

The Corporation of the City of Kawartha Lakes
Agenda
Waste Management Advisory Committee Meeting

2021-003

Monday, April 19, 2021

**Electronic participation begins at 1:00pm. For access to the zoom link contact
bharrison@kawarthalakes.ca**

Public Works and Engineering Boardroom

322 Kent Street West

Lindsay, ON K9V 4T7

Members:

Councillor Ron Ashmore

Councillor Andrew Veale

Councillor Emmett Yeo

C. Appleton

Brian S. Junkin

Accessible formats and communication supports are available upon request. The City of Kawartha Lakes is committed to accessibility for persons with disabilities. Please contact AgendaItems@kawarthalakes.ca if you have an accessible accommodation request.

1.	Call to Order	
2.	Adoption of Agenda	
3.	Disclosures of Pecuniary Interest	
4.	Approval of the Minutes	3 - 6
5.	New Business	
5.1.	Carbon Capture Technology Presentation by Paul Tamlin	7 - 18
5.2.	Improvements to Mattress Recycling Program	19 - 21
5.3.	Construction and Demolition Pilot Program	22 - 25
6.	Round Table	
7.	Adjournment	

The Corporation of the City of Kawartha Lakes
Minutes
Waste Management Advisory Committee Meeting

2021-002
Monday, March 15, 2021
1:00 P.M.
Public Works and Engineering Boardroom
322 Kent Street West
Lindsay, ON K9V 4T7

Members:
Councillor Ron Ashmore
Councillor Andrew Veale
Councillor Emmett Yeo
C. Appleton
Brian S. Junkin

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1. Call to Order

Chris Appleton called the meeting to order at 1:02pm with the following people in attendance: Councillor Ashmore, Councillor Veale, Councillor Yeo, Chris Appleton, Brian Junkin, David Kerr, Kerri Snoddy, Bryan Robinson, and Brianne Harrison.

2. Adoption of Agenda

Moved By Councillor Ashmore

Councillor Ashmore moved to amend the agenda to discuss recycling carts. There was no seconder to this motion. No vote occurred.

Moved By Councillor Veale

Seconded By Councillor Yeo

That the agenda be adopted as circulated.

Carried

3. Disclosures of Pecuniary Interest

There were no declarations of pecuniary interest disclosed.

4. Approval of the Minutes

C. Appleton asked for an update regarding the calendars mail out. The Canada Post quote was \$50,000 to distribute and Council denied including this in the budget. Communications to source additional spots for calendar pick up. A one page insert will be included in the tax bill re: the calendar and where it can be obtained. B. Robinson reminded the committee that this isn't a "Waste Calendar" and is a "Municipal Calendar" which is created by the Corporate Communications Division.

B. Junkin asked for more information re: SSO feasibility. K. Snoddy discussed options that staff are reviewing including drop off or curb side pick up. A plan will be brought to this committee before going to Council.

R. Ashmore asked re: partnership with Peterborough re: proposed Havelock incineration facility. B. Robinson answered that CKL remains part of the discussions as of today but that the group is not lead by technical experts.

Moved By Brian S. Junkin

Seconded By Councillor Veale

That the minutes of the Waste Management Advisory Committee meeting held on February 1, 2021, be adopted as circulated.

Carried

5. New Business

5.1 Bulky Plastic Recycling Program

K. Snoddy spoke to the pilot program. We've had this available on environment round up days in past, very popular among residents. Includes items like recycling bins, toys, hampers, lawn chairs etc. 2022 (budget \$50,000) and 2023 (\$20,000). Would save approximately \$163,000 in saved landfill space per year.

B Junkin asked about volume collected on round up days. K. Snoddy estimated that a 40 yard bin is filled per round up day.

B.Junkin asked about processing and transport fees. K. Snoddy answered that we have the processing cost and an estimate on transport but staff will need to do RFQ for transport.

