



Zero Waste Plan

June 2018



Advancing the
***Future*Oxford**
Community Sustainability Plan

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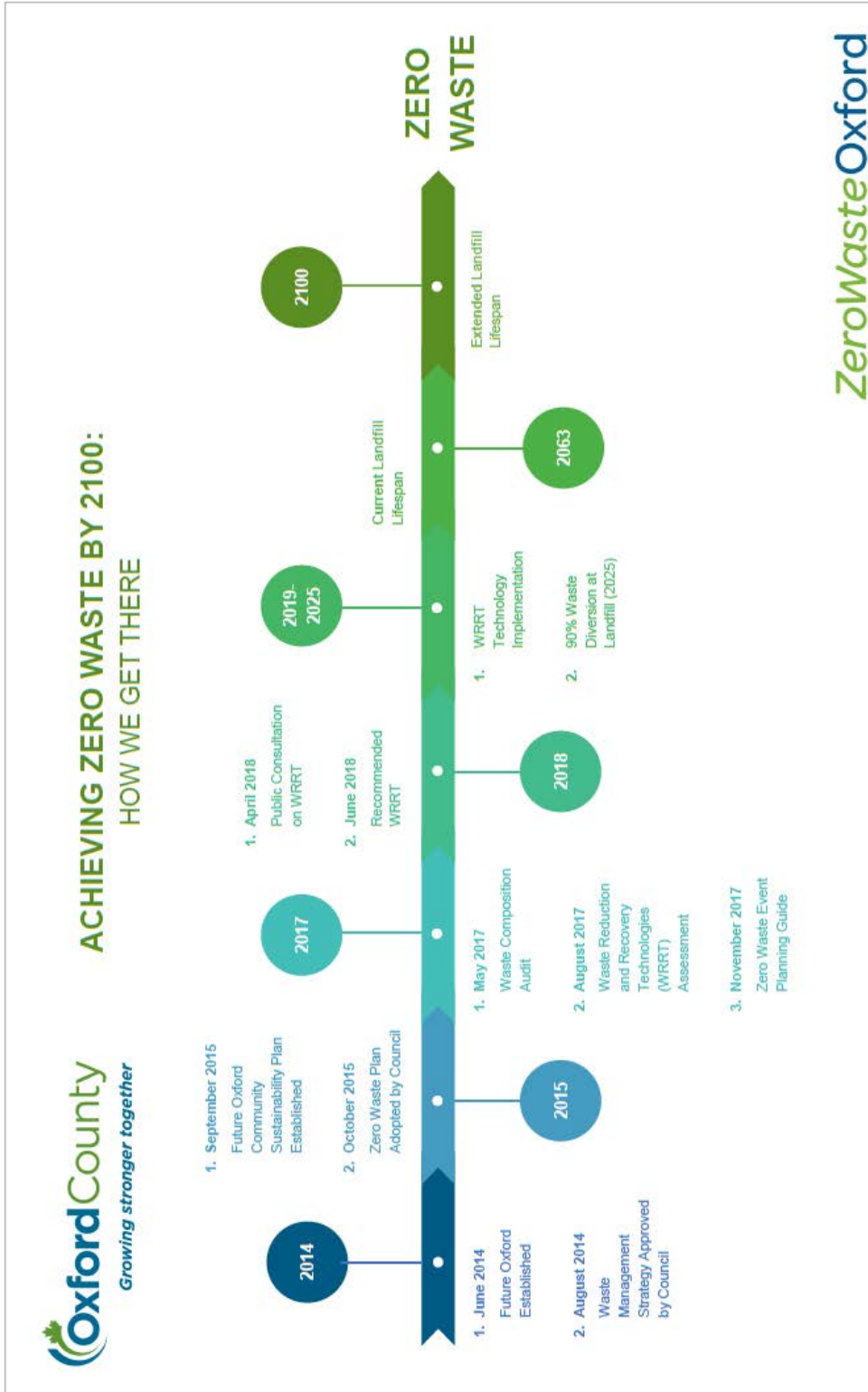
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Preface

On September 28, 2016 Oxford County Council received its first draft Zero Waste Plan in support of its commitment to achieving Zero Waste in Oxford County. Working with the Zero Waste Oxford Action Committee, as part of the Future Oxford Partnership, much has been done to understand Oxford's waste composition and our opportunities to reduce waste and recover resources.

Our Zero Waste Plan continues to be developed as both a policy and reporting document modeled from the [100 RE Building Blocks](#) plan structure. Like the Kassel Criteria before it, the 100 RE Building Blocks process is fully applicable to the development of any long term strategic initiative and when properly utilized can provide guidance for policy makers, governments and community champions to develop their own initiative roadmap. The goal is to create a living document that can serve as an interactive tool box for stakeholder implementation and monitoring.

Zero Waste Timeline



Chapter 1

Activate Local Resource Potential

Perform Preliminary Assessments

Mobilize Local Resources

Identify Programs for Support and Assistance

Overview

Chapter 1 considers the current status of waste generation and diversion levels in the County. An accounting of waste generation baseline by source (residential, industrial, commercial, institutional and agricultural) is tracked against the ultimate goal of zero waste. Periodic updates are recorded to ensure progress is made and alterations to the plan implemented as required.

The intent of this section is to provide the user with a snapshot of the status toward our goals across a variety of sectors. The approach will enable a regular monitoring of progress.

Key points

- Chapter 1 serves as an ongoing gauge of success, a barometer of current status toward a circular economy where all resource inputs can be recycled or recovered for further use in some form.
- The Zero Waste Plan is designed to complement the [County of Oxford Waste Management Strategy 2014](#) by providing a means of public education, stakeholder engagement and the creation of a Zero Waste culture in Oxford County.
- Results will be monitored quantitatively through database application.
- Technology will continue to develop rapidly to support product creation through resource recovery.
- Oxford's Sustainability Cluster will play a significant role in the testing and implementation of modular and scalable technology solutions.
- Research, testing and implementation of technology solutions will be essential to keeping pace with the need to accelerate waste reduction and resource recovery achievement.

Background

Activate Local Resource Potential (Chapter 1) monitors Oxford's progress of the redirection of all waste resources away from disposal and the transformation of end-of-life materials to that of other resource materials, and collects information on the types of waste reduction and resource recovery technologies in service or in trial.

The Zero Waste International Alliance defines Zero Waste as:

“... a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use.

Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them.

Implementing Zero Waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health.”

Given that our goal is Zero Waste, this section establishes a means of identifying baselines, milestone dates and accomplishments towards this goal by separating existing and forecast waste production and disposal by source, by use, and by sector.

This section of the plan will include a series of pie charts illustrating baseline (2015) waste production the targets and milestones necessary to achieve Zero Waste.

1.1 Waste generated by Source, Outcomes and Sector

In 2017, a waste management and curbside waste study was completed for all of Oxford County, establishing a current baseline. Concurrently, a study of private sector waste streams was conducted to establish an overall estimation of waste generated within Oxford County across all sectors.

Outcomes can be found at:

http://www.oxfordcounty.ca/Portals/15/Documents/Zero%20Waste/Reports/Waste%20Management%20Facility%20and%20rbside%20Waste%20Composition%20Study_1.pdf

1.1.1 Residential

1.1.2 Institutional

1.1.3 Commercial

1.1.4 Industrial

1.1.5 Agricultural

1.2 Socioeconomic Value Creation:

According to a 2006 Natural Resources report, “every year approximately \$1 billion worth of recoverable materials are lost to landfills across Canada.” In addition to resource and energy losses, significant benefits to Oxford’s environment and economy can be found through better management of resources.

