

Environmental
2022 **PROGRESS
REPORT**

GROWING A CLEAN, GREEN
& HEALTHY LEDUC

PARTNERING with *nature* 

CITY OF
Leduc 





3 | Civic Projects

(ie., Electric Equipment, Wildflower Gardens, Fleet Vehicle Updates, Water Loss Prevention Program)



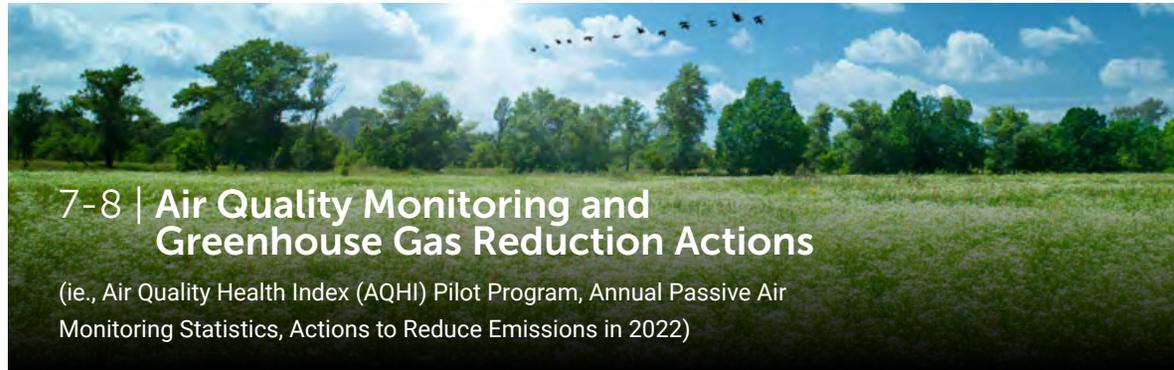
3 | Regional Initiatives

(ie., Edmonton Metropolitan Region Board (EMRB) Climate Risk and Vulnerability, Solid Waste, and Stormwater Collaboratives)



4-6 | Natural Area Enhancement

(ie., Tree Planting, Wetland Restorations, Pollinator Habitat, Bird Counts, Hens & Bees Pilot Program, Pesticide Survey)



7-8 | Air Quality Monitoring and Greenhouse Gas Reduction Actions

(ie., Air Quality Health Index (AQHI) Pilot Program, Annual Passive Air Monitoring Statistics, Actions to Reduce Emissions in 2022)



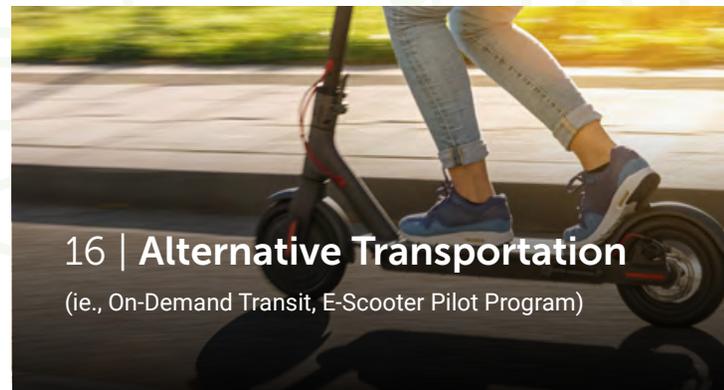
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(ie., Clean Energy Improvement Program (CEIP), Home Energy Efficiency Kits, Solar Carport and Electric Vehicle Chargers)



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(ie., Recycle Coach, Waste Diversion Statistics, Eco Station Updates)



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(ie., On-Demand Transit, E-Scooter Pilot Program)

Civic Projects

Parks and Open Spaces

- Parks and Open Spaces implemented the use of electric chainsaws for tree maintenance. They are lightweight, compact, quiet and reduce our environmental footprint!
- Parks staff and the Leduc Wildlife Conservation Society (LWCS) installed a native wildflower garden north of Telford Lake.