B. Junkin asked about roll off bins and whether or not they could be leased? K. Snoddy replied that it was looked into and it is more cost effective to purchase. It will be placed at the sawtooth. D Kerr added that there will also be additional use for the bins.

R. Ashmore asked about stretchy plastic. K. Snoddy informed that these are included in blue box program.

E. Yeo asked whether or not we will still have round up days. K. Snoddy responded yes, that she is working with Covid team, and that they are thinking this will happen in the fall.

B. Junkin asked how do we plan on educating the public. K. Snoddy responded that it will go through corporate communications group. We would advertise similar to other programs, road signs, community guide, website, newspaper, app, etc., and that it could be included in the 2022 calendar. C. Appleton suggested that it be added to the one page insert in the calendar.

C. Appleton stated that a similar plan was considered at PRC and supported.

Moved By Councillor Yeo

Seconded By Councillor Veale

That the Waste Management Advisory Committee supports the two-year bulky plastic recycling pilot program at the Lindsay Ops Landfill.

Carried

6. Round Table

E. Yeo asked about boat and bale wrap. K. Snoddy informed that recycling processors are no longer accepting this and it is now considered waste. D Kerr informed that it is

currently being landfilled but that we've asked generators to take the plastic back. There isn't a good resale value on plastics.

C. Appleton asked to check with other municipalities. D. Kerr responded yes, that staff will look into options for recycling boat and bale wrap and bring them back to the Committee.

R. Ashmore asked if the issue with bale wrap is that it has to be cleaned. K. Snoddy responded, yes, that market is even tougher than boat wrap, loads are being refused.

R. Ashmore asked when will we start accepting cash again at the landfills. B. Robinson informed that there is an SOP in place and being reviewed with H&S, the second lockdown delayed this. The staff prefers cashless transactions and dates will be announced when known.

B. Junkin spoke to learning that recycling plastics was initiated by plastic industry in the 1970's so that they could sell more. A very small amount is actually recycled, less than 20%. Asked if staff could determine what percentage of our recyclables that are sent to be recycled actually get recycled? K. Snoddy informed that those stats include commercial data and that 12% of the material we collect is contamination and goes to landfill. The rest is sold to North American markets to be recycled.

C Appleton announced that there is a new member of PRC named David Webb.

D. Kerr spoke to the textile program. They reviewed proposals and selected Talize/Recycling Rewards as the contractor. Details are to be ironed out re: home collection, location of storage at landfills and items that will and won't be included.

Next meeting will be Monday April 19th at 1:00pm.

7. Adjournment

Moved By Councillor Veale

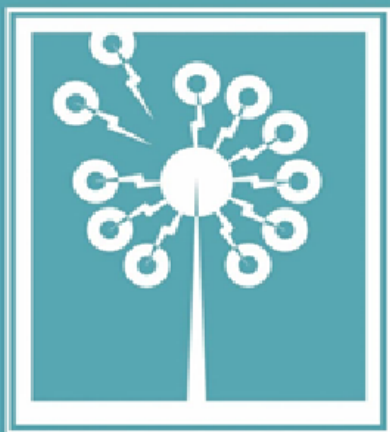
Seconded By Councillor Yeo

That the Waste Management Advisory Committee meeting adjourn at 1:53 p.m.

Carried



UR One Inc.



UR One Inc.

TRUE CARBON CAPTURE TECHNOLOGY

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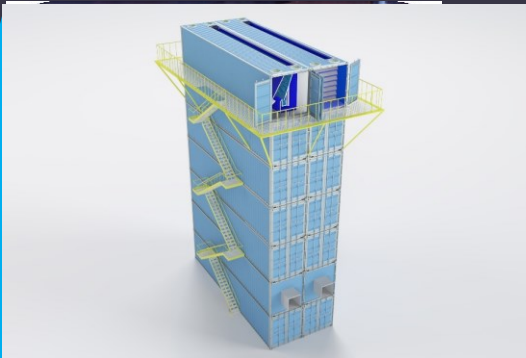
- Bottom Line Up Front(BLUF)
- Economic
- Efficiency through simplicity
- Working Systems
- Action Plan
- Organization where we stand !
- People Team Canada
- Manufacturing
- Contact
- Questions