1.2.1 Local jobs created

The Ministry of Environment and Climate Change suggests that waste diversion can create up to 10 times more jobs than waste disposal. Our zero waste actions will include the identification of jobs created through waste diversion and resource recovery as compared to disposal. This will allow us to track the employment trends related to waste handling from both perspectives.

1.2.2 Evolving waste management from a liability to a resource

As in all communities today, waste management in Oxford comes at a significant cost to taxpayers and business owners. To add insult to injury, limited natural resources are mined, processed, shipped and delivered to the end consumer only to be unceremoniously buried in a landfill. In some communities outside of Oxford these resources may be simply destroyed through incineration. Both end disposal means have the potential for serious environmental consequences and waste energy opportunities.

Ontario's mandate to create a circular economy is being adopted in Oxford County with the goal of eliminating end-of-line treatment of natural resources. Through laws enforcing the production of goods and material that can be easily transformed into other resources, Oxford will monitor and adopt policies, processes, new technologies and innovation that will reframe the way we think about resource refinement and repurposing.

As we become successful in this endeavour, we anticipate waste management costs will decline while employment and resource management will develop a new economy and income stream for Oxford residents.

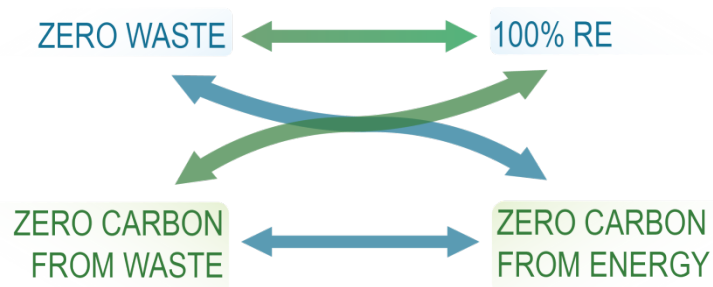
1.2.3 Carbon emission reduction

The two goals of Ontario's strategy for a waste free Ontario are:

1. Zero waste in the province
2. Zero greenhouse gas emissions from the waste sector

Carbon emission reduction is also the primary mandate of the *Ontario Climate Action Plan* and a significant aspect of Oxford's 100% renewable energy goal. It is estimated that 5% of Canada's greenhouse gas emissions come from the waste sector and, as such, must form part of the climate change action strategy.

Carbon emission reduction can be thought of as a link between our waste and 100%RE plans and reinforce the importance of managing both plans in tandem.



As illustrated above, carbon reduction goals must be set for both zero waste and the transition to 100% renewable energy. However, it must be noted that a transition to zero waste can also drive energy demand reductions, thereby expediting the transition to 100% renewable energy. Energy and resource management are synergistic and therefore should be assessed together, not in isolation.

1.2.4 Cost of Energy index (Oxford County Avg. vs Province of Ontario Avg.)

1.2.5 Avoided health care costs

Our current means of managing product from cradle to grave, comes at a significant cost to our health and well-being. This plan will attempt to quantify existing adverse health effects, including:

- Air quality from waste haulage (diesel and other combustibles used for transporting waste)
- Methane release from landfill and organic waste materials
- GHG emissions from existing processes
- Leachate levels
- Chemical content in product production
- Other

Air quality and clean water can both be considered at risk with status quo waste management processes. This plan will attempt to monitor and report on progress locally and at the provincial level.

1.3 Technologies and Activities

1.3.1 Modular and Scalable technology solutions

In the coming months, Oxford will be faced with a steady stream of technology solutions that proclaim to be the ultimate waste management solution. Prudent management of resource production, reduction, recycling and recovery will not be solved by any single solution but rather through thoughtful management of the ways and means we utilize the limited natural resources of which we are endowed. Close monitoring and testing of emerging technology solutions must accompany progressive policy and procedure.

As we research and implement new technologies into our resource management process, it will be important to appropriately scale these solutions. If a new concept or approach is to be successful, it must have the ability to scale up or down based on need.

1.3.2 Reduction at Curbside

An integral aspect of the Zero Waste Plan must include ongoing commitment to waste reduction. Our Zero Waste goal can be achieved through reduction at the source, simple collection and the full recovery of resources prior to final disposal.

Notwithstanding, resource separation is and will be an ongoing challenge. Municipalities around North America achieve varying degrees of success in their strategy to avoid cross-contamination of resources. Curbside waste and recyclables collection in Oxford County (excluding the City of Woodstock) are co-collected (garbage and single stream recyclables).

A source separated organics program was not pursued with the 2015 program changeover. Notwithstanding, while we continue to pursue waste reduction through backyard composting of organics, organics in the waste stream will continue to require attention.

1.3.4 Innovation Cluster: Developing public-private partnerships

In a recent sustainability plan release, Toyota suggests emerging technologies will provide up to 50% of the solution to our existing challenges.

The concept of exponential advancements in technology is something we take to heart and is the main theme behind our support for an innovation, or sustainability, cluster in Oxford.

Technology and innovation are understood to co-habitate; however, it is important that we appreciate the planning, networking and effort that must be invested in the development and implementation of technology, particularly when considering the specific needs of our own community.

In 2018, Oxford County issued a request for interest to develop an innovation centre. Additional detail can be located at <http://oxfordcounty.ca/Your-Government/Speak-up-Oxford/Campaign-Details/ArticleId/13932/Sustainability-Cluster>

1.3.5 Recovery Technologies

There are a variety of technologies in existence today that have demonstrated varying degrees of success in providing solutions to communities seeking to address or resolve in a sustainable manner their waste disposal issues.

These technologies include a variety of processes to capture energy and separate metals, all with varying operational issues and capabilities, all very much dependant on the composition of the waste stream.

These technologies include:

- Anaerobic digestion
- Conventional Gasification
- Direct combustion
- Composting
- Hydrolysis
- Mechanical-biological treatment (including steam-based)
- Plasma arc gasification
- Pyrolysis
- Refuse derived fuel production
- Thermal and catalytic depolymerisation
- Waste to liquid fuels
- Enhance Material Recovery

Through the Zero Waste plan process, the ability of these technologies to help Oxford achieve its Zero Waste goal in a timely, cost effective and practical manner will be assessed. Our goal will be scalable, modular based systems that can fully recover and make appropriate use of organic, metal and plastic resources from the waste stream.

Significant activity is underway in Oxford County in cooperation with consultant and staff resources toward a final waste reduction and recovery solution.

Details can be viewed through reports and presentations at <http://oxfordcounty.ca/Your-Government/Speak-up-Oxford/Campaign-Details/ArticleId/13932/Sustainability-Cluster>

Chapter 2

Develop the Zero Waste Blueprint

Overview

Chapter 2 gathers the key features of the Zero Waste target (timeline, scope, waste handling, process technology adoption, degree of political obligation and commitment). Baseline data for existing public and ICI (industrial, commercial and institutional) and agriculture sector waste will be continually compared to milestone targets leading to our Zero Waste goal. Details of this self-report will be managed through database applications.

Key points

- Zero Waste is fully achieved when every resource used to create a product is transformed to another resource that can be fully utilized for the same or for a totally different purpose.
- The concept of a Circular Economy in this context implies that a resource can be repurposed indefinitely with little to no unrecoverable waste as a by-product of resource harvesting and use.
- Define Zero Waste target
- Model Zero Waste Scenario
- Estimate the Potential Economic, Environmental and Social Benefits
- Closing the Resource Loop: According to the *Waste Free Ontario Act*, “circular economy” means an economy in which participants strive to:
 - (a) minimize the use of raw materials;
 - (b) maximize the useful life of raw materials through resource recovery; and
 - (c) minimize waste generated at the end of life (products and packaging).

