

Environmental

2021

PROGRESS REPORT

GROWING A CLEAN, GREEN & HEALTHY LEDUC

PARTNERING with *nature* 

CITY OF
Leduc 



Civic Projects & Regional Initiatives

(ie., Fleet Vehicle Updates, Eco-Friendly Ice Control)

GHG Reduction Actions

(ie., Clean Energy Improvement Program (CEIP))



Natural Area Enhancement

(ie., Pollinator Habitat, Wetland Restoration, Tree Planting)



Waste Diversion Initiatives

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



Energy Conservation

(ie., Solar Carport and Electric Vehicle Chargers, REALice Technology)



Alternative Transportation

(ie., Door-to-Door LATS Transit, On-Demand Transit)

Civic Projects



PUBLIC SERVICES:

In 2020, the City undertook an environmentally friendly pilot project using beet juice as an anti-icing agent instead of the standard sand/salt mixture. In 2021, the program was advanced from a pilot project to a city-wide operational strategy. To meet the volumes of beet juice required to pre-treat arterial roads throughout the City, a 400-barrel double walled steel tank was purchased, bringing storage volumes up from 5,000 to 65,000 litres. This operational strategy will see the City reduce its dependency on salt as an anti-icing agent.

FLEET SERVICES:

The City acquired its first ever electric powered Zamboni for the Leduc Recreation Centre. The Zamboni is the first of its size in Alberta and is expected to improve ice quality while reducing fuel costs and water consumption.

UTILITY SERVICES:

A new Unidirectional Flushing (UDF) Program was designed and implemented, increasing flush efficiency, and reducing water consumption.



2021 Regional Initiatives

Environmental services staff continued to represent Leduc in the **Alberta Capital Airshed, Capital Region Municipal Sustainability Group, Energy Transition Network, and Edmonton Region Waste Advisory Committee.** These organizations foster productive collaboration across the Capital Region and the City's participation ensures alignment with current regional initiatives.

GREENHOUSE GAS GHG Reduction Action Plan

... for a greener, cleaner Leduc.

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.



Emission reduction targets

The plan provides a sophisticated benchmark to evaluate future initiatives as they are identified through the regular budget process. 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).

Understanding Leduc's
current GHG emissions:

LEDUC
emitted about
421,035
tCO₂e of GHGs
in 2015

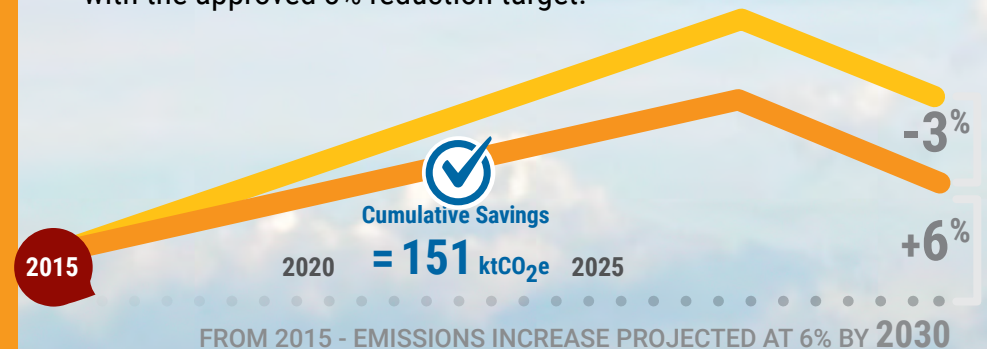
4% City of Leduc (16,400 tCO₂e)

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

Approved actions to reduce GHG emissions taken in 2021

Every year the City strives to meet the goals laid out in the GHG Reduction Action Plan. Of the 26 action items outlined in the City's GHG Reduction Action Plan, currently 33% of these items are complete, 38% are in progress and 31% are still upcoming with planned future start dates. In 2021, the following actions were accomplished:

Energy Sector Actions

- Clean Energy Improvement Program (CEIP) Bylaw was passed
- A solar carport was installed at the downtown Alberta Treasury Branch (ATB) parking lot

Building Actions

- REALice Technology was installed at the Alexandra Arena

Waste Actions

- The Leduc and District Regional Waste Management Facility (LDRWMF) opened a new public drop-off area to provide safer vehicle access and reduce wait times for residents
- A partial bio-cover was installed at the LDRWMF

Transit Actions

- On-demand transit was offered for the first time along routes 2, 3, 4, and 5

Air quality

According to Leduc's air monitoring program, **the City's average annual nitrogen dioxide (NO₂) reading in 2021 was 4.0 parts per billion (ppb)**. This was well below the annual Alberta Ambient Air Quality Monitoring Objective (AAQMO) of 24.0 ppb and slightly lower than the ACA regional monitoring passive average of 5.0 ppb.