Hi my name is Gerard Campeau, VP Technical Sales



Bottom Line Up Front (BLUF)

- >93 % Dissociation of Carbon from CO, CO₂, O₂ released to atmosphere
- Treats ALL OXIDES the same CO₂, CO, NO_x, NO, SO₂, Particulate >99.5% 5microns or less removed
- 1/10th the cost of Chemical absorbent technologies
- NO thermal energy requirements
- NO underground sequestering
- NO pipelines
- NO heat exchangers
- NO compressors



Result: 1/30th the amount of power required!



Just the right solution, at just the right time.

- \$45 Million over 20 years in R & D
- Air is purified with our process
- Straight forward treatment with no add on single process treats all oxides
- Lowest cost carbon extraction, production increases markets for new carbon product, cost reduction leads to increase development/adoption to a potential \$500 Billion over the next 20 years
- Biofuels, electric cars, pharma, construction material, commercial airlines, flying vehicles will adopt carbon graphite light weight strength, just as the aerospace industry has presently.
- Expanding markets for recovered carbon materials! Reducing and replacing needs for Aluminium, Steel, Copper?

Economics



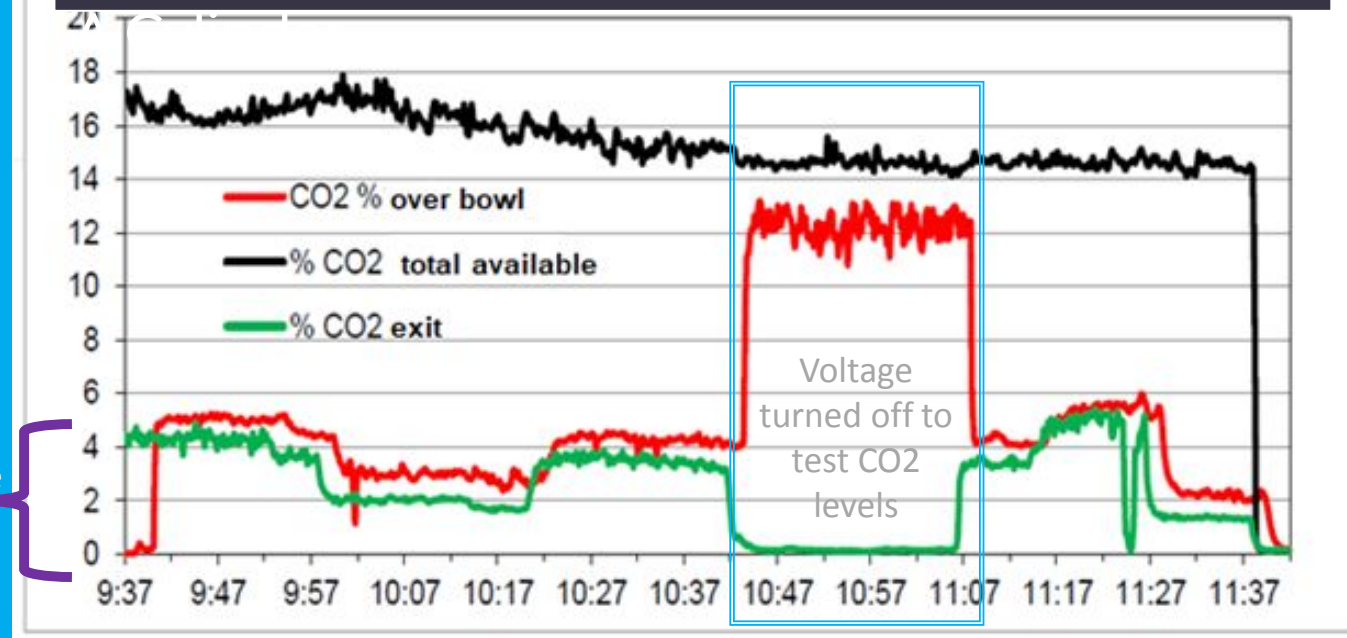
Efficient Through Simplicity ?