Fleet Services

- Fleet Services received \$12,000 in funding from the Alberta Municipal Climate Change Action Centre (MCCAC) for two fully electric John Deer Gators for parks maintenance. The Gators will save in fuel costs and result in a 2-tonne reduction in greenhouse gases per year.
- Fleet Services also continued right-sizing principles in fleet procurement, replacing three full sized trucks with three mid-sized, fuel-efficient trucks.

Utility Services

- Utility Services implemented a one-year water loss prevention program. Seven years of data were analyzed to identify meters that were under registering or incorrectly sized at the time of installation. All issues were thoroughly investigated and resolved.



Regional Initiatives

Engineering and Environment staff continued to represent Leduc on the **Alberta Capital Airshed, Capital Region Municipal Sustainability Group, Edmonton Energy Transition Learning Network, and Edmonton Region Waste Advisory Committee**. These organizations foster productive collaboration across the Capital Region and ensure alignment with current regional initiatives.

Edmonton Metropolitan Region Board

In 2022, Engineering and Environment staff represented the City of Leduc at the Edmonton Metropolitan Region Board (EMRB) Collaboratives including the:

Climate Risk and Vulnerability Assessment Collaborative: This includes development of a Climate Risk and Vulnerability Assessment which serves to inform future adaptation action to reduce risk. The intention is to identify opportunities to collaboratively address climate risks within the region, leveraging on similarities in climatic and geographic characteristics, as well as interdependent infrastructure, assets, and economies. This will facilitate a coherent response to climate risks across the region, avoid duplication of efforts, and prevent situations where actions in one jurisdiction adversely impact others in the region.

Solid Waste Collaborative: This includes development of a Solid Waste Data Strategy to better define governance structure and determine how stakeholders can continuously improve data and manage data flow together.

Stormwater Collaborative: This includes predicting rainfall generation and considering climate change over the last 30 years, to ensure infrastructure is designed to withstand the impacts of today's storms, and to predict which areas are most vulnerable.



Natural Area Enhancement



Arbour Day

- 2018: **800** trees planted; 250 volunteers
- 2019: **800** trees planted; 180 volunteers
- 2020: **57** trees planted; 0 volunteers
(due to safety precautions taken during the COVID-19 pandemic)
- 2021: **661** trees planted; 46 volunteers
- 2022: **752** trees planted; 161 volunteers

In 2022, the City's annual Arbour Day event took place at the William F Lede Park Wetland Restoration Site. Participants planted 752 native trees in upland areas around the wetlands. The newly installed trees will help stabilize slopes, prevent erosion, and limit the growth of noxious weeds and other invasive plant species. These efforts will contribute to enhanced biodiversity, improved water quality, and flood/drought control for years to come.

Public Services staff planted an additional 254 large caliper trees throughout the city and 80 trees across the North Telford Commemorative Forest.





Natural Area Enhancement



Pollinator Garden Challenge

Creating gardens and landscapes that provide food, water, and safe shelter for pollinators can help boost pollinator populations and enhance natural plant biodiversity. Leduc joined this North American wide initiative in 2018 and saw 28 participants plant their own pollinator gardens last year.

Registrations:

2018 **73** 2019 **40** 2020 **10** 2021 **4** 2022 **28**

Bird Count

	SPRING		WINTER	
	#Birds	#Bird Species	#Birds	#Bird Species
2018:	2,368	108	678	25
2019:	1,281	103	1,071	25
2020:	3,254	135	1,255	32
2021:	1,353	96	606	30
2022:	809	78	213	21

Backyard Hens & Bees Pilot Program

As an extension to backyard gardening, the City's Backyard Hens and Bees Pilot Program offers participants a rewarding experience centered around enhanced personal food production and a strengthened connection to nature. The program encourages a deeper understanding and appreciation of where our food comes from and affords participants the opportunity to share the fruits of their labour (be it fresh eggs or raw honey) with family, friends, and neighbours – a true exercise in community building.