The City's annual average sulphur dioxide (SO₂) reading in Leduc was 0.7 ppb. This was well below the annual Alberta Ambient Air Quality Objective (AAAQO) of 8.0 ppb and aligned with the ACA regional monitoring passive network average of 0.7 ppb.



Natural Areas

Program development & implementation



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 4 participants plant their own pollinator gardens last year.

Registrations:

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



Backyard Bees & Hens Pilot Program

As an extension to the backyard gardening, the Backyard Bees & Hens program offers participants a rewarding experience centered around enhancing personal food production and a strengthened connection to nature. The program encourages 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.

The two-year pilot program remains open, and applications are still being accepted.



Tree Planting

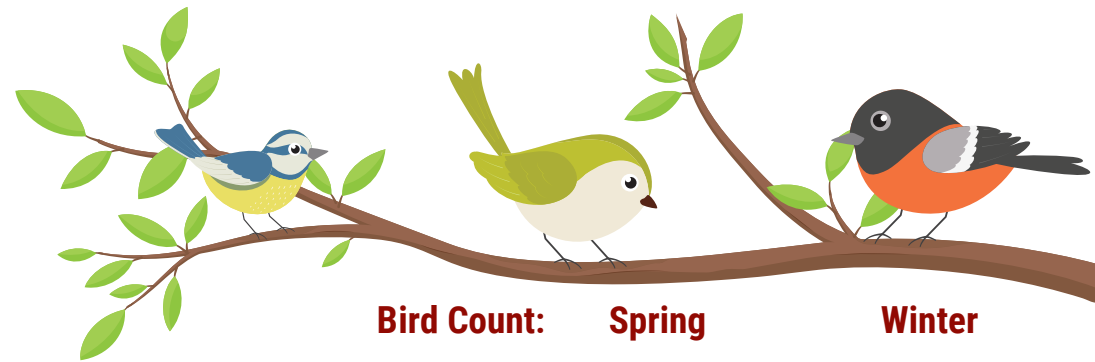
2018: **800** trees planted

2019: **800** trees planted

2020: **57** trees planted

2021: **1,477** trees planted

661 trees were planted during Arbour Day by 46 volunteers. 256 large caliper trees were planted by public services staff, 500 trees were planted by Scouts Canada, and 60 trees were planted by the Leduc Wildlife Conservation Society.



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

Wetland Replacement Program

Wetlands

Wetlands are a vital part of our ecological landscape. Development activities across Alberta have led to the loss, degradation, and fragmentation of critical wetland habitat.

Alberta Environment and Parks' (AEP) Wetland Replacement Program serves to re-establish wetland habitat in partnership with municipalities across the region to help offset this loss.

In 2021, the City of Leduc worked in collaboration with AEP and Associated Environmental Consultants Inc. to restore a second wetland just south of Telford Lake. The project was funded entirely through the Wetland Replacement Program.

Planning, design, and construction were completed by November of 2021 and the site is now home to three small wetland basins that provide a combined 0.37 hectares of marsh, swamp, and shallow open water habitat.



The newly restored wetland area has been seeded with a native seed mix and aquatic plant plugs have been installed. The crew took great care to preserve and re-purpose much of the native vegetation encountered on site – entire trees were excavated and re-planted and others were spread as woody debris creating habitat for pollinators, amphibians, and small birds. Straw has been spread in the wetland buffer zones to help prevent erosion and minimize the spread of invasive plant species and noxious weeds.

In such close proximity to Telford Lake and the surrounding multiway trail, the wetlands will provide opportunities to engage, inspire, and educate visitors on the ecological benefits of wetlands, which include:



storing carbon



protecting water quality



improving biodiversity



stabilizing banks & preventing erosion



preventing droughts & controlling floods

Bioengineering Workshop

In September of 2021, environmental services staff hosted a Bioengineering Workshop with Associated Environmental and K&S Growers at the City's first wetland restoration site just north of Telford Lake.

