.
- **Recycling:** The City's current recycling program could be improved, for example properly recycling glass.
- **Feasibility:** There can be feasibility challenges when it comes to updating buildings that can be a barrier to transitioning to clean energy (e.g. having to fix roofs prior to installing solar panels).
- **Waste management:** Many aspects of waste management are beyond the City's control. How private companies package

consumer materials and dispose of waste cannot necessarily be monitored or controlled by the City. There is a lack of transparency regarding how private companies dispose of waste and whether or not their processes are environmentally friendly or ethical.

"With Blatchford the City has learned a lot about geothermal and efficiency and could publicly share lessons with private developers to incentivize and learn from the effort" - Indigenous workshop participant

Solutions

- **Collaboration and partnerships:** Collaborate and partner with other regions and governments to ensure we reach collective goals.
- **Commercial waste:** Enhanced City regulation and control over commercial waste that is currently not regulated effectively.
- **Facilities:** City facilities need to be upgraded to increase their ability to recycle and process waste and increase what they are able to process.
- **Funding and incentives:** Grants and other incentives should be offered to encourage participation in efforts to be more environmentally conscious and enable the participation of those who would otherwise be unable to participate.
- **Renewables:** Use existing waste and materials to implement new renewable technologies and provide opportunities for community participation. (i.e., Businesses provide their compost to create biofuels for the community.)

Climate Shift 5: Just and Equitable

Opportunities

- **Collaboration and partnerships:** There is an opportunity to develop a working group with people that have experience with the just and equitable lens to support the City in implementing CETS in a just and equitable way.
- **Procurement:** Establish Indigenous procurement programs to take advantage of opportunities and support Indigenous communities and suppliers.
- **Accessibility:** Modify existing infrastructure and design new infrastructure to be universally accessible and encourage walkability.

"Many Indigenous Peoples live in Edmonton, good to see the mention of Indigenous Peoples here...Really good shift to include, hits a lot of good points" - Indigenous workshop participant

- **Best Practices:** Review best practices from other communities and countries for ideas on just and equitable housing, transportation and sustainability programs and practices.

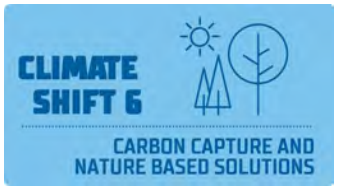
Barriers

- **Collaboration and resources:** There is a need for greater collaboration between all levels of government and Indigenous communities. There is also a need for resources and funding to build capacity to support the meaningful action and participation of communities.

"Continuous engagement with those most impacted by climate change - need to follow-up, needs to be continuous, strong dialogue with marginalized groups on changing programs" - Indigenous workshop participant

Solutions

- **Engagement:** Establish a working group for those that are marginalized and underrepresented and maintain ongoing dialogue about how they are impacted by climate change and the CETS initiatives.
- **Funding, financing and procurement:** Work with local Indigenous communities and levels of government to develop funding, financing tools and Indigenous procurement programs.
- **Training:** Support Indigenous work with transferable skills, or provide partnership with education institutions for re-training, to support Indigenous employment in the renewable energy economy.



Climate Shift 6: Carbon Capture and Nature Based Solutions

Opportunities

- **Collaboration and partnerships:** There is an opportunity to develop partnerships and collaborate with Memorandum Partners to share knowledge and resources and for nature based solutions.
- **Environmental protection:** Protect and enhance environmental assets locally and regionally such as wetlands and tree stands that serve an important purpose in carbon capture and nature based solutions.

Opportunity to partner to preserve surrounding wetland areas - Indigenous workshop participant

Barriers

- **Knowledge and expertise:** There is limited knowledge and expertise on carbon capturing technology and practices and the resulting long-term impacts of carbon capturing technology.
- **Risks to nature-based solutions:** Extreme weather and wildfires, land development and human or industrial activities and uses that pose risks to nature based solutions such as the River Valley or urban tree canopy.

Partner with Indigenous groups to help plant trees, restore, maintain - Indigenous workshop participant

Solutions

- **Awareness and education:** Educating the public and Indigenous communities on carbon capturing environmental assets, technology and practices will allow for greater collective understanding and implementation.
- **Best practices and policy:** Review existing land development best practices globally that are already being implemented on carbon capturing and policy and regulation to enhance nature-based solutions.

Climate Shift 7: Economic Development

Opportunities

- **Collaboration and partnerships:** There is a significant opportunity for the City to partner with Memorandum Partners through potential CETS initiatives such as job retraining, local food production, regional environmental initiatives and renewable local energy production.
- **Indigenous procurement:** Indigenous procurement policies and regulations will support Indigenous communities and peoples in participating in City CETS initiatives.

Barriers

- **Collaboration and partnerships:** There are significant farmlands surrounding the City that could be explored for economic opportunities (carbon capturing or local food production), but it requires regional collaboration between different levels of government.

- **Political environment and resources:** Changes in different levels of government pose a challenge to achieving a unified and collaborative understanding and effort and the sharing of resources to build capacity and encourage participation.

Solutions

- **Partnerships and funding:** Indigenous communities, business and the City can partner on unique economic development opportunities to support CETS initiatives that create a meaningful impact and build capacity in Indigenous communities and businesses.
- **Training:** Indigenous youth and businesses training in renewable technology, project management for renewable projects, transitioning skills from industries will increase economic opportunities for Indigenous communities and contribute toward achieving the CETS targets.

Targeted Stakeholder and Public Engagement: About the Climate Shifts

The following pages summarize the feedback provided throughout the targeted stakeholder and public engagement sessions.

Climate Shift 1: Tools & Targets

Opportunities

- **Global alignment:** The City should be aiming to integrate global best practices into the City's approach to reduce greenhouse gas emissions. The City should also be looking to the global community to help inform their actions based on best-practices and other evidence-based solutions. Some participants also indicated that the City should also carefully integrate local characteristics including the city's car-dependent form, cold climate and economic reliance on the energy sector into the energy transition.
- **Financing the transition:** Multiple financial tools and programs were identified that could be used to support Edmonton's climate goals. While some of these financial systems may be outside of the City's ability to implement, there were several opportunities including public-private partnerships (P3), zero-interest loans and the PACE program that they felt were viable for the City to implement. In addition, they identified that the City could leverage its significant purchasing power to select low emissions products that could drive down supply costs for producers and other consumers.

"Can't think of anything missing... other than figuring out how we will pay for it and make it happen."
-Energy Transition Climate Resilience Committee member

- **Communication and education:** Communication and education were some of the most common topics identified in the engagement input. The City should be making the concepts easier to understand including providing examples of how complex technical terms and amounts relate to people's

daily lives and annual consumption. Other sentiments were that the City needs to be making a more significant effort to broadcast its climate goals. In contrast, one participant was fed up with the focus on education and felt that the City should "just enact policy that must be followed. Be bold".