- >93% efficiency of the installation increases with the reduction of the size of particles of captured aerosols.
- 5 microns and lower, the efficiency of cleaning is close to 100% for Particulate.
- The installation is almost insensitive to the nature of the polluting particles; they can be any chemical composition and have any electrochemical indicators.
- Track record with 20+ years of
- Working with technology
- Continuous R & D

Pure CO₂ Test Using Plaron® Technology

Adjusting
System voltage
for optimum
performance

Efficiency Test – Cleaning Pure CO₂ Gas From



- Black line** - CO₂ content at the entrance to the system (from cylinder, not mixed with air)
- Red line** - CO₂ content above the reaction zone, mixed with the surrounding air.
- Blue Box** - Voltage disconnected between 10:42 - 11:07 to validate system effectiveness and sensor readings.
- Green line** - CO₂ content at the exit of the system (in the exhaust pipe below the reaction zone), after mixing with the surrounding air.



Working Systems!

11 technical & Engineering staff. Test & research lab overseas.

UR One U18 &19



Skimmer/Material Retriever



Carbon Fullerenes



Dirt, Dust Particulate for Analysis!



People, Testing Results



Action Plan

UR One Inc. needs to **build up and scale quickly**.

- **Government / Industry Partnership**
 - We can a create new CO2 industry.
- Need **Funding** – Carbon Capture is a world issue!

Build Up:

- Scaling quickly requires consultants and contractors
 - **Plan on hiring a management company both government and private industrial teams.**
- **Planning on contracting with Cameron Steel and Progress Energy in Western Canada to build scale manufacturing with ISO manufacturing and process control capability.**

GOALS: **BE NET-ZERO CARBON BY 2041**

- Install at all 241 U.S. & Canada coal plants and 1793 natural gas plants in 12 years. Full operation at all plants in 20 yrs.
- Install in Industry high pollution contributors, such as Cement plants, Steel, Aluminium, and Refineries.
- License smaller application in Marine, Transportation, and Commercial Buildings

Carbon
Offset

27%

22%

40%

SUSTAINABLE DEVELOPMENT GOALS



Organization, Where We Stand!

11 technical & Engineering staff. Test & research lab overseas.

1 patent granted 2 patent pending. 3 more in writing

US subsidiary with 10 staff technical. Large engineer consultant with 1300 persons in place.

Continue testing of technology for radioactive Isotope separation from water to solve Fukushima waste water issue. Begin working with Nuclear agencies to clean nuclear contamination.

Commercial systems for building

Transportation unit in design phase for heavy trucks

Purification of hospitals system for virus and bacteria, mold, pollen, etc.....

People & IP & Future!



