

Let's talk...

# OUR CLIMATE SOLUTIONS



Leduc has shown its strong environmental leadership over the past several years through initiatives to keep our environment even cleaner and greener for many years to come.

Our environmental initiatives – from waste diversion to enhancing our natural areas – help Leduc achieve the vision set out in the Leduc Environmental Plan – Phase 1, approved by Leduc City Council in 2012.

That plan identifies another major initiative – to develop a plan to reduce greenhouse gas (GHG) emissions throughout our community. GHG emissions are a leading cause of our changing climate.

The City of Leduc has already implemented initiatives that save money and reduce GHG emissions because they make good business sense. It's time to take the next step and create a GHG reduction plan. Throughout the process, we will gather ideas from the community through surveys, workshops and public information events and materials to give everyone ample opportunity to offer input.

Leduc's Local Action Plan for GHG Emission Reduction will be a made-in-Leduc solution to a global issue. Our plan will respect our unique local priorities, using the lessons we have learned from our established environmental initiatives and others who have tackled similar challenges.



## Benefits of reducing GHG emissions

Our local action plan can:

- produce a cleaner, healthier and even safer community,
- save the city, residents and business money,
- increase community resiliency against future regulations and pricing, and
- reduce impacts to our climate.



## SHARE YOUR VIEWS

*To develop the most effective plan possible, we need to hear from you!*



Check out [Leduc.ca/ourclimatesolutions](http://Leduc.ca/ourclimatesolutions) for current engagement activities and events.



## Setting the stage for plan development

Our climate is changing. Once again, Leduc is showing its environmental stewardship by both preparing for, and reducing, greenhouse gas emissions (GHGs).

We have already set strong foundations for the project, including:

- approving a 10-year Weather and Climate Readiness Plan that highlights adaptation measures to prepare for changing local weather impacts,
- starting implementation of the readiness plan,
- completing a baseline assessment of Leduc's current greenhouse gas emissions, and
- securing a \$113,600 grant from the Federation of Canadian Municipalities, with assistance from the Government of Canada, to develop the Local Action Plan for GHG Emission Reduction.

## Steps to plan development

Development of Leduc's plan will take into account the views of residents, business and community representatives, stakeholder groups, civic staff and City Council, and the Leduc Environmental Advisory Board (LEAB). LEAB will assist the planning team at key points in the planning process and fulfil the role of community advisor.

The following steps will ensure a transparent process that will capture ideas and test recommendations before City Council approves the plan.

- 1 ENGAGE** the Leduc community for plan ideas.
- 2 COMPILE** preliminary recommendations.
- 3 PRESENT** preliminary recommendations to the Leduc community for further input.
- 4 DEVELOP** final recommendations and present them to City Council for approval.



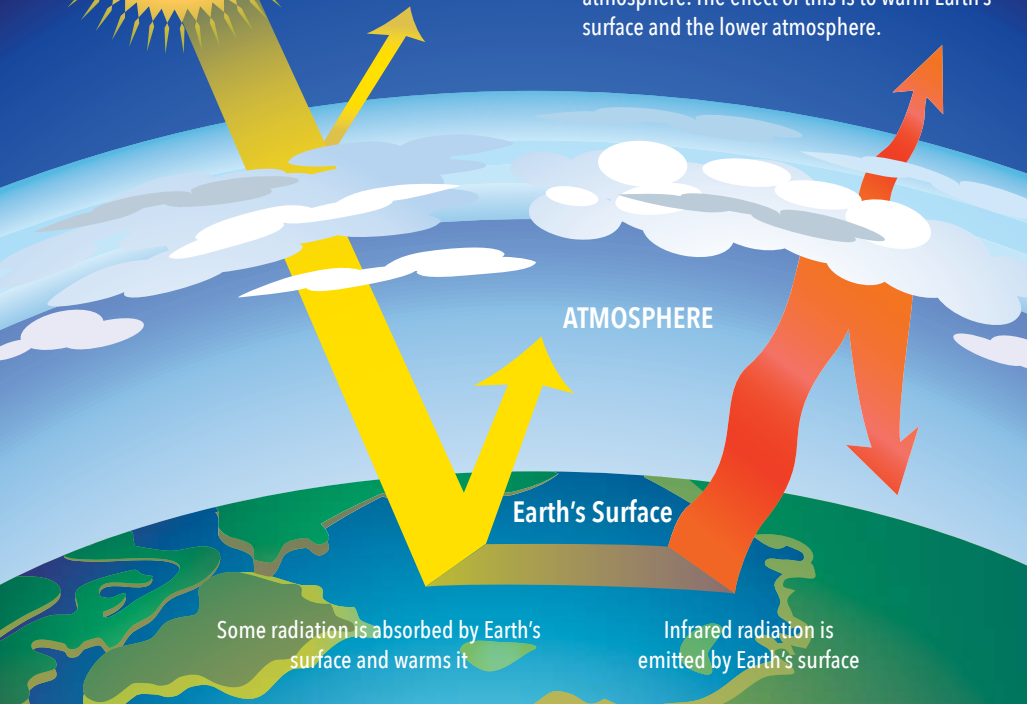
## Plan development timeline

<b>Apr - Jun 2018</b>	Conduct public survey and series of civic staff and stakeholders workshops to generate a vision and action options.
<b>Jun - Aug 2018</b>	Screen options and model GHG reduction scenarios from community input.
<b>October 2018</b>	Hold a public open house to present a draft GHG action plan to the community for further discussion.
<b>Nov - Dec 2018</b>	Finalize the plan.
<b>By early 2019</b>	Present final recommendations to City Council.