- **Industry reporting and measurement:** The City should mandate that large emitters report their emissions to the City in a transparent and consistent manner. Public comments also indicated that they were unsure how this should be undertaken and that further engagement with industry was needed to identify appropriate methods to measure their emissions.
- **Community-led approaches (grass roots movements):** Members of the public were interested in exploring community-based approaches to reducing greenhouse gas emissions like measuring emissions against residential neighbours or promoting community initiatives like community-gardens and local businesses. Some participants were also concerned that top-down actions would lead to major economic shocks. In this vein, one participant referenced the 1980s National Energy Program that is blamed for a major recession in Alberta.
- **Taxation:** Many participants felt that the City should consider alternate taxation strategies that promote energy efficiency and retrofits for homeowners and landlords. A wide range of ideas were identified including lowering taxes for high efficiency homes, taxing larger homes and providing other tax incentives for businesses that show significant reductions in greenhouse gas emissions.

"Native plants include more than just trees. Get rid of grass in city parks and properties. Plant clover and low maintenance plants"
-Environmental Advisory Committee

Barriers

- **Other levels of government:** There was a recognition that to achieve its goals, the City would require support from other levels of government, especially around challenges like energy production that are largely outside of the City's control. The current provincial government's budget priorities were also commonly cited as barriers to the City reaching its climate goals.
- **Rate of change:** Some participants indicated that they were concerned about the short timeline that the City has identified for reaching its climate goals. Some felt that a step-wise approach

would be more approachable and easier to gain public buy-in. Other participants were concerned that the City's actions are being started too slowly and that the city's current form and reliance on private cars will limit its ability to meet its goals.

- **Future proofing programs:** It is important that new programs that are implemented in the near future be considered from a far future lens. This includes ensuring that rebate programs or other subsidies are not supporting technologies that will not meet our future goals in the name of marginal improvements in efficiency today. For instance, specific issues were raised with programs at a national level that incentivize consumers to buy technologies that have to be phased out completely to meet the City's goals in the long term.
- **Quality of life:** Some participants were concerned that the City was asking people to lower their current quality of life and felt that this mentality will not garner support from the general public. Some of these comments indicated that the City should focus on what it wants rather than the negative aspects of the current situation. Others were clear that they felt that without politicians showing how they were sacrificing to meet these goals that the general public would not support these changes.

"What are the ideas that help people benefit from this way of life and help with the transition?"
-Just and equitable workshop participant

Solutions

- **Price on carbon:** Stakeholders and the public identified the need to put a price on carbon emissions in order to incentivize increases in efficiency and decrease emissions. Actions identified included:
    - Continue to focus on heavy emitters;
    - Identify a fair approach to carbon pricing for consumers; and
    - Find ways to mitigate impacts to low income families.
- **Consumer-level carbon budget:** A common idea that participants indicated was a family of tools to help Edmontonians better understand their personal greenhouse gas emissions. They indicated that public tools were needed to help calculate personal and business emissions. Other tools identified included online dashboards, publishing energy grid efficiency and labelling consumer products with emissions, including both on smaller purchases as well as larger sources of emissions like vehicles and

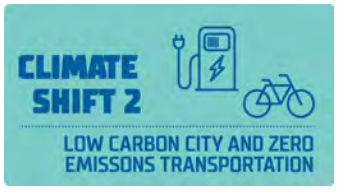
"Excited about how this shift can be a source of cost savings"
-Energy Transition Leadership Network participant

homes. Some participants also noted that energy labelling should not be about penalizing people but supporting them to make more sustainable choices overall.

- **City-level carbon budget:** Modelling a carbon budget and incorporating its findings into decision-making processes is critical to prioritizing actions and understanding how those actions are helping Edmonton reach its goals. Support for carbon budgeting included a spectrum of approaches from simply identifying tangible targets to integrating a carbon cost to all city projects and permit evaluations.

  There was general support for city-level carbon budgeting with public support for budgets that measure our immediate carbon emissions while there was explicit support from some targeted stakeholders related to more fulsome carbon budgets that also consider the carbon emissions created by the production of goods and services both locally and globally. One expert stakeholder indicated that they felt the City would be well-enough served by using production-based reporting as it generally identifies the largest emitters for a community and that these emitters should be the target for the City's immediate upcoming 10-year action plan. They noted that future updates to the strategy could then expand on consumption-based budgets to identify remaining emitters once action had been taken on those topics.
- **Metrics and measurement:** Other ideas included suggestions for specific metrics to use when prioritizing actions or measuring their success. One recommendation was to consider the dollar cost per unit of carbon emissions reduction when prioritizing different actions or options. In addition, participants were concerned that the City does not have a clear 'baseline' or understanding of the current state of emissions against which to compare future actions.

"Adding a carbon budget into the City of Edmonton's greenhouse gas reduction targets is an effective way of communicating the urgent need to reduce emissions."
-Green Ribbon Panel - policy review comment



Climate Shift 2: Low Carbon City and Zero Emissions Transportation

Opportunities

- **Autonomous vehicles:** Participants had mixed concerns with the entry of autonomous vehicles (AVs) into the vehicle market. Some participants were concerned about how AVs could increase greenhouse gas emissions. In contrast, others felt that they might

have a positive impact if they were regulated with several key conditions like reduce vehicle trips, be electric and incentivize car sharing. In addition, they felt that there might be opportunities for AVs to travel at slower, more energy efficient speeds because they offer passengers an opportunity to do other work while travelling.

- **Active transportation – bikes:** Support for active transportation was a common theme raised by participants. They identified that the City should be expanding a connected active transportation network. Comments focused primarily on enhancing the active transportation network including separated lanes, winter clearing, secure storage, and bike share. In addition, participants thought that there should be more emphasis on investment in active transportation infrastructure and greater prioritization during the design of transportation networks in the core and the suburbs.

"Bikes need to be permitted & left space on both buses & LRTs to increase integration possibilities"
-Community pop-up participant

- **Electrifying the transportation system:** Stakeholders were in alignment that electrifying the city's transportation system (the use of electric powered buses and promoting private electric vehicles) was important to meet our climate goals, although some comments indicated that hydrogen fuel might be more effective for some applications. Participants identified that the City could be involved in incentivizing electric vehicle (EV) sales as well as supporting installation of solar panels and charging stations. While comments were generally supportive of electric vehicles replacing internal combustion engines, comments also noted that they had concerns about the affordability of EVs and their availability at dealerships. Some comments indicated that changes wouldn't be significant without stronger regulations and incentives that promote electric vehicles.

"Debunk myths around Electric Vehicles in cold climate"
- The Local Good Green Drinks participant

Barriers

- **Car-centric city:** Participants, especially members of the public were quick to point out that, generally, Edmonton is a car-centric city and that this would be a barrier to reducing greenhouse gas emissions for most Edmontonians. Participants identified multiple parts of this transition including a car-dependent urban form, urban sprawl, as well as strong car culture and continuing major investment in vehicle-only infrastructure.
    - Barriers to Transit Usage: The following barriers were identified related to Edmonton's current transit system:
    - Transit trip times are usually longer than other transportation options;
    - Cold weather while waiting;
    - Buses are not reliably on time;
    - Over enforcement and high fines; and
    - Perception issues of transit;
- **Electrifying transportation:** Stakeholders were consistently positive that including more electric options within the city's transportation system. Comments also raised the concern that Alberta's electricity is generated from sources that have high greenhouse gas emissions that negate the benefits of EVs without a corresponding change to energy production. Participants also felt that without EVs, the entrance of self driving cars (autonomous vehicles) will result in major increases in carbon emissions.