Team Canada



Mark Fertman CTO



Alexandr Borissenko President



Sales & Marketing Gerard Campeau



Manufacturing & Technical Adviser Paul Tamlin



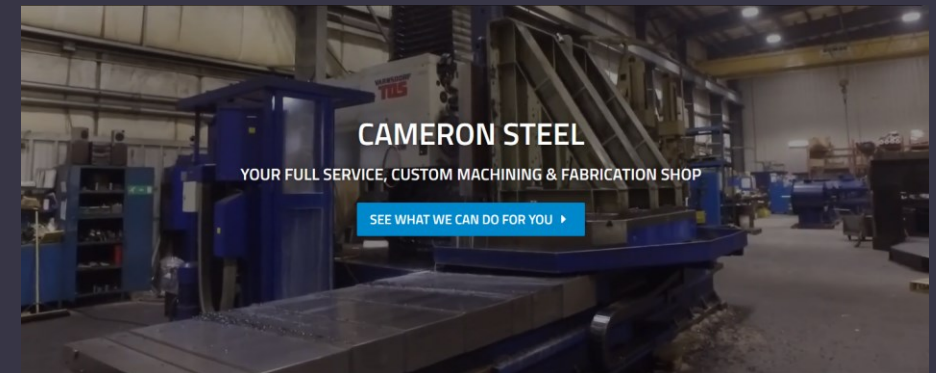
Chief Electronics Designer Kerry Smith



Systems Integration Specialist Kirill Lukyanov

Manufacturing

- Contracted to set up system in Canada
- Cameron Steel, Lindsay, Ontario.
- Will manufacture systems once commercialized in Canada.
- ISO 9000:2015 certified
- UR ONE unit being built August, 2021 set-up at Cameron steel for sales & demonstration
- Establish first customer orders accumulate more data through testing customer material
- Start work on high value carbon sales to generate first company revenue stream.
- Follow-up with equipment sales with understanding we control carbon collected or share in carbon sales. Client can accumulate carbon credits & reduce carbon tax liability.



UR One Inc.



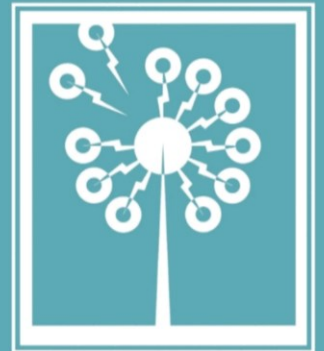
PLARON
TECHNOLOGY

Gerard Campeau VP Tech. Sales

UR One Inc.

info@URone-inc.com

1-905-252-8574



PLARON
TECHNOLOGY



The GOLD Standard in Carbon Capture Technology!

Questions?

Memo

A message from Kerri Snoddy, Regulatory Compliance Officer

Date: March 22, 2021

To: Waste Management Committees

From: Kerri Snoddy, Regulatory Compliance Officer

Re: Improvements to the Mattress Recycling Program

The mattress recycling program has been one of the City's most successful diversion programs. From the beginning of the program in August of 2018 to December 31, 2020 approximately 10,000 mattresses totalling 265 tonnes were recycled. This equates to a landfill space savings of approximately \$683,000. Mattresses continue to be recycled in 2021 and in the foreseeable future.

As part of the program residents have the option of bringing their mattresses and box springs to the Lindsay Ops landfill or purchasing a curbside mattress tag for pick up at their home by Miller Waste to be recycled.

While the program has been very successful the City currently cannot recycle mattresses brought to the other four landfill sites in the City including the Laxton, Eldon, Somerville, and Fenelon landfills. Mattresses brought to these sites continue to be landfilled.

One of the initiatives in the updated Integrated Waste Management Strategy is to expand the mattress recycling program.

The Key Performance Indicators (KPIs) for this initiative are as follows:

1. Increase number of mattresses collected in 2020 by 5% or approximately 225 units.
2. Work with communications staff as well as the collection contractors to optimize the recycling program in 2020 by implementing a service for residents to purchase mattress tags online.
3. Annually review the feasibility of collecting mattresses for recycling at additional landfill sites.

The first two KPIs have been achieved. In 2020 we successfully increased the number of mattresses collected by 9.5% or 420 units from 2019. On March 1, 2021 the City

launched an online tag purchasing service for mattress, Freon, and large item tags. Residents can now purchase a virtual tag online and set up a mattress collection with Miller Waste without ever having to leave their home to purchase a physical mattress tag. The service has been successful and popular with no operational issues. The third KPI, to review the feasibility of collecting mattresses for recycling at our other landfill sites is what this memo will address.

Due to limited space at the Laxton, Eldon, Somerville, and Fenelon landfills it is not feasible to place a bin or trailer for collection of mattresses. Therefore, all mattresses brought to these landfills are disposed of as waste. This equates to approximately 2500 mattresses which are landfilled each year.