Background

2.1 Targets

Oxford County is an upper tier municipality comprising eight urban and rural municipalities. As such, the success of the many will determine the success of the whole.

While the goal of Zero Waste in Oxford is a county-wide goal, resource recovery will be measured at a municipal level to ensure any local nuances are appropriately addressed. As noted, this plan frequently references the *2014 Oxford County Waste Management Strategy* and will be updated via cross-sector waste haulage and landfill audit results during the 2016/2017 period.

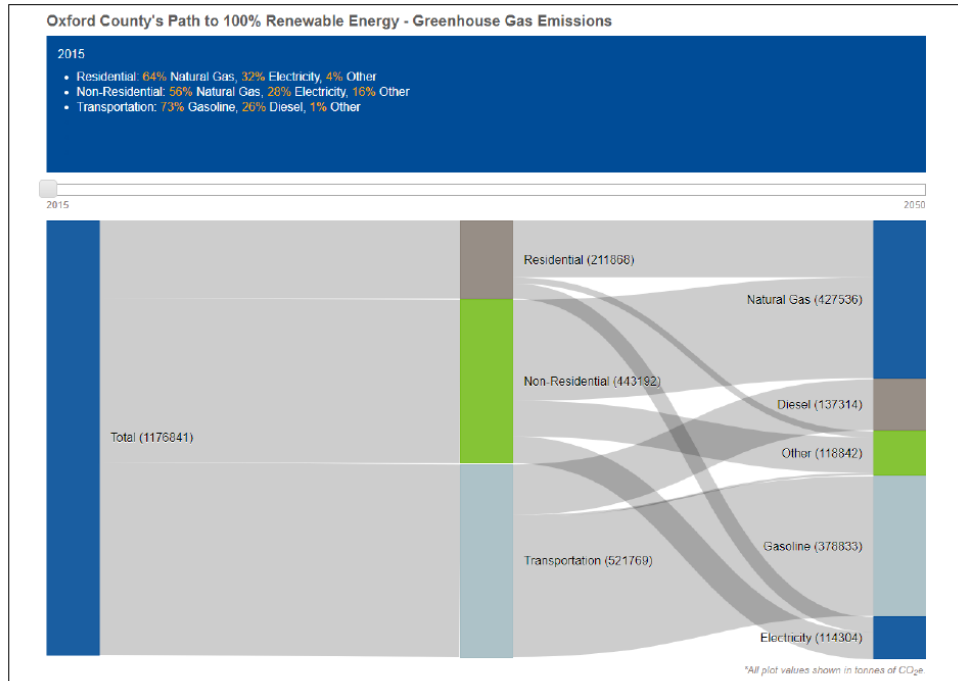
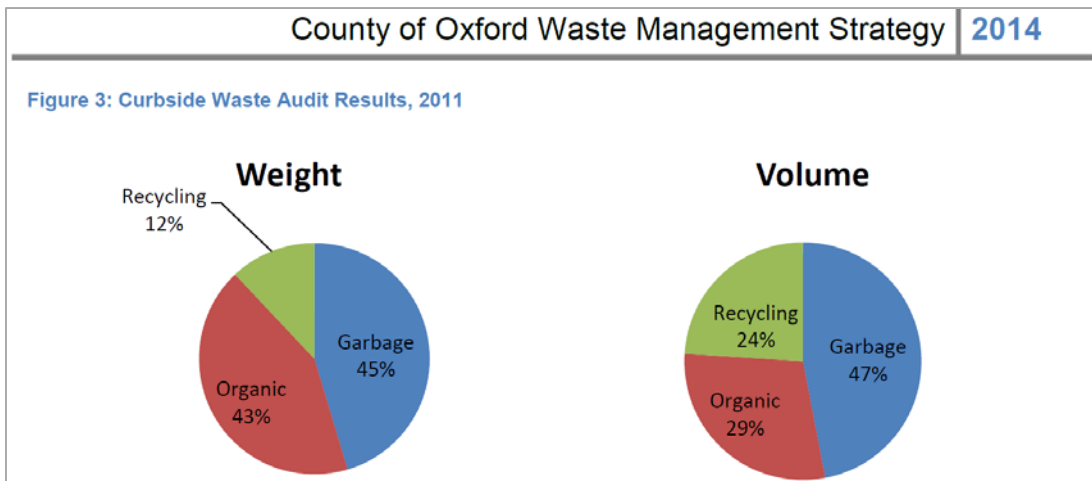


Figure 7: Annual greenhouse gas emissions in Oxford County for 2015.

To help predict advancements in our 100%RE plan, we are using a dynamic Sankey plot that allows for multiple input and calculation of change over time. In the example above, we have used data from our energy baseline study as input for a GHG inventory and reduction analysis.

As we develop our Zero waste (and Zero Poverty) plan, this same approach will be used to predict advancements between 2015 and 2050.

Baseline waste information will be gathered through a 2016/2017 audit process and updated as frequently as possible. The following chart provides a 2011 snapshot of waste by weight and volume.



- 2.2 Oxford aggregated
 - 2.2.1 Blandford-Blenheim
 - 2.2.2 EZT
 - 2.2.3 Ingersoll
 - 2.2.4 Norwich
 - 2.2.5 SWOX
 - 2.2.6 Tillsonburg
 - 2.2.7 Woodstock
 - 2.2.8 Zorra

2.3 Reduction of solid waste generation

The Province of Ontario is taking waste reduction and resource recovery seriously. Through the *Waste Free Ontario Act, 2016* a new regulatory body ***The Resource Productivity and Recovery Authority*** will oversee a new producer responsibility process and possess the regulatory to ensure progress toward waste reduction and resource recovery at the producer level.

2.3.1 Supply Chain – Managing reduction at the source

2.3.2 Oxford Waste Management Facility (Salford Landfill) Lifespan

2.4 Oxford Sustainability Cluster

Research, development and implementation of new technologies and ideas toward a waste-free economy is considered a critical step in the development of zero waste in Oxford. Similar to our 100% renewable energy by 2050 goal, a hands-on approach to reduction and resource recovery technology solutions, methods and trial implementation will form the foundation to our approach. Once invested in a technology or approach, it is often difficult to reverse or alter course without straining time and financial resources.

It is imperative that we take a measured and systematic approach to evaluating new technologies prior to full scale implementation. This approach will involve the gathering of key stakeholders including academic, public and private partners who can gather in a common space for the purpose of information sharing, research and to create small scale trial programs to test solutions.

2.4.1 Modular trials and demonstrations

As tempting as it may be to fully invest in a solution, once identified and agreed upon, our strategy toward implementation should be to start small with a limited number of

customers or participants and to measure success. Demonstration projects should be sector specific, with validated baseline information established prior to implementation.

The following sections provide an example of a possible starting approach for each sector.

2.4.1.1 Commercial

Through individual business waste audits, establish a baseline of waste generated by category. Organics, paper, plastic, metals and so forth should be categorized and measured in advance and an educational program established with willing commercial participants which will lead to a demonstration project.

Consistent with the zero waste goal, all participating businesses should establish a clear understanding of existing waste streams with a commitment to reach zero waste in all categories.

2.4.1.2 Industrial

Identify leading industrial players (i.e., Toyota MMC, CAMI, and Siemens) and gain an understanding of practice and baseline information for each. Gain an understanding of their respective supplier requirements (zero packaging, purchasing requirements) and establish the baseline status for these leaders for the purpose of establishing goals for other participants.

Create a small working group of similar industrial players and follow a similar process. Establish a demonstration project with the goal of assisting willing industrial partners to meet or exceed the high performer baseline results.