"You almost have to drive to get to certain places. Our urban form needs that transition"
-Energy Transition Climate Resilience Committee member

Solutions

- **Greening the grid:** Participants from across the engagement sessions indicated that electrifying different systems like transit, passenger vehicles and building heating, would only effectively reduce greenhouse gas emissions if Alberta's energy grid was also greened. This includes the continued phase out of coal and other carbon intensive energy sources during the production and the large-scale inclusion of low carbon energy sources.
- **Demand management:** Many participants identified that the City should start managing demand for vehicle trips through a variety of methods that are within the City's control but are mostly outside of its normal operation. These ideas included:

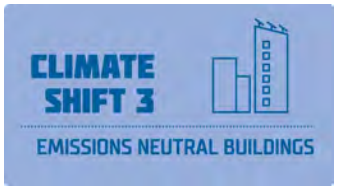
- Car-free zones/pedestrian areas;
- Imposing congestion pricing;
- Establishing stringent road taxes; and
- Imposing toll roads.

- **Enhancing transit:** Transit was the most common theme related to Climate Shift #2. Participants identified a wide range of solutions (and barriers) to enhancing transit services in Edmonton including some of the following:

"Rather than focussing on the new personal vehicles, the City should make it a priority to improve public transit"
-Community pop-up participant

  - Increase the frequency and spread of transit;
  - Enhance DATS;
  - Provide free transit;
  - Increase the amount of Park and Ride spaces;
  - Construct dedicated bus lanes and other transit priority infrastructure; and
  - Expand the LRT network.

- **Hydrogen energy:** Throughout the engagement comments, there was a consistent message from hydrogen fuel proponents that the City should consider how hydrogen can be used as a low carbon fuel. The Alberta Industrial Heartland area was identified as it has significant hydrogen production capacity for local industrial uses but that there is not currently a fulsome market for hydrogen products in the province.



Climate Shift 3: Emissions Neutral Buildings

Opportunities

- **Energy efficiency and reduction strategies:** Many participants raised the idea that a significant source of emissions reductions should be sought through energy efficiency and reduction strategies. Stakeholders identified how reductions in emissions can occur without significant investment in alternative energy infrastructure simply through reducing energy use in Edmonton and it was noted that moving towards alternative energy sources

must also be accompanied by reductions in energy usage overall. These ideas included reducing the need for heating and cooling as well as simply not using as much energy in people's day-to-day lives.

- **Building heating:** Building heating was a common theme identified by stakeholders with many participants identifying that there were opportunities for expanding the use of electrical heating systems for buildings to move away from natural gas heating. Some participants who made these comments were concerned that the concepts identified in the Emissions Neutral Buildings section did not sufficiently focus on electric building heating options. Of note are the same concerns raised about EVs in the province; in that the current sources of electricity are highly carbon intensive.

"One of the targets should be our progression to electric heating- 63% of energy used in buildings is for heating"
-Energy Transition Leadership Network participant

- **Communication and education:** Many participants suggested that it was important that the benefits of energy efficient buildings be communicated to the general public and that there was a significant need for consumer education on the subject. They also indicated that additional effort was needed to bring industry partners including builders, developers and major rental agencies on board with the benefits of more energy efficient building design and construction.
- **Operational efficiencies:** Some participants identified that it was important that the City and proponents of efficiency products and systems show how improvements to building efficiency help to enhance the livability and affordability of buildings. This included promoting the cost savings and operational benefits that came with heating and cooling efficiency.

"More and more deep retrofits, bump up the incentives and some of those retrofits could be happening as we speak!"
-Energy Transition Climate Resilience Committee member

- **Job opportunities:** Participants felt that it was important to consider how to improve opportunities for people working in building and development industries to get training to enter the field. This included providing job training for existing tradespeople and engineers who may require retraining to enter that field as well as training for young people entering the workforce for the first time.

Barriers

- **Cost of major energy retrofits:** Participants noted that a significant barrier to implementing major energy retrofits and other renovations is the cost to do the work. They noted that the current situation results in only a few relatively wealthy homeowners being able to afford these kinds of renovations. They felt that without significant support, incentives and cost reductions that some households, and in particular, low income households as well as renters and not-for-profits will be unable to participate in these kinds of building retrofits.
- **Older homes:** Some participants noted that there was a challenge in that the oldest homes in Edmonton are also the least energy efficient, cost the most to upgrade and tend to be owned by the people who have the least ability to pay for retrofits. This also included concerns about how to improve the efficiency of important heritage buildings.

"We will need bigger incentives to allow people to retrofit older buildings."
-Community pop-up participant

- **Wide range of buildings and circumstances:** Participants noted that a significant challenge to the large-scale implementation of deep energy retrofits is the wide range of situations that need to be addressed. They noted that, especially in Edmonton's older neighbourhoods, any kind of standardized approach fails to capture the variety of interventions needed to bring different buildings up to carbon neutral standards.

- **Maintaining housing affordability:** Some participants were concerned that requirements to reduce carbon emissions in homes would unduly raise the cost of new housing and impact housing affordability in Edmonton.
- **Buy-in from owners/developers:** Participants were generally negative about the prospect of getting buy-in from most homeowners, builders and developers to support and accept the

additional costs associated with more efficient buildings. These concerns should be tested in the ongoing engagement with the building industry being completed as part of the CETS update.

Solutions

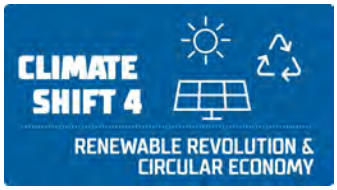
- **Enhancing the building code:** Participants identified that there are opportunities for the City to push for enhancements to the building code that would support greater building energy efficiency. This included a range of options including following the lead of BC's Step Code program to changing municipal bylaws and requiring that neighbourhoods and buildings be designed for optimal solar orientation or requiring that new buildings be built to meet carbon neutral standards.

"Also how are we looking at the zoning bylaws? They need to be net-zero now, because they will be developing for the next decades"
-Energy Transition Climate Resilience Committee member

- **Municipal leadership:** Participants felt that the City has a role to play in demonstrating climate leadership when implementing the updated CETS. This included specific calls to renovate all city buildings to meet carbon neutral standards as well as to continue to explore opportunities for district energy systems for municipal and private developments.
- **Geothermal district energy in new areas:** Participants noted that there were opportunities to integrate more sustainable heating and cooling systems into new areas as they are developed through requiring the establishment of district heating and cooling infrastructure.
- **Bylaw changes:** Participants felt that it was important that the City takes active leadership in this field and changes its bylaws to require developers and builders to achieve better environmental outcomes. This included requiring that neighbourhood planning be optimized for solar potential and that all new buildings be constructed to be ready for solar power. Bylaw changes to support renewable energy production at a site-level was also a common suggestion from members of the public. In addition, some comments were concerned about the ability of individual homes to produce solar energy if they were overshadowed by larger apartments of mature trees.