Staff are recommending to no longer accept mattresses at the Laxton, Eldon, Somerville, and Fenelon landfills in order to capture these mattresses at the Lindsay Ops landfill or curbside for recycling. This would increase the landfill space savings by \$170,750 per year.

In order to prevent any inconvenience to residents, staff will ensure a wide spread education and outreach approach in Q4 of 2021. This will ensure that residents know the change is coming ahead of time and prevent attempts to drop off mattresses for disposal at the other four landfill sites.

The new online tag order system has made mattress recycling very convenient for residents anywhere in the City. They can order a mattress pick up directly to their home without having to drive to a landfill to drop it off. The drop off option at the Lindsay Ops landfill will still also be in place.

Expanding the mattress recycling program in this way will increase waste diversion, save the City money, and ensure our landfills are more sustainable and stay open longer.

Recycling all mattresses in the City will result in an increase to the Waste Management Operating Budget. In 2022 staff will require a budget of \$145,000 to successfully recycle all mattresses. This is an increase of \$68,500 to the current annual budget for the mattress recycling program. However, the cost savings through deferring the closure of the landfill by saving space realized by recycling these mattresses is estimated to be \$481,515 per year and more than pays for the program costs.



Mattresses also do not compact in landfills and the springs get caught up in the landfill equipment which increases maintenance costs. The City will avoid these costs by recycling all mattresses. Below is a table reflecting the annual costs and savings of recycling all mattresses in Kawartha Lakes.

Annual Costs	Annual Landfill Space Savings	Total Annual Net Savings
\$145,000	\$481,515	\$336,515

Draft Committee Resolution:

That the Waste Management Advisory Committee supports recycling all mattresses in the City of Kawartha Lakes and no longer accepting mattresses at the Laxton, Eldon, Somerville, and Fenelon landfills.

Memo

A message from Nikki Payne, Waste Technician II

Date: March 22, 2021

To: Waste Management Committees

From: Nikki Payne, Waste Technician II

Re: **Construction and Demolition Recycling Pilot Program**

As part of the Integrated Waste Management Strategy Council approved a Construction and Demolition (C&D) recycling pilot program on September 12, 2017. This initiative is to support recycling and diversion from landfilling so that our landfills can be open to the public for as long as possible.

Prior to implementing the pilot program, the City retained Reclay Steward Edge (Reclay) to assess the feasibility of a C&D waste recycling program. As part of the background research Reclay noted that the quantity of C&D waste generated far exceeded the amount of municipal solid waste generated. For our municipality, approximately 40% (or 16,000 tonnes) of the waste going to landfills is C&D. Therefore, diversion of this waste stream from our landfill could almost double our remaining site life. As well, C&D materials are bulky and challenging to compact, taking up needless volume that could be otherwise used for residential wastes. Furthermore, many materials generated through C&D activities have value and can be recycled for other products or even used as an aggregate substitute.

As per the Reclay Study, the primary recommendation was for the City to implement a pilot C&D recycling program at both the Fenelon and Lindsay Ops landfill sites. It should be noted that through Reclay's research there was insufficient volume of C&D waste received at the other landfills (i.e. Somerville, Eldon and Laxton landfills) to justify a business case for C&D recycling at those sites.

The driving factor for moving this recycling program forward was the savings related to increasing landfill space, which was valued at the industry standard of \$150/tonne (Reclay). Reclay had estimated a C&D program could remove 10% of the C&D waste fraction going to landfill. In other words, the projected space saved by having a C&D recycling program would result in an increase in landfill life of 0.04 years for each year Fenelon operates and 0.17 years for each year Lindsay Ops operates.

In January of 2018 a competitive request for proposal (RFP) process was undertaken to secure a third-party contractor to transport and off site process the C&D material from Lindsay Ops and Fenelon landfills. Unfortunately, the City received no submissions for the RFP. The likely reason was that in the market at the time, quantities and commodity pricing for the C&D materials was not high enough to justify transportation costs for end use processing.