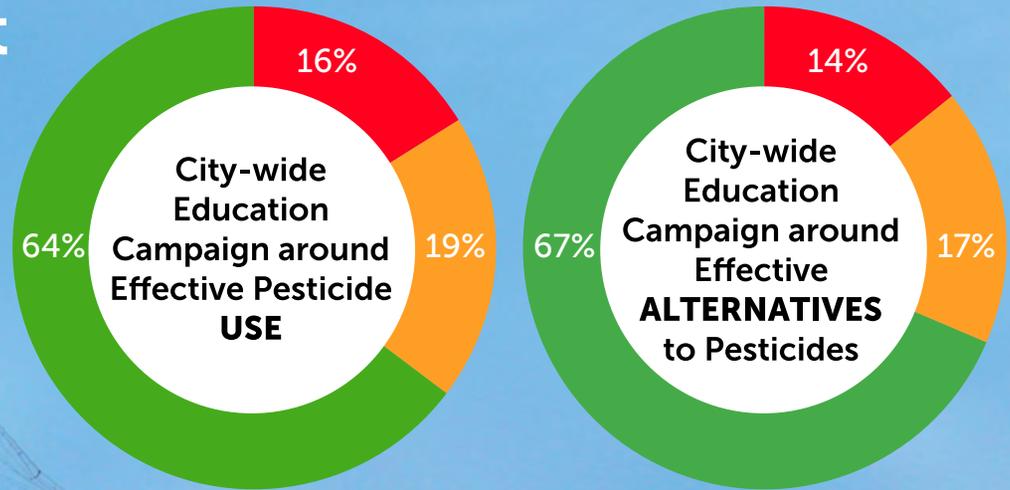
Applications opened in 2021 and the two-year pilot program continued into 2022. Significant public interest and engagement was achieved over the two-year period. Community feedback was overwhelmingly positive despite a low number of participants. Program success will be evaluated in 2023.

Natural Area Enhancement

Pesticide Survey Results

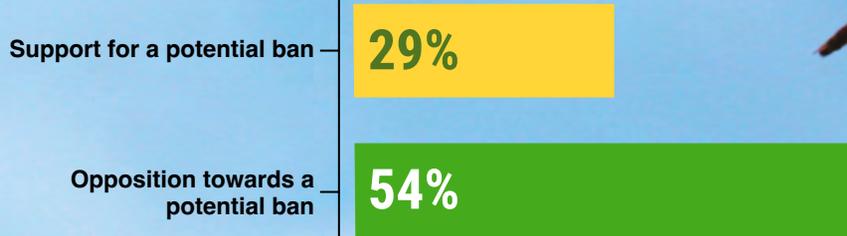
In 2022, the City invited feedback on the use of cosmetic pesticides, on residential and commercial properties in Leduc. A statistically significant online survey and phone survey was conducted; the results were collected to help shape City projects, policies and initiatives to better serve the community and support decision-making related to cosmetic pesticides.

Although 54% of respondents opposed any regulation of pesticide use, more than 60% of respondents were interested in an educational campaign on the topic.



● Low Support (1-2) ● Neutral (3) ● High Support (4-5)

POTENTIAL BAN ON COSMETIC / NON-ESSENTIAL PESTICIDE USE



Pesticide Use

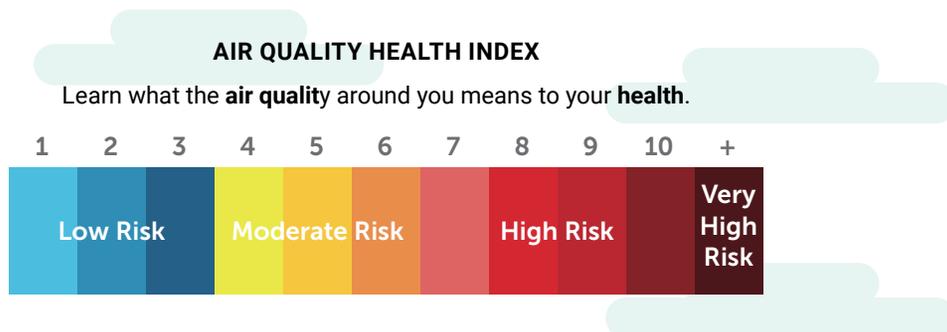
- 8 out of 10 experience pests on their property.
- 50% use pesticides to control pests on their property.