Note: Additional targeted stakeholder engagement with members of the building and construction industry around this Shift is currently

underway. Their feedback is not captured in this report but will be included in the final engagement report and integrated into the updated CETS as deemed appropriate.



Climate Shift 4: Renewable Revolution and Circular Economy

Opportunities

- **Renewable energy generation:** Participants were generally supportive of renewable systems like wind and solar energy generation to meet their energy needs. They also felt that it was important to establish a renewables compatible grid as soon as possible. Specific ideas that were supported by participants included solar energy co-ops, waste to energy projects, use of excess land for renewables, Indigenous-led clean energy projects and connecting abandoned oil and gas wells for geothermal energy. Other participants noted that it may also be needed to support greater integration of multiple energy systems that included coupling natural gas and electricity systems to ensure that energy and heating are consistently available.

"The end goal could be to ensure that Edmonton has a reliable electricity system that is as close to zero emissions as possible."
-Energy Transition Climate Resilience Committee member

- **Clean energy:** Edmontonians were clear that the City must be actively engaged in procuring clean energy for its facilities and helping to 'clean' Alberta's electrical grid by supporting renewable energy sources throughout the province. Across comments related to all seven Climate Shifts, participants indicated that clean energy production, at the household level and the community level should be prioritized by the City and that a variety of supports and regulations should be put in place to advance these efforts. Some participants also felt that the local production of clean energy is important enough to require that all new buildings be designed to either be renewables-ready or to include renewables during construction.
- **Decentralized/distributed energy networks:** Participants felt that there should be an effort made to 'distribute' the City's energy network. This included providing tools and supports for individual households and businesses to produce their own power and distribute it into the power network. It also included the need for

distributed energy storage including household batteries to store excess energy that is produced through this distributed network.

- **Circular economy:** Comments from participants were supportive of the City leveraging its waste management system to contribute to developing Edmonton's circular economy where items that would normally be considered waste products are used as raw materials for other purposes. These kinds of systems help to make efficient use of resources by reducing the quantity of resources that are sent to a landfill. Participants identified that there were opportunities for Edmonton to explore circular systems both at the consumer level and the industrial level.

- **Waste management systems:** Participants commonly identified the need to more actively align Edmonton's waste management system with its environmental goals. This included continuing to set high diversion rate goals and more actively recycling materials. Participants also wanted to see the implementation of some actions already contained in Edmonton's 2019 Waste Management Strategy including reducing the amounts of recyclable materials going into the landfill and implementing source separated organics. Participants also felt that producers of consumer products should be more responsible over the full lifecycle of their products.

Barriers

- **Affordability of renewable energy renovations:** Across most renewable energy renovations, there was a consistent theme related to the idea of a Just and Equitable Transition that most of these kinds of individual renewable installations benefit wealthier Edmontonians and are generally inaccessible to mid to low income Edmontonians as well as renters. From this perspective, participants noted that the City should offer a sliding scale of incentives that support low-income Edmontonians so that they can

afford these retrofits or else seek other forms of renewable energy production that are more equitably accessible.

- **Nuclear energy:** Nuclear energy continued to be a polarizing subject in the clean energy discussion. Some participants raised concerns that regardless of feasibility, that nuclear energy is outside of the City's jurisdiction. In addition, proponents described its benefits and the opportunities that new advances bring while opponents continue to express concerns over safety and waste storage. Finally, some stakeholder responses indicated that, regardless of the above, nuclear energy projects take too long to build to be useful in the timeline of this strategy and they are best to be excluded.
- **Culture shift:** One of the major barriers that has continued to be identified by participants across the Climate Shifts is the need for an overarching culture shift for Edmontonians. Participants continue to be concerned that many of these strategies will only be supported and adopted by marginal parts of the population. In addition, they recognized that Edmonton faces additional barriers to a full energy transition given the region's traditional and ongoing reliance on the oil and gas sector.

Solutions

- **District energy systems:** District energy systems use shared infrastructure to share building heating and cooling among connected developments. Comments commonly identified district energy systems as potential solutions to meet future heating and cooling needs in Edmonton. District energy systems could be implemented both in existing commercial areas as well as in newly developing neighbourhoods.

- **Solar panels:** The most common form of renewable energy that was identified by participants was solar panels. Comments from the public were mixed about how solar energy systems should be developed, whether the city should prioritize roof-top solar

systems or whether large-scale solar farms should be developed that achieve greater efficiencies of scale. Participants felt that neighbourhoods should be designed to optimize solar collection and that zoning bylaw regulations should consider how individual buildings impact their neighbours' abilities to produce solar energy.

- **Energy storage:** Participants noted that it will be important for Edmonton's (and Alberta's) energy grid to find ways to store energy in a secure and sustainable manner when energy production is not fully aligned with energy consumption. Participants identified different opportunities like hydrogen storage, in-home batteries or use of private EVs to capture and store energy entering the grid.
- **Sharing economy:** A small group of participants felt that the City had a role in enabling more features of the 'sharing economy' which is intended to reduce the number of products consumed by providing systems that formalize opportunities for neighbours to share items which might be needed but only occasionally. These kinds of systems might include tool libraries where members can borrow construction tools when needed to eliminate the need to purchase those tools.
- **Waste to energy:** Waste to energy systems use waste products to produce energy either through chemical processes or through combustion. Comments from participants identified that the City could implement waste to energy systems in its waste management system and produce energy using those materials which are not usable as resources in another system.

Climate Shift 5: Just and Equitable Transition

A Just and Equitable Transition is identified both as a Climate Shift as well as a lens through which all the other Climate Shifts can be designed to make their actions more equitable and ensure the transition is available for all Edmontonians.

Opportunities

- **Defining just and equitable:** Some participants were concerned that there needs to be a clear definition of the terms just and equitable and the ideas supporting them as the CETS is implemented. Some participants also felt that there needs to be

additional public-facing communication around these ideas with the general public.

- **Indigenous engagement:** Many participants were interested in ensuring engagement with Indigenous Peoples and organizations was taking place. This included working with urban Indigenous groups as well as with partners, elders and other representatives.
  Note: As part of this project, the City invited urban Indigenous populations to join the Youth Policy Jam and the Just & Equitable workshops, as well as reached out to its partners through the Memorandum of Understanding between the Enoch Cree Nation, Memorandum of Cooperation & Dialogue between the Confederacy of Treaty 6 First Nations, Memorandum of Shared Recognition & cooperation between the Metis Nation of Alberta.
  For more information see Section 4 Who We Are Hearing From, as well as the Indigenous Engagement feedback above.