## THE GREENHOUSE EFFECT

Some solar radiation is reflected by Earth and the atmosphere

Some of the infrared radiation passes through the atmosphere. Some is absorbed by greenhouse gases and re-emitted in all directions by the atmosphere. The effect of this is to warm Earth's surface and the lower atmosphere.



## Our changing climate



The changing climate is a long-term shift in weather conditions measured by changes in temperature, precipitation, wind, snow cover and other indicators, according to Environment Canada. It can involve changes in average conditions and in extreme conditions.<sup>1</sup>

Climate change is a result of the expansion of the natural greenhouse effect. Higher GHG concentrations in the atmosphere are amplifying the greenhouse effect and warming the planet, affecting wind patterns, precipitation and storm events.

Global warming does not mean every day or year will be warmer than the previous one. Changes in weather patterns will continue to produce some unusually cold days and nights, and winters and summers, even as the climate warms. The 15 hottest years on record have occurred between 2001 and 2017.<sup>2</sup>

There is growing consensus that extreme weather events such as very hot days, very cold days or intense precipitation likely will become more frequent and more intense.

## Greenhouse gases (GHGs)

The City of Leduc's 2015 Greenhouse Gas Inventory calculates GHG emissions including carbon dioxide (CO<sub>2</sub>), methane and nitrous oxide coming from the City of Leduc and the Leduc community. The GHGs are summarized into a standard unit – tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e).

## Leduc's climate is changing

Leduc is being impacted by our changing climate. Leduc's mean annual temperature over the past 30 years has increased 2.7°C. Future projections for the Leduc region predict a further increase in mean annual temperature of 2.0°C by the 2050s.<sup>3</sup>

Stream flows in the North Saskatchewan River are expected to continue to decline as Alberta glaciers are projected to lose 80-90% of their volume by the end of the century.<sup>4</sup>

<sup>1</sup> Environment Canada, Frequently Asked Questions About Climate Change

<sup>2</sup> National Oceanic and Atmospheric Administration

<sup>3</sup> City of Leduc Weather and Climate Readiness Plan

<sup>4</sup> City of Leduc Weather and Climate Readiness Plan

# ENVIRONMENTAL *success!*



Operational  
**EFFICIENCY**  
+  
Greenhouse Gas  
**REDUCTIONS**

## LOW GHG WASTE



**Organics diversion:**  
Since 2013 Leduc's curbside organics collection has diverted over 12,000 tonnes of material from landfill.

### ANTICIPATED RESULTS:

ORGANICS/  
HOUSEHOLD

**300** KG  
COMPOSTED  
/YEAR

GHG  
EMISSIONS  
REDUCED OVER  
40 YEARS FROM  
LANDFILL

**10,450**  
tCO<sub>2</sub>e

## SMART URBAN PLANNING

### Crystal Creek Outline Plan:

Key GHG reduction elements include:

- proximity to neighbourhood services and amenities,
- pedestrian-oriented design,
- transportation options, and
- higher density.



tCO<sub>2</sub>e = TONNES OF CARBON DIOXIDE EQUIVALENT

## RENEWABLE ENERGY



### Rooftop Solar Project

Leduc Recreation Centre (LRC) & City Operations Building

**5,622**  
SOLAR PANELS

### ANTICIPATED ANNUAL RESULTS:

OPERATIONAL  
SAVINGS

**\$100,000**

MEGAWATT  
HOURS PRODUCED

**1,600**

GHG  
EMISSIONS  
REDUCED

**1,025**  
tCO<sub>2</sub>e

EQUIVALENT  
TO TAKING

**220**  
CARS OFF  
THE ROAD



## LOW GHG EMITTING TRANSPORTATION

**Leduc Transit:** Transit use is a major community priority - and more residents are using the convenient service.

### ANTICIPATED IMPACTS OF CURRENT RIDERSHIP:

EQUATES  
TO REDUCING

**278**  
CARS DRIVING  
1 YEAR  
(2011-2017)

GHG  
EMISSIONS  
REDUCED

**1,300**  
tCO<sub>2</sub>e

\*A passenger is counted each time he or she boards a bus originally or by transfer.

### FROM 2011 TO 2017:

INCREASED  
RIDERSHIP

**147%**  
33,106 - 81,654

INCREASED  
BOARDINGS\*

**173%**  
33,106 - 90,504

## ENERGY-EFFICIENT BUILDINGS

**LRC:** Designed with technologies that reduce GHG emissions including:

- a heat recovery system to meet the arena's hot water requirements,
- low flow bathroom fixtures and energy efficient lighting reducing energy consumption,
- an efficient building envelope and reflective roofing system that insulates well and minimizes heat and energy loss, and
- bike storage to help reduce car-based trips.

## EFFICIENT INFRASTRUCTURE

**LED streetlights:** Fortis Alberta, in partnership with the city, has converted 2,500 streetlights. The improved lighting increases safety. As well, the new lights direct their light downward, reducing light pollution.

### ANTICIPATED ANNUAL RESULTS:

ELECTRICITY  
SAVED

**1,100,000**  
KWH

ENOUGH  
TO POWER

**150**  
HOMES

GHG  
EMISSIONS  
REDUCED

**710**  
tCO<sub>2</sub>e

EQUIVALENT  
TO TAKING

**150**  
CARS OFF  
THE ROAD



PARTNERING with *nature*

Eco-smart Hotline: 780-980-7107  
ecosmart@Leduc.ca

Sign up through [Leduc.ca/ourclimatesolutions](http://Leduc.ca/ourclimatesolutions)  
for project updates or to share your views directly.