The most frequently mentioned benefit to using pesticides in the City of Leduc was pest prevention/control (62%) followed by beautification, aesthetics, appearance or cleanliness of property (21%).

Beautification and Naturalization of Parks and Green Spaces are Important to the Community

- 80% considered the beautification of parks and green spaces in the City **important**
- 69% considered naturalization efforts in environmentally sensitive areas in the City **important**
- 75% indicated benefits to using pesticides in the City
- 58% were satisfied with current beautification of parks and green spaces in the City
- 55% were satisfied with current naturalization efforts in environmentally sensitive areas in the City

Air Quality Monitoring



Air Quality Health Index (AQHI) Pilot Program

Many communities across Canada are familiar with the Air Quality Health Index (AQHI) as a tool for understanding outdoor air quality. The AQHI uses a formula with three core air pollutants to arrive at a number between one and 10:

NITROGEN DIOXIDE + GROUND-LEVEL OZONE + FINE PARTICULATE MATTER

The Alberta Capital Airshed (ACA) and Alberta Environment and Protected Areas (AEPA) have been exploring new, low-cost sensor technology called Aeroqual AQY monitors, to bring AQHI to more communities in an economically feasible way.

In 2022, Leduc was selected as the location for a one-year pilot program to test the efficacy and accuracy of these monitors. Given its population, regional and local emission sources, and distance from the nearest monitoring station, Leduc has long been ranked a top priority in Alberta for AQHI.

In 2022, the monitor was successfully installed at the Robinson reservoir pumphouse. Both AEPA and ACA are hopeful this pilot will offer a cost-effective solution to current monitoring gaps in our Airshed, and the City is excited to play an integral role in this advancement.

Air Quality

Air quality meets provincial objectives according to Leduc's passive air monitoring program at the dog park.

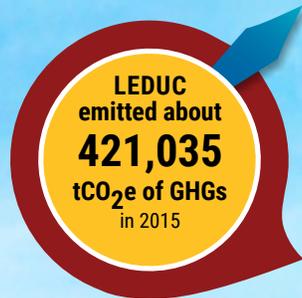
According to Leduc's air monitoring program, the City's annual average nitrogen dioxide (NO₂) reading in 2022 was 3.9 parts per billion (ppb). This was well below the annual Alberta Ambient Air Quality Monitoring Objective (AAAQO) of 24.0 ppb and aligned with the ACA regional monitoring passive network average of 4.0 ppb.

The City's annual average sulphur dioxide (SO₂) reading in 2022 was 0.6 parts per billion (ppb). This was well below the annual Alberta Ambient Air Quality Monitoring Objective (AAAQO) of 8.0 ppb and slightly below the ACA regional monitoring passive network average of 0.8 ppb.



Greenhouse Gas Reduction Action Plan

The City of Leduc's Greenhouse Gas (GHG) Reduction Action Plan offers a roadmap for emission reduction actions and provides a baseline to measure the effectiveness of these actions against.

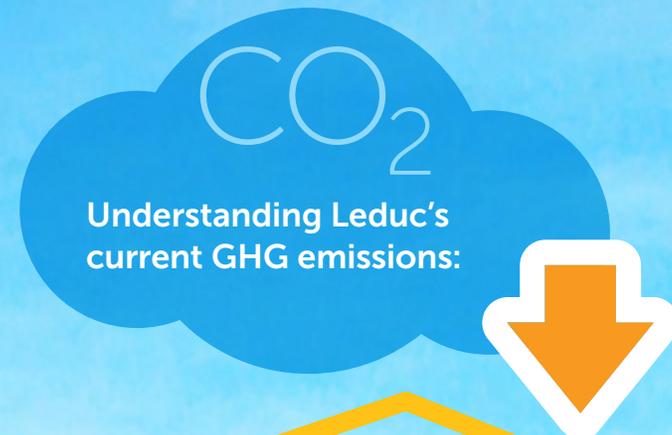


4% City of Leduc (16,400 tCO₂e)

Emissions come from building construction and operations, lighting, vehicles, sewage and solid waste.