"Not just about money or education… how do we have programs that create employment in other income brackets."
-Energy Transition Climate Resilience Committee member

- **Access:** Many participants offered ways to make CETS programs and actions more accessible. These included reducing language barriers by providing translation/interpretation services as well as using simple language in documents.
- **Integrating and aligning with existing work:** There are opportunities to support the implementation of the CETS by integrating its implementation with existing programs that already work with marginalized Edmontonians. They also noted that there would be significant benefits if other business areas of the City administration were undertaking actions that directly aligned with the CETS as part of their operation.

"Integrate skill building for green jobs into existing employment readiness programs"
- The Local Good Green Drinks participant

- **Mitigating impacts of the transition:** A common theme was about mitigating the impacts of the transition on Edmontonians who are already marginalized. This often focused on mitigating potential cost increases for renewable energy, carbon neutral housing or additional taxes on carbon emissions. These kinds of considerations should clearly be made to ensure that new

measures meant to shift behaviour do not further contribute to their marginalization.

- **Ability to pay:** Some comments received during the engagement indicated that the City could consider strategies and actions similar to how climate change is being considered at a global level where countries and organizations with a greater ability to make changes and pay are encouraged to take actions above and beyond those countries that are unable to afford to make similar changes as well as financially support those poorer countries.
  There was also recognition that different types of programs can be developed that help different people of differing incomes and abilities to pay.

"Ensuring affordable housing is one main concern that people have before being able to consider energy transition actions. But in addition to housing, other basic needs must also be stable before energy transition is possible for/by all."
-Just and Equitable Workshop participant

Barriers

- **Systemic change required:** Some of the barriers that were identified by stakeholders included systemic issues like racism, poverty and homelessness. The changes required to address those systemic issues will require more broad reaching actions by all levels of government, communities and individuals to address. These larger issues also contribute to lowering the ability of low income households and other marginalized people to invest in actions that are part of the energy transition.
- **Energy poverty:** There is a recognition that low income households are also more likely to be living in homes that are not energy efficient and have a lower ability to pay for deep energy retrofits. In addition, participants noted that, in many cases, people living in poverty are struggling to meet more pressing needs and can't afford the time, effort and money needed to participate in the transition. To address this, participants indicated that the City should undertake incentives specifically for low-income or marginalized groups and provide a wide range of supports to help these individuals participate.
- **Fossil fuel industry:** Some participants brought up concerns about how this energy transition will impact those currently working in the fossil fuel industry and that there would be pushback and a lack of interest from energy sector workers in transitioning to different industries.

"To ensure a truly just and equitable transition we probably needed to start some time ago. Making it truly just and equitable takes time (doesn't mean we shouldn't start)"
-Just and equitable workshop participant

Solutions

- **Connecting with diverse communities:** Many participants were interested in ensuring the City connects with diverse parts of Edmonton including those who do not typically participate in engagement events. There was also support for seeking more in-depth engagement with diverse groups through community organizers, advocacy organizations and by supporting community climate ambassadors to share information and opportunities related to the CETS implementation. Participants also noted that there should be special efforts taken to engage with different age segments of Edmontonians including seniors and youth.
- **Connecting with diverse businesses:** Some suggestions were focused on ensuring that the CETS actions were engaged and useful not only for large established businesses but also smaller and minority-owned businesses that may not be as able to access support or be aware of the opportunities for participating in the transition.
- **Affordable housing:** Many participants felt that there should be a push to have affordable housing be developed or renovated to reduce their greenhouse gas emissions. This included deep energy retrofits for existing housing and ensuring that all new affordable housing that is built is built to carbon neutral standards and provides access to good transit and local services for residents.
- **Jobs and employment training:** Participants provided a wide range of suggestions to support energy industry workers to be less impacted and even benefit from the transition, including providing guaranteed income, job training and slowing the transition.

"Use networks already in place, including community leagues, NGOs, seniors, school groups, religious and ethnic groups, they know what is needed for justice and equitableness for their constituency/group."
-Just and equitable workshop participant

Just and Equitable Working Group

During the public workshops, participants discussed the possible creation of a Just and Equitable Working Group. Stakeholders discussed who should be part of this group and resources needed.

<u>Participants</u>

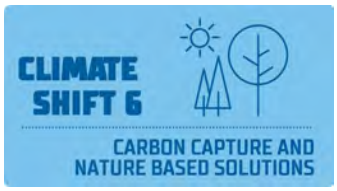
The Just and Equitable Working Group's should be composed of people at the intersection of those most impacted and those most marginalized by traditional power structures. The following stakeholders were identified:

- Affordable housing providers
- Bio-diversity experts
- Economic development and government representatives
- Ethnic minorities
- First Nations
- Industry leaders/utilities
- Green energy providers
- LGBTQ+
- Low income households
- Newcomers to Canada
- People most impacted by the energy transition
- Refugees
- Seniors
- Single parents
- Students
- Youth
- Women

Engagement Support

Participants identified a range of engagement supports that participants felt would help to make engagement by the Just and Equitable Working Group more inclusive. Barriers to participation should be reduced by supporting the engagement of a broader cross-section of Edmontonians.

- Monetary compensation for time, effort, expertise and travel
- Child minding
- Educational support
- Provide food
- Rotate locations
- Translation and interpretation support



Climate Shift 6: Carbon Capture and Nature Based Solutions

Opportunities

- **Protecting natural sinks:** Proponents felt that the City should pursue opportunities to use natural areas as carbon sinks. Participants identified protecting and expanding natural areas like forests and wetlands, naturalizing public park spaces and converting excess publicly and privately-owned lands into natural areas. Participants also noted how there were crossover benefits to

increased natural areas including reducing flood risk and the urban heat island effect.

- **Education, partnerships and research:** Some comments highlighted how there are opportunities to partner with educational institutions like the University of Alberta and NAIT to fund research and implementation of carbon capture and sequestration technologies. Some participants also felt that Alberta's robust industrial sector and leadership in the field of technologically-based carbon capture were opportunities to be leveraged by the City to meet its long-term climate goals.
- **Improving energy efficiency:** Improving energy efficiency across all sectors was identified by stakeholders as an important aspect of reaching climate goals. Given the significant amounts of greenhouse gas emissions that are generated from energy production, some stakeholders identified existing concepts like 'Negawatts' which are units of energy that are not produced because of improved efficiencies by consumers.
- **Urban agriculture:** A range of urban agriculture opportunities were identified as potential actions that the City should take to meet its climate goals. Participants noted that opportunities, like planting more fruit trees, converting vacant lots and front yards to agriculture lands and constructing green roofs, are small actions that individual residents and landowners can take to contribute to the climate goals. Participants were also supportive of how increasing local urban agriculture can contribute to local food security.

"When you look at a tree - you are looking at our best tool to regulate the carbon cycle and to mitigate the effects of climate change."
-Spark 2019: Carbon Positive participant

"Parks and public space that become edible - feed the communities (employ pickers, processors, allow storage)"
-Just and equitable workshop participant

Barriers

The deployment of these technologies should not take the place of aggressive emissions reductions strategies in other areas.
-Green Ribbon Panel - policy review participant

- **Escape route for business as usual:** Some participants were concerned that the use of carbon capture and sequestration techniques will allow society to continue with business as usual without addressing the underlying issues of carbon emissions.
- **Energy requirements:** Some participants were concerned that the implementation of large scale carbon capture technologies

currently requires significant energy input to function. They felt that this was a challenge in the Edmonton context where a significant portion of the region's energy is derived from high emissions sources. As such, some participants noted that carbon capture technology should only be implemented once the energy grid is based more on renewable sources.