Participants included City staff, representatives from the Leduc Environmental Advisory Board, and members of the Leduc Wildlife Conservation Society. The workshop provided a safe opportunity to come together and celebrate project completion while affording participants the chance to leave a tangible legacy around the wetland.



The day included a brief introduction to the fundamentals of bioengineering, followed by hands-on training on willow harvesting and installation methods. Participants gained practical experience in the application of bioengineering and an understanding of how bioengineering may be used as an effective alternative to traditional engineering practices while building resiliency into the watershed.

The installed willows will help stabilize slopes, prevent erosion, and limit the growth of noxious weeds and other invasive plant species around the newly restored wetland. These efforts will contribute to enhanced biodiversity, improved water quality, and flood/drought control for years to come.

Waste Diversion

Recycle Coach

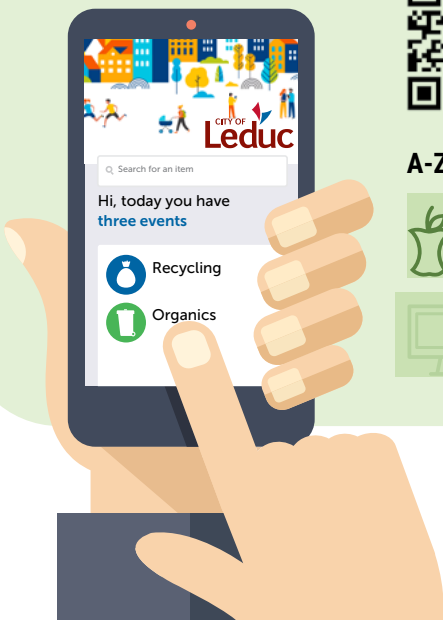
The City's free waste sorting and collection calendar app – Recycle Coach – gives residents easier ways than ever before to sort smarter. Recycle Coach is a customized app that works on both Android and Apple platforms and offers users:

- 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 also offers a web browser option, which can be accessed at leduc.ca/recycle-coach.



A-Z Sort Smart Database online at Leduc.ca



SORT SMARTer



In 2021:

3,600 users took advantage of the Recycle Coach app (this includes both mobile and website users).

14,526 material searches were completed, and top search items included:

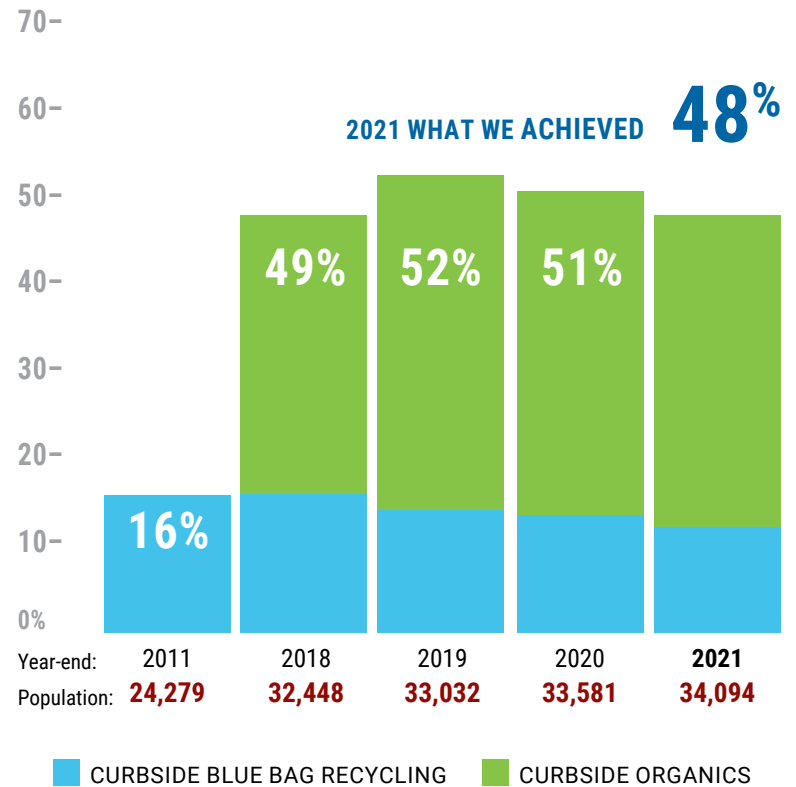
- plastic bottles,
- jars and jugs,
- glass bottles and jars,
- cardboard cartons,
- styrofoam packaging inserts,
- household batteries, and
- plastic grocery bags.