96% Community (404,700 tCO₂e)

Emissions come from commercial and residential buildings, vehicles, industry and solid waste.



There are no new incremental costs associated with the approved 3% reduction target.



FROM 2015 - EMISSIONS INCREASE PROJECTED AT 6% BY 2030



Emission Reduction Targets

Council approved a GHG emissions reduction target of 3% BELOW business-as-usual by 2030, however additional actions to further reduce emissions are continually reviewed as applicable budget and grant funding becomes available.

CORPORATE TARGET:

8% reduction from 2015 by 2030 (equivalent to 20% reduction below business-as-usual forecast).

COMMUNITY TARGET:

6% above 2015 by 2030 (equivalent to 3% reduction below business-as-usual forecast).

Actions to Reduce GHG Emissions Taken in 2022

Every year the City strives to meet goals laid out in GHG Reduction Action Plan.

Energy Sector

- Clean Energy Improvement Program (CEIP) launch
- Home Energy Efficiency Kits
- Solar Carport and Electric Vehicle Chargers

Building

- Energy Audits conducted on Civic Facilities

Transportation

- E-scooter Pilot Program
- Fleet Vehicle Upgrades

Transit

- On-Demand Transit

Land Use

- Application to Natural Resources Canada's (NRCan) 2 Billion Tree program

Waste

- Expansion of Eco Station Styrofoam Pilot Project to include Polyethylene (EPE) foam

Education

- Educational signage installed around newly Restored Wetlands to educate on ecological benefits including carbon storage
- 2022 Arbour Day at the newly Restored Wetlands offered more education opportunities with participants

Energy Conservation

Solar Initiatives

The Leduc Recreation Centre (LRC) & Operations Building solar arrays remain a foundational energy conservation program in Leduc. As of 2022, LRC and Operations building carbon offsets are being sold on the carbon market to earn the City \$37,000 in operational savings each year. These operational savings are slated for ongoing sustainability objectives.

Solar arrays can also be found on the City's Eco Station, Protective Services Building and the new Solar Carport, which contribute to GHG emissions reduction, operational fund savings, and enhancing Leduc's environment.

	 ENERGY GENERATED (MWh)	 EQUATES TO NUMBER OF HOMES POWERED	 OPERATIONAL SAVINGS	 GHGS REDUCED (tonnes CO ₂ e)	 EQUATES TO VEHICLES OFF THE ROAD	 EQUATES TO NUMBER OF TREES PLANTED
 LRC & Operations	2020	1,520	= 211	\$139,671	866	= 188 = 14,296
	2021	1,400	= 190	\$180,000	1000	= 170 = 16,000
	2022	1,255	= 170	\$170,000	890	= 160 = 15,000
 Eco Station	2020	16	= 2	\$1,494	9	= 2 = 150
	2021	20	= 2	\$2,000	13	= 3 = 200
	2022	20	= 2	\$2,700	13	= 3 = 200
 Protective Services	2021	50	= 4	\$7,000	34	= 4 = 550
	2022	68	= 10	\$9,700	50	= 10 = 800



In 2022, Leduc's Solar Carport became operational which will generate another 26 MWh/year!



Energy Conservation

Improving Our Energy Efficiency

As part of the Municipal Energy Manager (MEM) Program, the City of Leduc hired a Municipal Energy Project Manager in 2021 to benchmark municipal facilities, identify energy savings opportunities, and implement greenhouse gas emission reducing projects. A number of exciting projects rolled out in 2022.