Based on this response, Staff researched other municipality's programs to see if there were other alternatives to reduce C&D waste going to landfill. As a result of the research there were some viable alternatives that could be explored and we implemented the following actions:

- In 2018 we started separating and chipping wood waste at the Lindsay Ops Landfill for cover material and road base at the landfill. This did not divert material from landfill but reduced the volume that the materials took up in the landfill. In the case of road base C&D waste was able to substitute for aggregates that might have otherwise been purchased.
- In 2019 we contracted Durham Disposal to transport and process offsite clean wood waste from the Lindsay Ops landfill. This program ran successfully for 6 months, diverting 46 tonnes of material from landfill.
- In 2019, we contracted New West Gypsum for drywall recycling, and Miller Waste for transportation of the materials to New West Gypsum. This program ran successfully at both the Lindsay Ops and Fenelon landfills, diverting approximately 3 tonnes from Fenelon and 31 tonnes from Lindsay Ops.

In December of 2019, a competitive request for quote (RFQ) process was undertaken for a year-long clean wood waste recycling program to be implemented in 2020. Unfortunately, no bids were received for this work. Staff reached out to the previous contractor that processed our clean wood waste (Durham Disposal) to inquire on why they didn't submit a bid. As a result of the discussions an alternative arrangement was negotiated and Durham Disposal agreed to transport and process mixed construction and demolition material (including clean wood waste, drywall, shingles, rubble, etc.) from the Lindsay Ops landfill for \$150 per tonne.

Due to the pandemic state and many of the programs being closed to the public, this program was delayed in the first half of 2020 but successfully ran from June 1, 2020 to

December 31, 2020. During this time, a total of 267 tonnes of material were diverted from landfill.

The City was able to extend the agreement with Durham Disposal for the year of 2021, the final year of the pilot program. With the current approved budget, there is the potential to divert almost 1000 tonnes of C&D material from the Lindsay Ops landfill.

Landfill staff have been working with local contractors to divert as much material as possible. From the beginning of the year to the end of March 2021, approximately 200 tonnes of material have been diverted from the Lindsay Ops landfill. We anticipate that this program will be even more successful in the summer months and are on track to meet our goal of 1000 tonnes of C&D diversion by December 31, 2021.

If we meet our goal of 1000 tonnes of diverted C&D material in 2021, we will have saved approximately 3000 cubic metres in landfill space in one year. This can be compared to 3000 cubic metres of residential waste, which we estimate when compacted in a landfill is approximately 2100 tonnes. When you factor in the estimated savings in landfill of \$150 per tonne, this is savings of \$315,000 (2100 tonnes x \$150) in landfill space every year. Therefore, the \$155,000 annual expense for transportation and processing of C&D waste justifies a savings to the City of \$160,000 (revenue-expense) every year.

This program holds great opportunities for us to extend the life of our landfills. Although this program has only been successful at the Lindsay Ops landfill, we will continue to review and implement ways to divert additional C&D from the four other landfills.

The following is a table representing the amount of materials that have been diverted from landfill since the pilot program started:

Year	Material	Tonnages Diverted from Landfill
2018	Clean Wood Waste	0 (volume of the material was decreased - chipped)
2019	Clean Wood Waste	46
	Drywall	34
2020	Mixed Construction/Demolition Materials	267
2021	Mixed Construction/Demolition Materials	200 (end of March 2021)

As there is sufficient data to support a long term C&D program from the pilot study we are recommending that a permanent C&D program be implemented and will be going to council in June of 2021 to make this recommendation. We hope the waste management committees support this initiative and recommend the following resolution:

Draft Resolution

That the Waste Management Advisory Committee supports a permanent Construction and Demolition recycling program at the Lindsay Ops landfill, with consideration of an annual operating budget of \$155,000 for 2022.