Waste Diversion



% Residential curbside diversion



Curbside ORGANICS*

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



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

Curbside BLUE BAG RECYCLABLES



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

Curbside WASTE COLLECTION



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



Waste Diversion

Multi Unit (MU) and Industrial Commercial Institutional (ICI) Sectors Pilot Project

In 2021, the City undertook a pilot program to explore and better understand the issues and opportunities relating to waste diversion from the Multi Unit (MU) and Industrial Commercial Institutional (ICI) sectors.

The pilot program included two MU participants (Telford Mews Senior Complex and West Haven Greens condos) and two ICI participants (Agri-Food Processing and KBL Environmental).

An audit was conducted at West Haven Greens and KBL Environmental to characterize the waste from these sectors:

- The MU waste audit showed a high potential for diversion, which is expected to be fairly consistent across the sector (77% of the waste stream could be diverted through recycling, compost, and the Eco Station).
- The ICI waste audit was representative of an industrial office/shop and showed that 42.5% of the waste stream could be diverted. A high degree of variability is expected across the ICI sector based on business type; therefore, this audit is not considered representative of the sector as a whole (which, on average, is known to have a higher potential for diversion).



Pitch-in Week - April 2021

Five clean-up events were held:

- Leduc Track Club;
John Bole Athletic Park / Kinsmen Area
- Leduc Wildlife Conservation Society (LWCS);
Deer Valley Ravine / Leduc Common Area
- Residents of Deer Valley;
Deer Valley Subdivision Area
- Residents Leduc Estates;
Fred Johns Park
- Communities in Bloom;
Stone Barn Garden / Pollinator Garden

Organics Diversion

In 2021, six 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

Waste Diversion



In alignment with increased inspections for all landfill member municipalities, GFL green bin inspections for the City of Leduc increased in 2021.

These inspections identify contaminants of concern placed into the organics stream. The goal is to reduce the overall levels of organic contamination in the community through increased education and awareness. Improving the organics stream saves space at the landfill and ensures the availability of clean compost for Leduc residents or commercial sale.

90% OF RESIDENTS
SORTED CORRECTLY

Leduc's goal is to reduce organics contamination rates to 5% or less with enhanced public engagement, curbside inspections, warning stickers on carts, and in some cases the use of enforcement under the Waste Bylaw.



Waste Diversion

Visits in 2021 surpassed those in 2020 with a total of **54,472** visits.

ECO STATION

Larger, greener, more services, even more convenient

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 processes the material by heating and pressing the Styrofoam into compact plastic bricks that can then be made into other plastic products. Between July and December, 684 cubic feet (3,200 lbs) of Styrofoam was diverted from the landfill and compressed into 53 plastic bricks ready for further processing. A pilot program expansion is being considered for 2022 to include the processing of Expanded Polyethylene (EPE) foam.

Electronics Pilot Project

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



29
TONNES OF
STYROFOAM



38
TONNES OF
EXPANDED ELECTRONICS

Leduc Residents
= 41,789 visits
(76.6%)

Leduc County
= 11,762 visits
(21.6%)

Beaumont
= 930 visits
(1.7%)

You can now tour the Eco Station virtually through our website: leduc.ca/ecostation.



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

* LIMITED DATA AVAILABLE IN 2020 DUE TO COVID-19 CARDBOARD N/A

ENERGY CONSERVATION

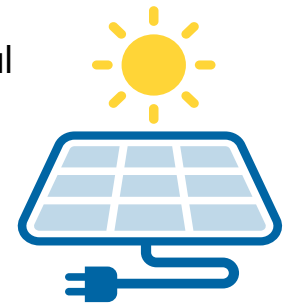
Reducing Our Carbon Footprint










Solar Initiatives

The Solar Project remains a foundational energy conservation program, contributing to GHG emissions reduction, operational fund savings, and enhancing Leduc’s environment.

