

ALTERNATIVE SERVICING AND WASTE MINIMIZATION – AN OVERVIEW

The Issue

Cities across the world are facing the same issue – China and other Asian countries are no longer accepting many items that were previously sent there for recycling. In addition, the material they are accepting must include less contamination from waste and non-recyclables. To address this new reality, cities, including St. Albert, are revising their recycling programs by restricting what they accept for recycling. However, this policy change creates an opportunity for cities to pursue next steps that make sense for their residents and communities and exercise leadership on a broader scale.

The Myth

We recently learned some news that is difficult for avid recyclers to comprehend. Not all the recyclable materials we have been sending to Asian markets for recycling have, in fact, been recycled.

For years, cities and residents have put a great deal of effort into promoting and participating in recycling programs. We have dutifully washed out our containers, freeing them of contaminants so they could be recycled. We used fossil fuels to pick up the recyclables from the curb, or the recycling depot, and transport them to market. It was all worth it, we felt, because we had diverted so much material from our landfills.

Unfortunately, only a portion of the material that is collected at the curb is able to be recycled. Some material in the Blue Bag is not dutifully washed, making it unsuitable for recycling. Worse, it also contaminates some of the paper products, making those unrecyclable. Often, plastic film, paper towels, tissues, Styrofoam and other non-recyclable materials have been added to Blue Bags by well-meaning residents. These materials are not recyclable and are either buried in a landfill or burned in an incinerator. We did not solve our local landfill problem, we shifted it to another part of the world.

Ultimately, Asian markets decided they could no longer continue to serve as the world's destination for unwanted material. This decision has forced cities to come up with alternative plans to deal with the tremendous amount of recyclable material we previously sent overseas. Cities must now take on the full responsibility for managing their own waste.

If we don't come up with an appropriate solution, we will see increasing amounts of waste ending up in our parks, rivers, oceans and shores.

The Opportunity

We in St. Albert have a deep appreciation for the environment and are committed to protecting it. Environmental stewardship is an important part of Council's Strategic Plan and the Corporate Business Plan. We are on track to meet 15 of our 21 targets in the Environmental Master Plan.

For a generation, society has embraced the three Rs: reduce, reuse and recycle. We have encouraged residents to reduce their waste, reuse items if possible, and recycle whatever they could. Cities promoted this approach to varying degrees, and with varying levels of success.

Residents of The Botanical Arts City enthusiastically embraced this challenge, diving into recycling, composting and sustainability. The City also did its part. We collected the blue bags from residents, sorted everything at the Material Recovery Facility (MRF), removed non-marketable materials, garbage and contaminated items. The rest we sent to be recycled.

Over the years, we have operated a very successful recycling program, diverting 64 per cent of our residential waste in 2017. Our garbage per capita was 123 kg per person, per year. The City of St. Albert has been a leader in this area. However, we have reached a plateau and have not able to dramatically increase our diversion rate. And now we face the grim fact that some material we thought we had been sending away for recycling was likely not in fact recycled.

As we face the consequences of global warming, depletion of fossil fuels, pressure on landfills, restrictions on recycling, and urban sprawl, we need to take stock of where we are at and where we are heading. Cities like St. Albert face the imperative to think and act in new ways, adopt innovative approaches and capitalize on emerging technologies.

The traditional approach for cities has been to divert recyclables from the waste stream as much as possible and bury the rest in a landfill. As land becomes more precious, and the environment more fragile, we must be more conscious than ever of the choices we make. Part of this responsibility is to reduce our dependence on landfills.

Technology provides us with many alternative approaches to how we address waste, generate energy and minimize pollution. These approaches, if chosen wisely, can support economic development, tap into renewable resources and protect the environment. We can make a bold choice to undertake a sustainable, responsible and scalable solution that addresses many of our challenges and supports many of our goals: we can add a fourth R and recover more of our waste, take an integrated green utilities approach and explore waste to energy systems. If we take this path, we can balance three separate outcomes we want to achieve: economic viability, environmental protection and social responsibility.

The Plan

The City's new approach will be based a concept known as the Waste Minimization Triangle. It will involve implementation of alternative servicing and the addition of recovery to complement the traditional 3Rs of reduce, reuse, recycle. Ideally, we reduce the amount of waste left over with each successive R. The 4Rs represent 100 per cent of the waste stream for our community. Currently, we are diverting 65 per cent of our waste from the local landfill, leaving 35 per cent to be buried. The changes to global recycling markets mean it will be extremely difficult to maintain, let alone improve upon, our 65 per cent diversion rate.

Our community values involve three elements: social, economic and environment. It is possible to reach high levels of achievement in one area at the expense of the other two. This is not a responsible approach. We must consider all three values together, as integrated elements, if we are to achieve a viable way forward. It is our objective to achieve a balance among these three values, so that any waste minimization solution we adopt is successful, sensible and sustainable. Let's explore each of the four Rs to illustrate how we can achieve this essential balance.

- **Reduce** – This is the R over which we have the least control. It involves packaging at the source, which is unlikely to decline without regulation by other levels of government and consumer support. We could have some influence, with initiatives such as implementation of green procurement policies, but these involve higher purchasing costs. This fall, we will once again look at a potential ban on single-use bags, which would have some impact on reducing our waste.

- **Reuse** – For this R, we depend on residents, businesses and City staff to reuse items wherever possible. We can do this on our own, or with the support of charitable organizations, re-use agencies and thrift shops. Ideally, the item is reused again and again, so its trip to the landfill is delayed significantly or avoided altogether.
- **Recycle** – The most famous R over the past few decades, this has been the focus of our efforts to date to reduce waste in our community. Our markets for recyclables is shrinking, putting more pressure on achieving success with this R. Improved sorting can improve results here, which can in turn lead to the production of more new things such as plastic lumber and plastic furniture. The 4th R, recover, can actually increase recycling, by capturing recyclables not currently recycled by residents.
- **Recover** – the new R in the group, this is where we can make the most significant gains in minimizing our waste, if we take an integrated utilities approach.

By using a process called **gasification**, we would transform waste, in all its forms, into locally sourced energy to power nearby homes and businesses. We would produce high-quality compost we could offer for sale. We would produce ash that could be used as an additive to non-structural concrete.

Generating power, heat, compost and ash would in turn generate non-traditional revenue for the City from local and possibly regional sources. We would also generate very little pollution through this process, serving to protect the environment. What else would remain at the end of the process? Glass and metal, which would be free of the various contaminants clinging to them at the start of the process. All of this is possible if we take an alternative approach to managing our waste.

St. Albert currently faces a significant funding shortfall for our growth capital projects. We also face funding pressure to properly repair, maintain and replace our existing infrastructure. If we don't identify and implement new sources of revenue, such as the potential offered by waste to energy processes, we will face more difficult choices, including tax rate increases and service level reductions.

The Concept

The City of St. Albert successfully completed a feasibility study and is now in the concept development stage. We will be using this web page to share our progress. We will use the City's Twitter and Facebook channels to let you know when we have added new content to the page.

We will conduct our research, do our due diligence and come up with the best possible solution. We are also sharing our plans with others in the region and beyond. We are building a network of potential partners in the public, private and not-for-profit sector. We are at the earliest stages of this work but are excited at its potential. We are confident it will make good business sense, be environmentally friendly, support our community and demonstrate St. Albert's leadership in an emerging sector.

In addition to being The Botanical Arts City, we are also leading the way as a smart city. Global events, new technology and fiscal realities have merged to clearly show us the way forward. It is not only the right thing to do and the environmentally responsible thing to do; it is the smart thing to do.