2.4.1.3 Institutional

Schools, hospitals and municipalities all play a significant role in the solution toward zero waste, each with their own unique challenges and opportunities. They all can play a key role in establishing baselines and creating small-scale demonstrations.

2.4.1.4 Residential

Virtually every resident in Oxford participates in, or comes in contact with, at least one of the above noted sectors. Cross-educational awareness and best practices between all of these sectors will transfer to residential habits and vice versa.

Residential baseline information will be largely gathered through public waste landfill audits; however, a smaller scale audit of willing residential participants could be established at the micro-level.

All pilots and demonstration projects based on the above noted sectors can be supported through the Oxford Sustainability Cluster activities. In turn, reporting and educational programs can be developed for further positive feedback looping to educate all sectors on the outcomes of the trials.

2.4.1.5 Agricultural

The agriculture sector has generally been an early adopter of technology. Further demonstrations of ever advancing technologies and practices will continue and can be leveraged to even broader benefit. Agriculture feeds the world and efficient use of food product ensures more are feed.

2.5 Transferable Skills

A significant benefit of small-scale pilot projects is that of lessons learned that can be transferred between sectors. As noted in the Residential category, results from one sector can be transferred to another, either through an active or passive change in thinking. A change in culture permeates across home, to work, and carries along with the person or group positively affected by that change. As part of the sustainability cluster objective, an active regard for improvements should be established with the goal of adopting improvements in waste reduction, regardless of home, work or social activities.

2.5.1 Mentorship

As one sector learns and adopts new ideas and becomes more aware of opportunities for waste reduction (based on empirical experience), the opportunity to mentor and assist other cohorts becomes more apparent. As an example, every municipality within Oxford brings a unique quality and set of expertise to the greater Oxford family. As each municipality adjusts to and adopts specific skills and awareness of the circular economy, cross coaching can take place, assuming each municipality accepts the fact they can learn, one from the other.

2.6 Organic Resource Development

Organic material is the source of methane production (greenhouse gas emissions) from landfill operations. Over 50% of our curbside garbage consists typically of food or animal waste product. Repurposing of organic material is critical in our quest for zero waste and presents a huge opportunity for anaerobic energy conversion activities as a result of better resource management. In many jurisdictions, curbside organic pickup programs, mandatory food service recycling and grocery chain recovery programs are becoming mandatory in an effort to both redirect this resource from landfill and to recover the inherent energy of biomass into some other form usable for human benefit. In some jurisdictions, organic waste from grocery chains and food service organizations must be repurposed and otherwise eliminated from entering the landfill stream. Organics recovery is not the only answer. Further work to ensure less food waste from “farm to table” has the double benefit of addressing both the need for nourishing food and the reduction of waste generated.

Oxford County will need to take a close look at incentives and bans that help to reduce food spoilage and/or redirect this valuable organic resource away from disposal to resource recovery. *The 2014 Oxford County Waste Management Strategy* concluded that the cost and environmental (emission) implications of source separated organics (curbside collection) did not warrant the expected volume of organic material that would be collected through a curbside

program. This conclusion will be confirmed; however, it does not in itself mean Oxford does not want to address organics in our waste stream. Technologies do exist that may offer a post-collection solution to removing organic material from our waste stream. The Zero Waste Plan will look at the applicability of such technologies in Oxford and as a result the ability to recover the valuable organic resource currently entering our landfill site.

Chapter 3

Formalize Aims and Functions

Overview

Chapter 3 investigates how far the local government has engaged in strategic cooperation with the surrounding area. Furthermore, it verifies the scope of the background analysis on which the Zero Waste strategy has been based, as well as other aspects such as the availability of a concrete action plan.

We also assess the extent to which the local government has helped institutionalize actions towards the Zero Waste target (i.e., human and financial resources dedicated, initialization of projects, coordination of activities, etc.).

Key points

- Focus is on program planning with each municipality at a high level. Details of planning outcomes will be implemented through other sections.
- The Zero Waste plan must be formed within the structure of existing regulatory and planning framework (i.e., *Waste Free Ontario Act 2016, 2014 Oxford County Waste Management Strategy*).
- Existing departments and processes must be partners as opposed to barriers.
- Municipalities must lead by example.
- Provincial and federal governments must honor their commitment to zero waste and a low carbon future– this plan must encourage upper government follow-through of intentions.
- Fix Binding Targets
- Define Comprehensive Legal and Regulatory Frameworks
- Establish Relevant Institutionalized Bodies

Background

In terms of a Zero Waste goal, we have the unique advantage of solidarity in Oxford through a motion of council. We are in the early and fragile stages of our transition, making planning and orientation a critical path.

Resource, as opposed to *Waste*, must become the key concept of a circular economy. As we evolve our perception of materials that are deemed to be end of life, a culture change will evolve that will alter the way we perceive materials as resources of value. The framework and leadership that will enable this change will be ushered in through process and municipal leadership.

Oxford County has established a significant commitment to institutionalization through the development of its *Future Oxford Community Sustainability Plan* and the establishment of the community focused Future Oxford Partnership.

3.1 Baseline Waste and Resource Assessments

Our plan will gather waste information from as many sources as possible and, with the support of county planning and GIS departments, create a spatial image of waste density and source for each respective municipality.

- 3.1.1 Blandford-Blenheim
- 3.1.2 EZT
- 3.1.3 Ingersoll
- 3.1.4 Norwich
- 3.1.5 SWOX
- 3.1.6 Tillsonburg
- 3.1.7 Woodstock
- 3.1.8 Zorra

3.2 Waste Reduction & Resource Recovery

This section focuses on planning with municipal leaders within each community. Strategies will be created for public and staff training at the County level and within each municipality. Specific reference to these themes can be found in Chapter 4.

3.3 Monitoring technology advancements

In the same way that advancements in technology will revolutionize the energy sector, technologies related to resource reduction and recovery will form a significant part of the zero waste solution. The implication of technology development is more than simply waste reduction, recovery or conversion. Technology applications should reach back to the very source of initial resource capture and refinement to ensure that all products we create and consume result in zero waste, whereby all product is consumed and/or all resource material at product end-of-life is either re-useable, recyclable, or recovered.

This section will be divided out into the various stages of resource mining, processing and recovery to ensure technologies can be associated with all stages of resource life to avoid focussing simply on the means of managing the resource at “end-of life.”

Please reference Chapter 1, Activate Local Resource Potential, for implementation detail.

3.4 Monitoring political change

A longer term and relatively aggressive plan such as Zero Waste must be able to weather the storm of political change. With a change of political leadership possibly occurring every four years, effective communication and planning with all levels of staff must be managed properly.

3.5 Strategic cooperation between Oxford municipalities

In the spirit of the Oxford County motto “Growing Stronger, Together,” a conscious effort will be made to avoid duplication of effort, while tapping into the strengths of each individual partner. While the overall Waste Management strategy is overseen by County, leadership and a coordinated effort at the political, area municipal, and public level is critical to the timely transition to our goal.

Outreach and educational forums will take place at council meetings and public venues within each municipality, and a “coming together” under the auspice of Oxford County will take place as appropriate.

3.6 Strategic cooperation with contiguous municipalities outside Oxford

Planning for a zero waste target will eventually need to expand beyond our borders, including regions, counties and municipalities in close proximity. Oxford may need to draw on the unique characteristics of neighbouring jurisdictions to gain appropriate economies of scale that service and activity sharing may provide.

Based on the expectation of the *Waste-Free Ontario Act 2016*, the goal of Zero Waste will become a provincial mandate. We hope to start in Oxford and spread out as we begin to work more closely across the province as we seek a common goal.