Clean Energy Improvement Program (CEIP)

With competitive interest rates and convenient repayment through property taxes the Clean Energy Improvement Program (CEIP) provides property owners with a flexible way to pay for energy efficiency and renewable energy projects. 2022 marked the first year of a four-year pilot program and saw many upgrade projects completed, including solar panel installations, energy efficient window/door upgrades, insulation upgrades, and tankless water heater replacements.

Visit myCEIP.ca/Leduc for more information



Funded by the Government of Canada and the Federation of Canadian Municipalities' Green Municipal Fund. Administered by Alberta Municipalities. *Some conditions apply.



Home Energy Efficiency Kits

The Fortis Save Energy Grant was received in 2022 and was used to build four home energy efficiency kits available at the Leduc Library for anyone interested in determining the energy efficiency of their homes. The kits include:

- ✓ THERMAL SCANNER
- ✓ RADON DETECTOR
- ✓ THERMOMETER /HYGROMETER
- ✓ WATTMETER
- ✓ AIR QUALITY MONITOR
- ✓ FRIDGE/FREEZER THERMOMETER



Residential property owners in the City of Leduc can **finance up to 100%** of their eligible energy efficiency or renewable energy projects.

Energy Conservation

The City's new electric vehicle (EV) chargers have been providing power for ~8 cars/day since install.

Solar Carport and Electric Vehicle (EV) Chargers

The City of Leduc's Solar Carport became fully operational in 2022 and provides power to the first publicly available electric vehicle (EV) fast-charge location in Leduc. The solar carport has the capacity to generate 26 MWh of clean electricity a year which will reduce greenhouse gas (GHG) emissions by 285 tonnes over 25 years, equivalent to planting approximately 5,000 trees. Two Level 2 chargers and two Level 3 (fast-chargers) have been providing power for about 8 cars/day on average since installation.

Power is being provided free of charge to EV users as a way to promote Leduc's downtown and encourage early adopters to select Leduc as a community of choice to stop in and recharge.

21% of installation costs for the solar carport were funded through the Municipal Climate Change Action Centre in Alberta (MCCAC), and Natural Resources Canada (NRCan) covered 50% of costs for the individual EV Chargers through their Zero Emission Vehicle Infrastructure Program.



City Council celebrates opening of the new Solar Carport.

Waste Diversion Initiatives

% Residential curbside diversion



Year-end: 2011 2018 2019 2020 2021 2022*
 Population: 24,279 32,448 33,032 33,581 34,094 34,094

■ CURBSIDE BLUE BAG RECYCLING ■ CURBSIDE ORGANICS

* Based on most recent 2021 Federal Census



Yard Waste: Transfer Station

Year	2017	2018	2019	2020	2021	2022
TONNES >	533	703	903	1,062	842	769



Curbside ORGANICS*

* INCLUDES CHRISTMAS TREES PICKED UP BY SPECIAL COLLECTION
 * CURBSIDE SERVICE STARTED IN SEPTEMBER 2012



	2017	2018	2019	2020	2021	2022
MATERIAL COLLECTED (TONNES)	2,802	2,564	3,165	3,136	2,933	3,172
PER HOUSEHOLD (KG)	323	291	343	336	268	318

Curbside BLUE BAG RECYCLABLES



	2017	2018	2019	2020	2021	2022
MATERIAL COLLECTED (TONNES)	1,126	1,250	1,211	1,125	1,063	1,185
PER HOUSEHOLD (KG)	130	142	131	119	97	119

Curbside WASTE COLLECTION



	2017	2018	2019	2020	2021	2022
MATERIAL COLLECTED (TONNES)	4,005	3,926	4,088	4,026	4,416	4,285
PER HOUSEHOLD (KG)	462	445	443	427	412	429

Waste Diversion Initiatives

School Waste Diversion Pilot Project

In 2022, seven schools participated in a waste diversion pilot program by sorting their organics into green bins for collection.