- **Natural area trade-offs:** Participants noted that there were challenges to be addressed when prioritizing different design options. This included concerns that higher density developments resulted in the removal of mature trees on private property, or how LRT design plans resulted in tree removal along the LRT right-of-way.

"Incentives/property tax percentages for replacing lawns/tree planting"
-Just and equitable workshop participant

- **Aesthetics of naturalized spaces:** Some participants were concerned that there would be pushback from Edmontonians who felt that the naturalized areas were messy and did not meet community standards for yards. They also felt that there would be a lack of uptake from Edmontonians who did not know how to maintain or manage naturalized yard spaces.

"Get rid of grass on City parks and properties - replace with clover and low maintenance native plants."
Environmental Advisory Committee Participant

Solutions

- **Naturalization of park spaces:** Participants indicated that the City should plan to naturalize a significant portion of public lands including portions of parks, berms and medians.
- **Replace trees:** For participants who were concerned that new developments were resulting in trees being removed, they indicated that the City should mandate that any trees that were removed from private property should be replaced either on-site or through

cash-in-lieu as development occurs.

- **City requirements:** Some participants indicated that the City should begin to require businesses that operate in Edmonton to use materials that are based on carbon capture technologies. Potential materials include biochar from burning organic waste as well as concrete that is partially derived from capture carbon products.
- **Industrial sequestration:** Stakeholders indicated that there were more opportunities to implement carbon capture systems at emissions at major industrial developments than compared to Direct Air Capture technologies that draw greenhouse gases directly from the atmosphere. Major industrial emitters were identified as the best locations for major carbon capture and storage technology to be implemented and specific comments identified that industrial carbon capture is about urbanizing technology currently used in the oil and gas industry.

Climate Shift 7: Economic Development

Similar to the Just and Equitable Transition Climate Shift, Economic Development has been identified both as a Climate Shift as well as a lens through which all the other Climate Shifts can be designed to ensure that the transition brings opportunities for continued prosperity in the region. In addition to receiving input from members of the public, an Economic Development focused workshop was held with targeted stakeholders working in that field in Edmonton.

Opportunities

"Experiment with regulatory changes the way you would for other innovations"
-Economic Development Workshop Participant

- **Economic diversification and regulatory signalling:** The most common and overarching focus was the need to diversify Edmonton's economy. Participants also felt there was a need for the City and other levels of government to give clear regulatory and policy signals to encourage the market to shift in alignment with the updated CETS. Potential actions included making direct investments in projects and reducing regulatory barriers for new renewable projects.

- **Market opportunities:** Many comments were focused on identifying how the transition can be an economic development and market opportunity. This included additional work to identify monetary opportunities and value propositions, define value, find investment capital and establish an appropriate return on investment.

"Partner regionally to see shared benefit EMRB / Edmonton Global - especially for food!"
-Edmonton Food Council participant

- **Partnerships:** Partnerships were identified in order for the City to provide support for actors working in key areas that are not directly related to the City's jurisdiction or mandate.
    - Educational institutions like the University of Alberta, NAIT and MacEwan University
    - Collaboration with other jurisdictions including the provincial and federal governments
    - Investment attraction and industry advocacy organizations
    - Large emitters, corporations, investors and banks
    - Youth and ambassadors to different cultural communities
- **Political leadership:** Stakeholders identified the need for ongoing political leadership on the topic of climate action. This includes:
    - City funding into green technologies
    - Investment and subsidies for green retrofits
    - Mandate green procurement practices by the City
- **Export expertise to the world:** Some participants indicated that businesses in the Edmonton area should be focused on developing technologies and solutions to the climate crisis that can be exported around the world. They felt that Edmonton's position as an energy sector hub and industry leader should be leveraged to implement and expand the capacity of technological solutions to reduce greenhouse gas emissions.

"Build awareness / understanding that saved energy from energy efficiency is a resource that delivers value to utility systems, and the economic value of that energy resource"
-Economic development workshop participant

- **Changing our language:** Participants identified that there is a need to change the language that the City and Edmontonians use when discussing the transition. They noted that it is important to focus on the positive changes that will come from the transition

including changing reliance on global market systems, job growth and investment in new industries and benefits to communities, households and businesses.

Barriers

- **Cost of transition:** Members of the public were more likely to ask questions related to the cost of the transition like "Who will be paying for this?" and "Will there be tax savings?" Many suggested that the City should help homeowners with the cost of retrofitting their homes. This included suggestions for rebates and incentives on retrofits and the installation of renewable energy systems. Members of the public were also more likely to specifically identify low-income individuals or families and oil and gas workers as needing support during the transition.
- **Culture shift:** Participants were in alignment that there is a major culture shift required both by business and consumers in Edmonton to meet Edmonton's climate goals. Stakeholders highlighted that there needs to be incentives and policy changes to speed up market changes.

- **Regional competition:** Stakeholders identified the presence of regional competition and a lack of alignment amongst regional municipalities. They indicated that the City of Edmonton may face challenges meeting its goals if they are not supported by the actions of other regional municipalities.

Solutions

- **Emerging industries:** Participants shared that Edmonton might be best placed to prosper from the transition by supporting emerging technological industries like smart cities, artificial intelligence and other locally-based solutions.
- **Green workforce training:** Stakeholders identified the need to raise awareness and access to green jobs and training programs. Including:

- Build green training into existing job readiness programs (i.e. Water Wings, Verto, Kids in the Hall)
- Green jobs for new graduates
- Work with skilled workers to support their transition to less carbon-intensive industries

Economic Development Focus Areas

Participants of the economic development workshop were asked to help identify possible focus areas for economic development as it related to the CETS. The themes below summarize the feedback.

- **Financing the transition:** Participants raised a number of potential options for helping to finance the transition. Many participants felt that there was a need to ensure that there are market opportunities for businesses during the transition. It was felt that this is one of the main ways to ensure that businesses will align their operations with the energy transition.

  Participants also identified the need for incentives, loan programs like the Property Assessed Clean Energy program (also known as Clean Energy Improvement Program), leveraging federal and provincial funds and charging additional taxes on consumer and industry emissions. There were also specific suggestions that the City focus its incentives on small businesses and start-ups rather than large corporations given the funding that they have available to them.
- **Integrating the CETS work:** Participants identified the need to use existing and developing networks of businesses and advocates to ensure that there is alignment between the updated CETS and the business community. There were also comments about the need for funding that aligns with the CETS as well as changing regulations to support cleaner energy products as well as supporting public and private clean energy procurement. Finally, some comments also suggested that the City focus on communicating the opportunities and needs for businesses to align their operations with the CETS.
- **Regulations:** Participants identified a range of regulatory changes and programs that could be considered to align the CETS with the

business community. They included extending manufacturer responsibility, monetizing emissions reductions, allowing innovative funding programs, improving permitting processes and working with other levels of government to align the regulatory framework.