3.7 Environmental and Ecological Limits

A key theme throughout the Future Oxford Sustainability Plan is the necessity of recognizing a prosperous social and economic future must operate within finite environmental limits.

No longer can we afford to ‘borrow’ from future generations – a bad habit we have formed over the past two centuries and upon which our linear economic growth model is currently based.

Full cost accounting, in other words, recognizing the true cost of resource, energy and environmental mortgaging must be accounted for. In simple terms, we significantly impact the ability of future generations to enjoy a reasonable quality of life if we continue to consume and waste resources without regard to ecological consequence.

3.8 Food Security

For too many years, we have taken food security in Ontario (and Oxford) for granted. The fact is, more than 40% of our food produce ends up in a waste stream of one form or another. We have the benefit of abundant arable lands in Oxford, a professional agricultural sector and a thriving business platform from which to produce. However, the very food we rely on for a large part of our economy and livelihood is no-less reliant on raw resource and energy availability.

Prudent management of energy and other resources required to produce food in Oxford is necessary, along with the need to create a circular process of managing food resources from planting through to recycling.

Planning to ensure zero waste as a result of food processing and just as importantly, minimizing resource use in the generation of food resources must be a priority.

Local food resource champions must be identified and encouraged to lead us by their example. This section will entertain planning for leadership and best practices in the cultivating, harvesting, handling and eventual re-purposing of food wastes.

3.9 Sustainability Cluster

Planning and orientation will revolve around the input and output value of research, development and education. The idea of bringing together a diverse and representational group of professional and laypeople for the purpose of exploring options and educating one another will underpin our efforts surrounding sustainable future development.

While this concept includes, but is not limited to resource management, the very fact we are considering critical themes such as energy, housing and transportation all serve to support one another given the fact all are fundamentally related.

3.10 Policy & regulatory framework

The recent release of the *Ontario Climate Change Action Plan*, the *Strategy for a Waste Free Ontario: Building the Circular Economy*, and the *Waste Free Ontario Act 2016*, is significant and timely. They all recognize the need to reduce material resource use while eliminating the large carbon footprint that presently coexists with the production and disposal of resource rich material.

There are significant opposing forces at play. We have established an economy based on creating and moving product and to a wasteful society. We now find ourselves at the cross-road of choosing to consume less or sacrifice future generations by continuing to consume, and waste, at unsustainable levels.

In the quest for zero waste, a significant role for Oxford will involve effective working relationships with key ministry staff, while holding government accountable for its own stated commitments.

3.11 Future Oxford Community Sustainability Plan

In 2015, a final version of the Future Oxford Sustainability Plan was approved by Council, providing a means of identifying and implementing sustainability practices, including the transition to 100% RE (renewable energy) and the pursuit of Zero Waste.

The Partnership provides leadership and guidance to various action committees operating across Oxford within the three pillars of *ENVIRONMENT*, *ECONOMY* and *COMMUNITY*. Other

community groups will be engaged, and four newly established or emerging committees have a direct role to provide input and comment as the Zero Waste plan is implemented.

3.11.1 Zero Waste Oxford

Zero Waste Oxford (ZWO) includes members from Transition to Less Waste, Oxford County staff, municipal leaders and private sector professionals. The committee mandate is to identify key strategies, plans and actions that will guide Oxford's waste reduction and resource recovery efforts to achieve zero waste.

3.11.2 Smart Energy Oxford

Smart Energy Oxford (SEO) comprises private, municipal and utility stakeholders. Its mandate is to develop and implement the 100% RE plan through meeting and discussion, public outreach through respective professional circles, and recommendations for planning improvement. The synergies between energy and zero waste have been discussed previously.

3.11.3 Community Oxford

Initiated as a means to conduct a Canadian Index of Well-being assessment in Oxford, committee membership includes social and non-profit organizations, staff and private citizens.

It is expected that this group will be transitioning to a pillar group within the Future Oxford Partnership umbrella in the near future. A shift to renewable energy will not be without social challenges; however, we believe the long-term result will be a more democratic and independent energy result for citizens.

3.11.4 Economy Oxford

The transition to renewable energy will create both opportunity and challenges from an economic perspective. This pillar committee is in the early stages of being established. It is envisioned that it will be driven by business and community leaders. As with social outcomes, a properly implemented transition to zero waste will have a net positive impact to the County economy as we benefit from the growth of the waste reduction and resource recovery sectors of our economy.

3.11.5 Reforest Oxford

Reforest Oxford is committed to the annual goal of planting 10,000 trees in Oxford, over and above the number of new trees that would typically be planted each year. Reaching the goal will involve identifying funding sources for tree planting, working with land owners, conservation authorities and other partners at developing tree planting programs to enhance the natural environment in Oxford.

3.12 Provincial Partnership & outreach

The County is aggressively seeking lasting partnerships with all relevant Provincial ministries. This outreach includes ministerial delegation and cultivating relationships through onsite

meetings to discuss specific topics as appropriate. An ongoing relationship with the Province is considered a crucial aspect of our plan. Taking full advantage of our alignment with the provincial goals attributed to community sustainability, energy, waste and other challenges is imperative.

3.13 Federal Partnership & outreach

From an energy, climate and waste perspective, the Government of Canada's goals appear to align well with provincial and county plans and strategies. Participation at the federal level will occur generally in cooperation with our various partners.

3.14 Municipal Departments

Oxford County Public Works, specifically Waste Management, is already considered a waste diversion and management leader among Ontario municipalities. The effective roll-out and implementation of this plan should see additional support, resources, tactics and actions as build upon existing success and historical improvement in waste management practices.

3.15 Leading by Example

All municipalities in Oxford need to form a plan of their own for a transition to Zero Waste. Leading by example is essential. This will take significant planning and orientation among all municipalities and departments and must be monitored.

The vision and goal of the *Waste Free Ontario Strategy* and the *Waste Free Ontario Act 2016* are:

1. **Zero waste** in the Province of Ontario
2. **Zero greenhouse gas emissions** from Ontario's waste sector

As a community committed to zero waste and zero greenhouse gas emissions from the waste sector, Oxford County accepts the challenge to manage this process to success across all sectors within the County, and we believe all municipalities in Ontario must adopt and deliver a similar objective.

Chapter 4

Promote Zero Waste and Circular Economy

Overview

Chapter 4 evaluates the scope of measures implemented to improve performance in waste reduction and resource recovery.

Key points

- Continue to build a culture of conservation
- More effective management and use of resources will lead to a reduction and eventually elimination of waste.
- All material must be considered valuable resources– all materials must be manufactured with the objective of full resource use, re-use, recycle, or recovery.
- Recycling of materials must be more cost effective than raw material mining and processing and more cost effective than traditional disposal.
- Change Human Behaviour
- Identify Waste reduction and recovery solutions
- Upgrade Infrastructure and Support New Technologies
- Change Human Behaviour
- Identify Waste reduction and recovery solutions
- Upgrade Infrastructure and Support New Technologies

Background

4.0 Waste Reduction

The goal of reducing and eliminating waste requires a cross-sectoral approach to public and business education and awareness; a means of measuring progress; and the commitment to monitoring achievement and adjusting the course to ensure continuous improvement is achieved.

4.1 Awareness and Educational programming

a. General Public

i. Creation of special event programs.

The public advocacy group Transition to Less Waste (TTLW), a passionate and committed community group of volunteers committed to zero waste, has participated in community events to demonstrate the potential for zero waste events in Oxford County. Due to the efforts of TTLW, the 2015 inaugural Future Oxford Expo achieved zero waste with over 400 attendees and over 30 exhibitors. Subsequent events in 2016 and 2017 continue to improve the zero waste outcome of this festival.