- East Elementary School
- Willow Park School
- Caledonia Park School
- Christ The King School
- Linsford Park School
- Leduc Estates School
- West Haven School

Pitch-in Week - April 2022

Nine clean-up events were held:

- West Haven Public School; West Haven Drive
- Ecole Leduc Estates School; Lakeside Estates, Black Gold Drive
- Leduc Wildlife Conservation Society (LWCS); Deer Valley Ravine near Leduc Common
- Communities in Bloom; Walk of Generations and Stone Barn Gardens
- Block50/Jar'd Mercantile/Leduc Wildlife Conservation Society (LWCS); Telford Lake
- Residents of Deer Valley; Deer Valley Drive, Mary Marsh Park
- Action for Healthy Communities; Downtown
- Leduc Track Club; Corinthia Park, John Bole Athletics Park
- Residents of Southfork; Southfork Drive

Waste Diversion Initiatives

Recycle Coach

The City's free waste sorting and collection calendar app – Recycle Coach – gives residents easier ways than ever before to sort smarter. Recycle Coach is a customized app that works on both Android and Apple platforms and offers users:

- sorting information to properly recycle or dispose of items,
- customized collection calendars by address,
- optional collection reminders by phone, text or email,
- a tool to report issues such as missed collections,
- news and alerts about Leduc's waste management programs, events and more, and
- things you need to know about recycling.

Recycle Coach offers a web browser option, which can be accessed at:
www.leduc.ca/waste-recycling/recycle-coach.

You can also scan the QR code with your phone to download the app:

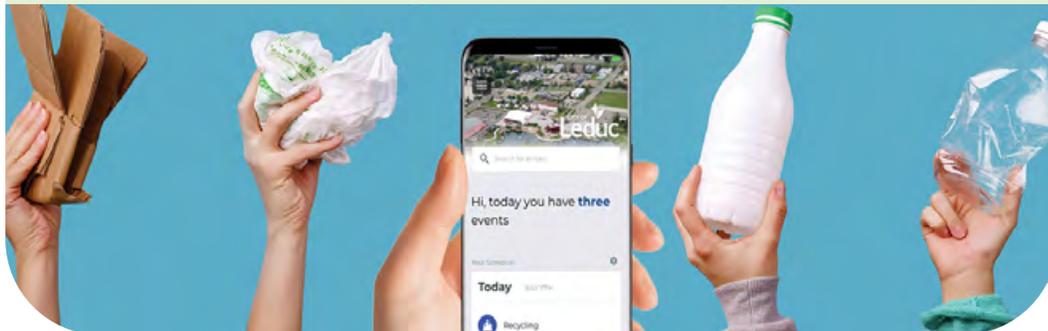


SORT SMARTer

In 2022: 12,391 Users took advantage of the Recycle Coach app; this includes 3,186 mobile users and 8,591 website users. 2022, has shown significantly higher website traffic than in previous years!

5,773 material searches were completed, and the top search items included:

- Glass bottles and jars
- Pizza boxes
- Plastic bottles, jars, and jugs
- Household batteries
- Food items
- Styrofoam packaging inserts
- Clear plastic food containers



Waste Diversion Initiatives

ECO STATION

Recycle Roundup

In 2022, the City held a successful Recycle Roundup (formerly known as the Toxic & E-Waste Roundup). The October 22nd Roundup attracted 390 vehicles, with 82% from the City of Leduc, 13% from Leduc County, 4% from Beaumont, and 1% from Calmar.

Residents dropped off 1,423 kg of paint products, 211 paint aerosols, 265 flammable aerosols (non-paint), and 258 kg of flammable liquids, as well as 58 units/0.96 tonnes of electronic waste.

Styrofoam Pilot Project

In 2021, the Eco Station began a one-year pilot program to recycle white block Styrofoam. A mobile, Styro-Go recycling truck processed the material by heating and pressing the squished Styrofoam into compact plastic bricks that could then be made into other plastic products. The pilot program expanded in 2022 to include the processing of Expanded Polyethylene (EPE) foam.