- **Research Required:** Participants saw opportunities to further research topics such as smart cities integration, carbon neutral materials and buildings, emissions baselines and local implementation pilots, to support the CETS update.
- **Advocate and Educate:** Participants saw advocacy and education opportunities with groups such as young adults, policymakers, industry executives, large energy users as well as commercial building owners and managers. In addition, participants identified the need for additional education around life cycle costs (and emissions) for industry and operators. And identified the need for broader education and communication through advertisements and other marketing campaigns.
- **Data:** Opportunities to use data to support the transition were identified in the areas of employment, workforce information and business data. In addition, it was identified that there would be benefits in publishing the results of pilot projects and implementing open data principles.
- **Success criteria:** When asked to identify potential success criteria for the transition, participants mentioned improving quality of life, alignment between the public and stakeholders, as well as continued prosperity for the region.

Systems Change Themes

As it relates to climate change, Edmontonians are interested in a much broader spectrum of environmental issues than limiting greenhouse gas emissions and generating renewable energy. The following broader environmental themes were commonly brought up by participants.

- **Regional action:** Edmonton's regional context was commonly identified as both a solution and a challenge when it comes to implementing the CETS. Many participants identified opportunities to work with regional partners including Indigeneous groups, neighbouring municipalities as well as individual rural landowners and stakeholders. Despite these opportunities, some participants felt that there may be challenges in aligning the City of Edmonton's work with that of its neighbours who are even more reliant on oil and gas investment for jobs and taxation.
- **Healthy city:** Many participants identified that there are additional benefits of undertaking the energy transition. This included creating more social communities, improving the physical and mental health of residents and increasing space for wildlife in the city.

- **Food system:** Improving Edmontonians' access to a more sustainable local food system was a goal many participants felt should be part of the CETS update. This included providing additional opportunities for urban agriculture, using plantings on public and private lands to provide food and working with research institutions to improve the sustainability of local agricultural practices.
- **Community-based approaches:** This includes the range of actions that could be undertaken at a community level and whose implementation might fall to community-organizations. Community-based approaches that were identified included establishing local energy and other co-operatives, providing opportunities for neighbours to support each other's transition and

connecting the CETS implementation with local community-organizers and ambassadors.

- **Communication and collaboration:** One of the most common themes raised by participants was that there was a need to undertake information and communication campaigns about the goals of the CETS. This included general advertising and continued communication campaigns about the need for the energy transition as well as specific campaigns with stakeholders to raise awareness about opportunities for integrating day-to-day business operations with the goals of the CETS.
- **Urbanism:** Participants commonly identified that it would contribute to Edmonton meeting its climate goals if the City promoted a more urban form of mixed-use and mixed-income communities to develop around the city. This included promoting mixed-use communities that improve walkability as well as integrating community-level commercial nodes.
- **Water and wastewater management:** Many comments received from the public engagement sessions were interested in having the City take a more active role in reducing water use in Edmonton and developing infrastructure and practices to make better use of wastewater
- **Climate culture shift**: A common theme was the need for an overarching climate culture shift. The culture shift is about the ongoing changes in social norms in order to have Edmontonians make more decisions that contribute to meeting our climate goals. This culture shift differs from other Climate Shifts that address technical solutions like increased energy efficiency and renewable energy generation to meet our climate goals. Instead, it requires large and small changes to the complex patterns of behaviour and consumption that influence uptake and market demand for the other shifts.

6. Highlights

General Highlights

The majority of engagement activities were focused on gathering feedback on the proposed update of the Community Energy Transition Strategy (CETS) and its Climate Shifts. Twelve general themes of feedback were identified and will be considered in the update of the CETS:

1. **Take action now:** The impacts of climate change are unpredictable, wide-ranging and potentially irreversible.
2. **There is no "silver bullet":** The CETS update must focus on a wide range of actions to meet the City's climate goals. Fundamental system changes are needed.
3. **Pandemic recovery opportunities:** Implementation of the CETS can bring opportunities for economic recovery during and following the COVID-19 pandemic.
4. **Support investment in the transition:** The transition requires a significant amount of public and private financial investment. There is recurrent concern of how to fund the transition.
5. **Sustain the transition:** Choose actions that are sustainable and desirable in the long run. This will help support a high quality of life for current and future Edmontonians.
6. **Ensure a just and equitable transition**: Ensure that the implementation of this transition doesn't exacerbate existing inequalities and that it brings opportunities for all Edmontonians.
7. **Leverage this opportunity for economic transition:** Beyond an energy transition this is an opportunity for Edmonton to innovate, leverage existing skills and diversify its economy.
8. **Change the culture:** Significant culture change will be required across many systems to embrace the overwhelming challenge of this transition. These include energy, transportation, food, waste and social and community systems. Our culture is already changing.
9. **Educate and communicate:** Wide-reaching awareness campaigns are necessary to help Edmontonians understand the needs, targets and solutions. This includes strategies to educate people on the new concepts and on the impacts of their lifestyle decisions.

"I like that we are focusing on a wide variety of potential solutions. I believe we need all of the things mentioned to get near those targets."
-Energy Transition Climate Resilience Committee member

10. **Align with the City Plan:** To succeed the CETS must align its targets and actions with those in the City's new municipal development plan.
11. **Look beyond greenhouse gas emissions:** A range of sustainability issues should be considered including air and water quality, waste management, biodiversity, ecosystem and public health, as well as social, cultural and economic perspectives.
12. **Partner for change:** A wide range of partnerships will be needed to meet the City's climate goals. This includes partnerships with Indigenous communities, education and research institutions, industry and community organizations.

Climate Shifts Highlights

Throughout the engagement process, there were several common findings for each Climate Shift that were reiterated consistently by stakeholders and members of the public.

Climate Shift 1: Tools & Targets

- **City-level carbon budget:** Support for the City to use a local carbon budget to track and prioritize municipal projects, as well as to consider the impact of all decisions on the carbon budget.
- **Global aspirations with local considerations:** The CETS should use global best practices for measurement and monitoring and consider the uniqueness of Edmonton, including the connection to the oil and gas sector in the region.

Climate Shift 2: Low Carbon City and Zero Emissions Transportation

- **Getting to zero emissions transportation:** There was acknowledgement that implementing an electrical transportation system is a key part of reducing GHG emissions. In Alberta, this move must be accompanied by a significant shift towards large-scale renewable energy production.
- **Active transportation and enhanced transit:** Participants identified a wide range of solutions (and barriers) to enhancing transit services which they considered key for the transition, as well as the need to expand the active transportation infrastructure network. This includes a more walkable city and separate bike lanes, winter clearing, secure storage, and bike share.

- **Cultural change:** There is a need to make a cultural shift towards renewable energy sources, active and public transportation, electric vehicles, and towards being a greener city. This could bring communities and diverse groups together to collectively and individually change our choices and actions.