The Canterbury Folk Festival, a much larger, very successful, and long-time music event hosted by the Town of Ingersoll, has made significant strides towards achieving zero waste over the years. Teaming up with the Folk Festival organizing committee, the 2016 event was promoted and conducted as a Zero Waste event. With more than 12,000 people attending, the event generated only two standard garbage bags of waste. TTLW organizers worked tirelessly to achieve this success and believe even less waste can be generated with better vendor and public awareness at future events.

Other municipalities, such as the City of Guelph, are working to elevate public awareness of waste and recycling through demonstrative programs at special events. Zero Waste special events are a great way to demonstrate that zero waste generation is possible, particularly when conducted in a fun setting such as that of the Canterbury Folk Festival.

ii. Student Specific Programs

While recycling and waste programming is touched on at many schools, the very concept of zero waste is new and largely misunderstood. Cooperation and support for the local school boards should be a major part of our demonstration and public outreach programming.

iii. Packaging and Over Packaging

Resource recovery and waste reduction oversight is a major part the *Waste-Free Ontario Act, 2016*. Associated regulations will establish the governance and enforcement mechanisms and authorities necessary to ensure producers take responsibility for the packaging resources they consume and the waste they generate.

Aggressive public education and awareness will form part of our plan to ensure compliance. Participation and cooperation begins through awareness and understanding. While penalties and enforcement should be seen as a last resort, this new regulatory authority is a critical aspect of a successful transition to a waste-free Ontario.

iv. Organics programming for urban and rural citizens

According to the Ontario Waste Management Association, Ontarians generate about 4.2 million tonnes of organic waste annually, making up about one-third of our waste stream in the province. Organic material is the “low hanging fruit” of the waste stream. However, cost efficient and effective recovery remains a challenge for many municipalities. Public and business sector awareness is critical. Contamination free organic material needs to be removed from the waste stream and processed through composting and/or digester technology operators to better leverage existing opportunities for full cycle processing of this valuable resource.

v. Municipal Recycling and “Best Of” Practices

Future Oxford has the benefit of passionate and capable community volunteers engaging through action committees, such as Zero Waste Oxford, Transition to Less Waste, OPAL and others. These groups should continue work together to explore other regional practices that might advance our approach to zero waste. New and emerging

technologies and practices can then be fed into the Oxford Sustainability cluster engine for trial, testing and implementation.

b. Business

- i.** A little known fact: the majority of commercial, institutional and industrial waste is exported outside of Oxford County. It is critical that we fully understand the quantity, composition, cost and destination of this waste stream if we are to take responsibility for the waste generated within Oxford County and eliminate waste exports. Audits of the ICI waste stream must be conducted immediately to inform the development of a plan to address this essentially unknown risk and opportunity.

ii. Urban Centres and Rural Settlement Business Campaign

Working with the local business organizations, a pilot or demonstration program should be tailored to this specific group of waste generators. Diverse and dynamic, urban and rural settlement businesses provide a kaleidoscope of waste challenges and opportunities.

iii. ICI Source Separation Pilot

Single stream, multiple streams, source separation? The debate continues with respect to the most cost effective and sustainable approach to waste reduction and resource recovery. The Oxford Sustainability cluster could again serve as a platform to bring all players together in cooperation.

iv. Construction/Demolition Audit

In many construction/demolition projects the majority of waste materials can be recycled or the resources recovered. Drywall and concrete for example, can be fully repurposed for other or similar applications. A successful and growing C&D recycling program, operated at the Oxford Waste Management Facility in Salford is an ongoing demonstration of the growing potential for waste reduction and resource recovery in this sector. To better understand developer and contractor performance, an audit should be conducted on this sector and a close working relationship with the Oxford Builders Association established to ensure continuous improvement is achieved.

v. Provincial Performance

With the results of our programming and audit activities noted above, we will be able to create a means of measuring the performance of provincial laws and regulations. While many of the initiatives that will be created through the *Waste Free Ontario Act, 2016* are admirable, it will be important to gauge the success and to hold the Province accountable to “do what they say they will do.” This important part of the monitoring process will be undertaken in a cooperative and respectful manner. Doing so will add value to our mutual goal of a circular economy in Ontario and Oxford County.

4.2 Product Re-Use (reuse in existing form)

a. General Public

- i. Creation of a one-week swap program, similar to that of the City of Ottawa;
- ii. Recognizing that the existing Large Item Pickup program could be transformed to create re-purposing opportunities.

b. Not for Profit Sector

- i. Trashapalooza
- ii. Habitat for Humanity (ReStore)
- iii. Goodwill
- iv. Salvation Army
- v. Diabetes Society
- vi. Social Enterprise start-ups (i.e. Impact Junk)

c. Business

i. **Toyota Business Strategy.**

[The Toyota Environmental Challenge 2050](#) is extremely well-aligned with the Future Oxford Community Sustainability Plan and initiatives. As a local business operator in Oxford and an environmental and technology leader globally, Toyota will be an important partner and can provide leadership to their cohorts and competitors alike.

We will endeavour to interview business operators in Oxford County and use Toyota as a benchmark. Perhaps other businesses are actually outperforming Toyota and simply operate “under the radar.” Either way, using a respected and well-known partner such as Toyota as a benchmark will establish a relatively high baseline from which to start.

ii. **Resources not currently recycled or recovered.**

As part of our audit and pilot programs, attention will be paid to identify items that are fully recyclable, yet typically landfilled for whatever reason (e.g., bail wrap).

4.3 Waste Stream Audits

The *2014 Oxford County Waste Management Strategy* provides significant detail for waste content; however, most of that detail relates to the municipal (largely residential) waste stream. Detailed and comprehensive audits for all waste streams must be completed if we are to establish an accurate understanding of waste stream quantities, composition, and destinations.

A full audit of waste entering the Oxford Waste Management Facility, and waste managed through waste haulers operating in Oxford was completed in early 2017. The full report can be found at <http://www.oxfordcounty.ca/Your-Government/Speak-up-Oxford/Campaign-Details/ArticleId/13123/Draft-Zero-Waste-Plan-1>

4.4 Resource Recovery

Significant progress is being made toward a final solution for waste reduction and recovery technology selection. Details of our progress can be found at <http://oxfordcounty.ca/Your-Government/Speak-up-Oxford/Campaign-Details/ArticleId/13603/The-future-of-waste-management>

4.4.1 Changing the Narrative

Changing the narrative around waste by definition is a first step toward a successful resource recovery program. Our present concept of end-of-the-line resource management leads to a natural termination of otherwise valuable resources being disposed. The concept of a circular economy suggests every mineral mined and refined should be utilized in a manner that creates a perpetual resource. This may be a utopian concept to some; however, the goal is continuous re-use, recycling or recovery of a resource until it is truly no longer of value.

Every resource disposed of carries with it inherent energy and/or value that could have been reused, reshaped, or reprocessed to a usable and valuable resource.

4.4.2 Creating and identifying markets

A resource has value only where there is a market. Presently in many cases, recyclable materials are overlooked and raw material refinement is adopted simply because the economics of the recycling process do not make sense. This situation must change if we are to repurpose existing resources over mining of new raw resources. Oxford will need to monitor the Province's new waste reduction and resource role to ensure viable markets that encourage full use and value of all resources are developed.

4.4.3 Elements of a robust resource recovery process

Recovery of resource materials must be open, transparent, and rigorously monitored. A program that is simply elective, loose and carries no consequence will ultimately fail. The Province's creation of a *Resource Productivity and Recovery Authority* with regulatory compliance authority and accountability has "raised the bar." Our role in support of this initiative must include not only education and awareness, it must also include support for the compliance office when necessary.