 **4.57 TONNES OF STYROFOAM**
(148 CUBE BAGS, 377 CUBIC YARDS)

Electronics Pilot Project

The Eco Station participated in an Alberta Recycling Management Authority pilot program in 2021-2022, accepting an expanded list of electronics including small appliances, audio visual equipment, telecom devices, power tools, games, toys, musical instruments, and lawn/garden equipment.

 **37.34 TONNES OF EXPANDED ELECTRONICS**



Tour the Eco Station virtually at leduc.ca/ecostation.

Larger, greener, more services, even more convenient.



	VISITS	BLUE BAG RECYCLABLES TONNES	ELECTRONIC WASTE		HOUSEHOLD HAZARDOUS WASTE*	USED OIL**	TIRES	GLASS (KG)	CLOTHING (KG)
			UNITS	TONNES	LITRES	LITRES			
2017	27,666	133	3,499	63.8	99,354	N/A	N/A	N/A	N/A
2018	30,512	147	3,300	62.7	101,272	N/A	N/A	N/A	N/A
2019	40,592	138	3,715	69.2	112,814	31,745	862	444	N/A
2020	44,767	20	3,893	51.3	99,610	2,910*	37*	1,662	N/A
2021	54,472	122	4,144	55	23,400	3,947	1,650	1,938	N/A
2022	53,373	147.26	4,174	34.65	80,400	29,460	1,055	1,950	4,021

* Paint – 58,800 Litres, Flammable Liquids – 21,600 Litres
Aerosols (Paint) – 6,151 units, Aerosols (Non-Paint) – 7,020 units, Flammable Liquid, Toxic, Corrosive – 23,400 Litres (12,063 Kg), Tanks (Propane, extinguishers, etc.) – 2,01, Batteries – 7,472 Kg
** Glycol – 1,390 Litres, Used oil filters – 15.5 Drums

Leduc Residents	Leduc County	Beaumont	Calmar
40,725 visits	11,506 visits	904 visits	238 visits
(76.3%)	(21.56%)	(1.69%)	(0.45%)

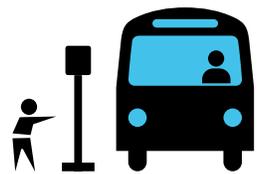
Total Eco Station Visits in 2022: **53,373**

Alternative Transportation

Leduc Transit

Leduc Transit is an inter-municipal transit partnership between the City of Leduc and Leduc County. Leduc residents continue to use and value transit services as a viable option over the use of private vehicles.

	2019	2020	2021	2022
RIDERSHIP*	107,051	50,081	44,941	84,146
BOARDINGS†	113,036	51,878	46,738	85,508



Ridership and boardings were both significantly up in 2022.

* A passenger is counted once - even if they transfer multiple times.
 † A passenger is counted each time they board a bus.

On-Demand Transit

On-demand transit became available in Leduc for the first time in 2021 and expanded in 2022, with scheduled service remaining for routes 1 and 10.

2021	2022
6,794	24,841



Did you know... Seniors were offered free trips to the Eco Station and the Leduc Recreation Centre.

Leduc Assisted Transportation Services (LATS)

LATS is a door-to-door, driver-assisted transportation service for seniors (65+) and for persons with cognitive and/or physical disabilities within the City of Leduc.

ROUTE 10 BOARDINGS:	
2021	2022
13,398	21,155



Did you know... Post-secondary students were offered free u-passes for the September to December term.



E-SCOOTER PILOT PROGRAM

Bird has arrived

2022 marked the first year of a two-year **E-scooter pilot program**. The City saw 18,330 total rides, over 1,000 active users, and noted that the average ride in Leduc was about 20 minutes in length!

When E-scooters provide an alternative to vehicle travel, they can contribute to transportation-related GHG reductions, and help promote a healthy community.



Bird scooters are now in town. Download the Bird app to get started!

FOR MORE INFORMATION:

City of Leduc, Civic Centre, #1 Alexandra Park, Leduc AB T9E 4C4
 Eco-smart Hotline: 780.980.7107 E-mail: ecosmart@Leduc.ca