Climate Shift 3: Emissions Neutral Buildings

- **Realistic targets:** Base targets on modeling and then determine what is achievable in Edmonton.
- **Education opportunities:** We need to grow the expertise of Edmonton's building industry to meet the technological challenge of designing and constructing carbon neutral buildings.
- **Cost of energy retrofits:** Retrofitting existing buildings will be a major task at a substantial cost. But this is necessary work for a low-carbon future.

  Note: Additional targeted stakeholder engagement with members of the building and construction industry around this Shift is currently underway. Their feedback is not captured in this report but will be included in the final engagement report and integrated into the updated CETS as deemed appropriate.

Climate Shift 4: Renewable Revolution and Circular Economy

- **Clean energy as the basis for the transition:** A system of consistent and affordable renewable energy is crucial to meeting Edmonton's climate goals. Many of the actions, such as electrictifying transportation, are founded on having access to clean energy.
- **Energy efficiency:** Use less energy and use the energy we produce more efficiently. Efficiency-based solutions allow Edmontonians, businesses and industry to take action in ways that save money in the long run.
- **Circular economy and waste management:** Edmontonians want to reduce their waste, and reuse and participate in more in the sharing and circular economy. They want to see extended producer responsibility, less waste of resources and better management of the waste produced.

Climate Shift 5: Just and Equitable Transition

- **Define just and equitable:** This is the time for a just and equitable transition but these terms need to be defined to make sure we are all talking about the same thing.
- **Made in Edmonton approach:** Applying an equity lens is a global best practice and participants welcomed the inclusion of such lens and Shift in the CETS. The actions on the updated CETS need to be accessible to all Edmontonians and not negatively impact vulnerable or marginalized people in our city. Energy poverty must be addressed.

Climate Shift 6: Carbon Capture and Nature Based Solutions

- **Nature based approaches:** Our natural areas and open spaces can serve as carbon sinks (as well as support the quality of life of Edmontonians). Tree planting, urban farming and partnering to use natural spaces outside of Edmonton boundaries can play a key role. Nature based approaches.
- **Technology based approaches:** Technology based approaches to carbon capture are most efficiently used when integrated into heavy carbon emitting processes related to industrial developments.

Climate Shift 7: Economic Development

- **Impact on oil and gas:** Edmonton's economy is tightly linked with the oil and gas industry which is expected to be significantly impacted over the time frame of the transition. Because of this, stakeholders have been clear that the CETS needs to explicitly consider economic development challenges and opportunities and support people whose livelihoods have been impacted during the transition.
- **Economic development integration:** The energy transition must be pursued as an economic diversification transition. Opportunities for economic development can provide support for the investments needed.
- **Regional Considerations:** Edmonton's economy is tied to its regional neighbours and the province. Regional alignment to provide a just, equitable and prosperous future is important.

7. What Happens Next

The purpose of this phase of engagement was to identify **what** actions should be taken to meet Edmonton's climate goals, including reducing its emissions to fit within the identified carbon budget. The City's project team is using the data gathered in this phase of engagement to inform the draft update to the Community Energy Transition Strategy (CETS), and identify new ideas and opportunities. Engagement results have been shared with the project team in a variety of formats including an interim data summary in early 2020, the full tabulated engagement input (September 2019 to May 2020) and this summary report.

The draft update to the CETS will be presented to Edmonton City Council in the fall of 2020.* In addition to the input from this phase of engagement, seven other streams of work are informing the update to the CETS:

1. 18 Policy briefs written and/or reviewed by experts
2. Technical modelling of the proposed actions and their emissions
3. Financial modeling of the proposed actions
4. Jurisdictional review of 52 cities
5. Scientific reports and best practices (IPCC, C40)
6. Topic-specific input on *Climate Shift 3: Emissions Neutral Buildings* from building and development industry
7. Engagement with internal City of Edmonton stakeholders

*Dates not confirmed due to COVID-19

The next phase of engagement, tentatively scheduled from July to October 2020, will seek advice about **how** to implement the proposed CETS with Edmonton-focused actions/solutions. A second What We Heard report will be prepared with the input received during the next phase and will help inform the CETS document. The updated CETS will be presented to City Council early 2021 for approval.

**At the time of writing this report, dates for engagement and City Council meetings are not confirmed.*

All subsequent engagement activities will be respectful of the directives of Alberta Health Services and Alberta's Chief Medical Officer of Health regarding the COVID-19 pandemic in the Edmonton area.

8. Appendices

Appendix A: Engagement Data

Two versions of the engagement data are available:

1. A PDF of the engagement data is available at Edmonton.ca/EnergyTransitionUpdate
2. A Google Sheet with engagement data is available on request. Please send an email to andrea.soler@edmonton.ca

Appendix B: Memorandum of Understanding

The Memorandum of Understanding between Enoch Cree Nation and the City of Edmonton, the Memorandum of Cooperation and Dialogue Between Confederacy of Treaty Six First Nations & City of Edmonton, and the Memorandum of Shared Recognition and Cooperation Between Métis Nation of Alberta and City of Edmonton are available online at: https://www.edmonton.ca/city_government/initiatives_innovation/indigenous-relations.aspx

Appendix C: Engagement Information Boards

A PDF is available online at Edmonton.ca/EnergyTransitionUpdate

Appendix D: Glossary of Terms

Carbon budget: The amount of emissions permitted over a period of time in order to stay within a temperature threshold. As we release greenhouse gases, the remaining budget is reduced.

Carbon capture: A process that captures carbon emissions from their source or directly from the air.

Carbon offsets: Reducing carbon emissions to compensate for emissions released elsewhere. Offsets are tradeable (they can be bought and sold).

Carbon sequestration: The long-term storage of captured carbon emissions in vegetation and soils through plant growth or underground rock formations.

Carbon utilization: A process that uses captured carbon emissions as a resource when creating new products or materials. Circular economy: an economy in which resources are kept in use for as long as possible. At the end of a product's life its components are recovered and regenerated into other products rather than being disposed of in a landfill.

Emissions neutral: Describes technologies or systems that have no net impact on global greenhouse gas levels. This means they either do not add emissions to the atmosphere or remove as many emissions as they create.

Greenhouse gas emissions: The release of atmospheric gases like carbon dioxide and methane that contribute to global warming (generally referred to as carbon emissions).

Just & equitable transition: A dialogue and planning process to ensure that all Edmontonians have access to the benefits and opportunities this energy transition can bring, and that nobody is unfairly impacted by these changes.

Low carbon city: A city-building approach that focuses on reducing carbon emissions primarily by minimizing or eliminating the use of energy produced from fossil fuel combustion. One tonne of carbon dioxide (CO2): is a unit of greenhouse gas emissions.

One tonne of CO2: It is roughly equivalent to the amount of greenhouse gases released by driving 4500 kms or heating a home over the winter months.

Renewable energy: Energy that is produced with a fuel source that is naturally replenished within the lifespan of a person (e.g. solar, wind, geothermal).