An assessment of the County's compliance risk must be undertaken to ensure understanding of our organizational risk and that of Oxford residents and businesses. Compliance risk for all sectors within the County can be managed via public/private partnership cooperation and initiatives, which can in turn form part of our education and awareness activities.

4.4.4 Assessment and demonstrations of resource recovery technologies

Achieving zero waste will come only with significant effort. It will be important to recognize when something is "too good to be true" and when something delivers on its

claim. There is a natural willingness to hope for an easy cure to our wasteful ways, but we must approach the introduction of new technology with a seasoned amount of skepticism and desire to understand the truths. We do not have time to allow for diversion of our efforts to dead-end solutions and must assess each technology with care and a critical eye. Establishing a robust public/private cooperative model is necessary if we are to identify the best technology solutions to achieve our desired outcomes. Key attributes will:

- include the ability recover resources currently within our waste stream composition;
- include the ability to scale based on waste quantity;
- be modular-based to minimize installation costs, commissioning time and complexity;
- be economically viable, community appropriate, and environmentally sound.

From a climate change perspective, all processes must result in a net reduction of GHG emissions, reduce energy demands through resource recovery, and/or produce some form of alternative energy otherwise wasted.

4.4.5 Monitoring unexpected negative consequences of recovery technology

Part of the risk inherent in the adoption of new technology is that of unintended consequence. This can come in the form of environmental, economic or community impacts that can result in spite of the best of intentions.

Careful assessment, monitoring, and mitigation protocols and practices of the following will be vital to ongoing community confidence in any technology selection, implementation and operation:

- water and/or air quality / emission performance and outcomes;
- cost predictability, monitoring and control (long-term gain greater than incremental cost);
- net contributor to our future waste reduction / resource recovery economy;
- risks identified, managed, monitored and mitigated;
- appropriate public/private partnership deliverables and accountabilities;
- open, transparent, and competitive procurement processes

4.4.6 Technology Selection Process

The Identification, screening and evaluation of technologies will be documented and publicly vetted prior to any recommendations to Council. The Future Oxford Community Sustainability Plan's Multi Criteria Assessment Tool will be used to screen and evaluate technologies and providers. Local stakeholders (Zero Waste Oxford) supported by technical expertise, will guide the review process to conclusion.

The development of a technical implementation plan will help guide the selection process and may be supported by:

- assessment of existing resource recovery applications, including site visits and operator interviews;
- gathering and categorizing existing suppliers and technologies to determine what technologies are available, what can be accomplished by each approach, and to what extent are desired outcomes going to be achieved;
- extensive audit activities, including both residential and ICI waste stream content. A thorough and accurate accounting of waste quantities and composition is an essential input into the final technology selection.

Critical issues to monitor and document during the review and implementation of the resource recovery process should include:

- financial viability
- screening of resource specialists and technologies to maintain integrity of research
- management of knowledge and understanding with stakeholders
- predicted regulatory performance
- demonstrated regulatory performance
- the ability to demonstrate progress and,
- sufficient time to invest in research and review prior to investment and deployment

Chapter 5

Integrate Zero Waste across Sectors

Overview

Waste is generated by all sectors of our community, requiring solutions and participation by each sector.

Key points

- A transition from fossil fuel to renewable or zero carbon energy use for transportation of waste resource material is essential.
- According to the Ministry of Environment and Climate change, 5% of all GHG emissions can be attributed to waste handling, much of that in the form of haulage emissions.
- Development of an electrified or alternative energy transportation system in Oxford will prepare us for next technology applications in waste handling processes, including landfill equipment.
- Incorporate Circular Economy
- Identify Producer responsibility opportunities
- Identify Cross-Sector waste composition
- Modernize waste recovery process and equipment

Transportation

The transportation sector consumed 34% of total energy required in Canada and contributed a similar share of carbon emissions. The waste sector contributed 5% of total GHG emissions, much of that through the transportation of waste. While reduction is a priority, the remaining energy required to transport resources to/from consumers must transition to zero carbon emissions.

In many cases where alternative fuels are utilized, energy can be transformed from renewable sources and stored for later use. In the case of battery electric vehicles (BEV), electrical energy can be harvested from renewable sources of energy such as solar or wind and stored to the BEV battery (in most cases, lithium based storage).

Similarly, hydrogen can be harvested from renewable energy through the process of electrolysis using solar, wind or any other renewable resource. Although not zero carbon, the injection of hydrogen enriched syngas (synthetic methane) into existing natural gas infrastructure is a step in the process to lower emissions from fuel sources. Ultimately, it is possible that the gas-based energy source of choice will be GHG-free (carbon-free) hydrogen.

To help advance alternative fuels for transportation across all sectors, Oxford County is exploring opportunities ranging from academic research partnerships through to the development of an accessibility plan aimed at creating battery electric vehicle charging infrastructure across the County.

Oxford and its partners are in the early stages of development and this section will undergo constant updates in coming months and years.

5.5 Renewable fuel and alternate transport opportunities in Oxford

The transportation of waste comes in many forms. The most obvious and apparently dominant form is that of large haul transport powered by diesel fuel; however, small scale transport also plays a role.

The Oxford County Waste Management Facility at Salford site is open to the public and is accessed by both small private vehicles and small and larger commercial haulers. The smaller vehicles are likely to transition to zero carbon emission standards sooner than larger, and accelerating such a transition may be a worthwhile opportunity to reduce emissions from waste transfers. Converting collection vehicles to cleaner natural gas (CNG) and renewable natural gas (RNG) fuel sources is another opportunity for emission reductions as a result of transporting waste related materials.

The following technology solutions are identified in the Oxford County Draft 100%RE Plan and are also applicable to our goal of zero carbon emissions for waste resource management.

5.6 Landfill grading and material handling equipment

The process of storing, grading and capping landfill waste requires a significant investment in fuel and equipment. Research and testing (in cooperation with the Sustainability Cluster initiative) of alternative fuel vehicles that can accomplish the same work must be considered as part of the solution to zero carbon emissions.

5.7 Existing waste resource equipment by type

5.7.1 Salford Landfill (large and small equipment)

5.7.2 Private Haulage firms

5.7.3 Personal transportation for haulage

5.8 Stakeholder participation

Through the development of our Sustainability Plan, Oxford has created a robust and diverse community and partner representation.

5.9 Measuring socioeconomic improvements

As with any disruptive change, we need to balance the short term pain and costs of the transition to a fossil free transportation network in Oxford with the longer term gains to economic prosperity, social benefit and environmental stewardship.

These improvements will be monitored and reported on a regular basis, with a reporting term to be determined as our transportation plans evolve.

Chapter 6

Identify Financial Resources

Complete a SWOT for this section, including the following:

- Introduce Innovative and alternative financing mechanisms
- Implement New Mechanisms to internalize externalities
- Establish Stable, Long-Term Support Schemes
- Identify existing cost structure for landfill, provide a detailed section that outlines existing budget, tipping fee structure and income, resource recovery income, etc.
- Lost revenue from tipping fees vs avoided landfill management expense
- Projected implication of landfill phase-out between present and 2040/2060
- EMR facility capital and operational costs
- Operating cost of EMR vs landfill
- Potential income from EMR output
- Projected markets
- Include a Case study in this section that profiles a comparable EMR and if possible, empirical results from similar municipal or private sector experience (landfill to EMR facility)
- Employment implications (anticipate increase in human resources?)
- Forecast implications of remaining with status quo
- Suggest we request SLR contribution to this section, or pull specific sections from the report into this plan
- Assemble SLR and audit reports as appendix references to this plan

Chapter 7

Support Decentralization and Inclusion

Overview

Chapter 7 assesses the scope of public engagement activities aiming to support the zero waste strategy and target via different communication channels and platforms.