To continue making meaningful progress towards its GHG Reduction Action Plan, Leduc has expanded its solar initiative in 2021 by adding a 24.3 kW solar carport at the downtown Alberta Treasury Branch (ATB) parking lot (at the corner of 49th Street and 49th Avenue). The City received funding for half the project costs through the Zero Emission Vehicle Infrastructure Program and the carport houses both level 2 and 3 electric vehicle chargers.

To continue making meaningful progress towards its GHG Reduction Action Plan, **Leduc expanded its solar initiative in 2021.**



	 ENERGY GENERATED (MWh)	 EQUATES TO NUMBER OF HOMES POWERED	 OPERATIONAL SAVINGS	 GREENHOUSE GASES (GHG) REDUCED (tonnes CO _{2e})*	 EQUATES TO VEHICLES OFF THE ROAD	 EQUATES TO NUMBER OF TREES PLANTED
 LRC & Operations	2020 1,520 2021 1,400	= 211 = 180	\$139,671 \$180,000	866 1,000	= 188 = 100	= 14,296 = 16,000
 Eco Station	2020 16 2021 20	= 2 = 1	\$1,494 \$2,000	9 13	= 2 = 1	= 150 = 200
 Protective Services	2021 50	= 4	\$7,000	34	= 4	= 550

Improving Our Energy Efficiency



Energy Grants Received

The **Save Energy Grant** (issued by Fortis) provided **\$5,000** towards the creation of Home Energy Kits which can be used to assess the energy efficiency of your home.

The **Alberta Municipal Solar Program** (issued by MCCAC) provided **\$18,225** towards the installation of the Solar Carport in the ATB parking lot.

The **Alexandra Arena REALice Installation Grant** (issued by MCCAC) provided **\$27,855** towards the installation of REALice system at the Alexandra Arena.

Municipal Energy Manager

As part of the Municipal Energy Manager (MEM) Program, the City of Leduc hired a Municipal Energy Project Manager in 2021. Responsibilities include: benchmarking municipal facilities, identifying energy savings opportunities, applying for energy and environment related grants, and implementing greenhouse gas emission reduction projects.

Clean Energy Improvement Program

The Clean Energy Improvement Program (CEIP) Bylaw was passed in 2021, paving the way for program adoption in 2022 – an innovative financing tool for property owners to invest in energy efficient and renewable energy upgrades without an upfront financial investment.

REALice Technology

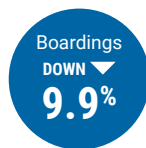
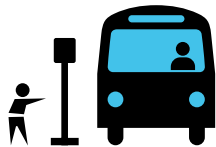
In 2021, REALice Technology was installed at the Alexandra Arena. This update follows the Leduc Recreation Centre's (LRC) REALice device installation in 2020, where the technology has been working successfully for the last year on all three ice surfaces. The technology uses lower water temperatures to flood the ice for resurfacing and has been shown to create a harder, smoother, ice surface that requires less overall maintenance. This installation is expected to lower GHG emissions and create savings in natural gas and electricity.

Public Transit

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.

	2017	2018	2019	2020	2021
RIDERSHIP*	81,654	94,956	107,051	50,081	44,941
BOARDINGS+	90,504	101,723	113,036	51,878	46,738



*A PASSENGER IS COUNTED ONCE EVEN IF THEY TRANSFER MULTIPLE TIMES.

+A PASSENGER IS COUNTED EACH TIME THEY BOARD A BUS.



Did you know... Free transit was provided to all riders from March 20th to June 30th.

On-Demand Transit

On-demand transit became available in Leduc for the first time in 2021. Routes 2, 3, 4, and 5 were changed from fixed routes to on-demand routes in August of 2021 and a marked increase in ridership was noted. Between January and August of 2021, ridership for routes 2, 3, 4, and 5 was 4,321. With the shift to on-demand, ridership for these routes increased between August and December of 2021 to 6,794.

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

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

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. In response to the COVID-19 pandemic, services were reduced by 75% in March of 2020. This level of service was maintained until September when several services were re-added.

ROUTE 10 BOARDINGS:

2019	2020	2021
28,991	9,753	13,398

▲ 37.4% INCREASE in ridership.

Did you know...

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