Key points

- Public inclusion and engagement is critical to any transition.
- A variety of methods must be used to prepare the public for a transition to zero waste.
- Ensure Accountability and Transparency
- Promote inclusive communication and outreach
- Safeguard a Socially Just Transition

Background

7.1 A Leap - Changing the Narrative around waste and resources

For several generations, we have treated resource material as infinite and the product it creates as disposable. It will take significant effort across all sectors to change this mindset and public engagement and education will play a crucial role.

7.1.1 Creating a culture of conservation

In many ways, creating a culture of conservation is identical when considering energy and waste. In fact, part of our strategy to encourage conservation and efficiency on the energy front will involve the visual aspect of waste reduction and resource recovery.

Energy conservation and efficiency is an intangible concept since the actual work and process of energy use is, for the most part, invisible to the process. Waste resource management on the other hand, is very much in our face at all levels. Public education campaigns will therefore be combined with both waste reduction, resource recovery, and energy conservation programming used to augment one-another.

Finding ways to engage the public at their respective level of understanding will take time, and consumers will need to adapt at their own pace and in ways that are meaningful to them.

We are entering a time where a conservation culture must again manifest itself in everything we do, because it makes sense and is respectful to the very forces that create the resources we consume so readily. This does not mean we need to do without, just use what we have with more thought and consideration. As environmental engineer Betsy Agar notes, we need to ‘Live within limits, without limiting life.’”

7.1.2 Empowering the public to engage in the decision making process

Oxford County took the lead in Ontario by bravely committing to a zero waste future; however, our success will be built on the leadership and commitment of the public. The role of the County is to lead by example; to inspire; to remove doubt and to remove barriers.

However, the real change will begin only when individual people, groups and business owners engage and lead on their own terms. As author Margaret Mead states, “Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.”

7.2 Waste Management 101

For most of us, the extent of our thought process with respect to waste is a weekly visit to the curbside with waste and hopefully recyclable materials. Beyond that, we pay little attention to the end result of our refuse.

But lurking beyond the curbside is a complex (and expensive) web of recovery, transport, separation and ultimately, landfilling or repurposing of our waste materials. Each of us must become part of the solution, a curb-side solution that involves effective separation of waste resources and, more importantly, the reduction and elimination of waste through more mindful purchasing and handling of materials we purchase.

Concurrently, we must collectively work to develop a broader resource recovery process, whereby all unseparated resource material can be cost-effectively and efficiently captured at a final waste handling destination and avoid the unnecessary disposal of valuable resources.

Part of our zero waste strategy will involve the development of a meaningful and measurable public education campaign. Everyone needs to recognize the value of natural resources and be part of the circular process of managing these limited resources.

7.2.1 Establishing training opportunities

Oxford County is a big place with relatively few people. At 2,000 square kms and a population of 115,000, the number of people we need to reach is relatively small, but the distances are great. There is a tendency to focus public meetings and engagement sessions within the urban regions of the County. This is the path of least resistance when organizing events and at the same time unfair to those living in rural areas of the County.

An important element of our Future Oxford Community Sustainability Plan is that of an accessible Oxford, and for good reason. People essentially rely on personal vehicles to get around, yet not everyone owns one. There is not much point in clustering training sessions in the urban centres only, when many of the citizens we need to reach do not have access to a ride. Establishing training centres around the County should become part of our education strategy, and can be used to further promote a sustainable Oxford from perspectives other than just energy.

7.2.2 Establishing training centers in Oxford County Library branches

Yet another opportunity to combine energy and waste resource training can be found by leveraging existing facilities at County and City of Woodstock library locations. With a total of 15 branches located across all Oxford municipalities, we will work with both library systems to implement a three-fold public education program:

- Establish a self-guided tour of resource process, from mining through repurposing;
- Illustrate the challenges and limitations associated with our present resource handling habits and practices;
- Establish workshop training sessions, including staff and third party training professionals.

An early strategy to combine education and awareness should involve a well-planned training series, located in various communities around the County.

7.3 Education and Public Outreach platforms

Similar to our Knowledge Generation approach, our next year will involve continuous brainstorming to develop the most time and cost effective programs and venues.

7.3.1 Oxford County Waste Management Training Centre

New in 2018, this facility serves as an administration office for the Oxford County waste management facility and includes a progressive public training facility for public and other stakeholder education and awareness activities.

Constructed to Canada's Green Building Council Zero Energy building standard, this facility is net zero energy, powered entirely by solar photovoltaic energy and is net-metered with Hydro One.

This facility provides access to key elements of our 100% renewable energy and Zero waste programs, all in one location.

7.3.2 Internet & Social media

The Strategic Communications and Engagement Team at Oxford County manages the interface between County initiatives and the public. They do a great job of assisting each department with a vision, while managing a consistent and professional image. Social media and online forums are essential to reach the most number of people. These tools also help us establish a two-way communication link with customers to gauge success while driving adjustment to our approach.

7.3.3 Guest Speaker series

A common message can be strengthened by introducing a variety of different perspectives. There are many professionals or those with significant life experience willing to share their story, and each speaker will resonate with a different crowd. The Expo series has hosted a diverse set of professionals sharing their stories, each bringing with them a different personality and experience.

7.3.4 Regular workshops and Public Events around Oxford

This section will be used to manage and monitor planned workshops and events hosted around Oxford County. Unlike public events, these workshops will target specific topics based on the brainstorming sessions and public feedback. Public events can be a combination of several initiatives, such as workshops and guest speakers.

7.3.5 Future Oxford Sustainability Trailer

The vision for this rolling education center is to provide the public with a hands-on experience of renewable solar energy and energy storage. Originally designed and constructed by Arntjen Solar NA, and other partners, the trailer provides a convenient and safe means of engaging the public in a variety of educational themes, principally related to the Future Oxford Sustainability plan.

The trailer is often located around the County at public events, providing a source of off-grid electrical energy and a safe and dry place to meet with the public.

7.3.6 Zero Waste Event Planning Guide

Following the lead of a local community group known as Transition to Less Waste, the concept of planning and executing a waste free event became a reality through the annual Canterbury Folk Festival. To support other groups interested in making the transition to a zero waste event, the [Zero Waste Event Planning Guide](#) was published in late 2017.

Details of the guide can be viewed at <http://www.oxfordcounty.ca/Home/Newsroom/News-Details/ArticleId/13111/Yes-your-event-can-be-waste-free>

More information can be viewed at <http://www.futureoxford.ca/>

7.4 Friendly competitions

7.4.1 Business to Business

Leading businesses such as Toyota MMC and CAMI are raising the bar on what is possible with waste reduction and diversion. Beyond the good social citizen aspect of this accomplishment is a huge opportunity for cost reduction.

A friendly competition, with the goal of raising awareness of what top performer accomplishments could help local business owners become more aware of possible cost-reduction through better waste resource management practices.

7.4.2 Elementary and secondary school curriculum

Many schools now have environmental committees and programming; however, the waste management process content is often limited. A waste management competition among individual schools, combined with an education campaign will help raise awareness around waste reduction and resource recovery.

Chapter 8

Nurture Vertical and Horizontal Cooperation and Integration

Overview

Chapter 8 maps the Zero Waste target commitment of a diverse group of local stakeholders.

Key points

- A diverse set of stakeholders will ensure all aspects of the supply through the recycling process is monitored.
- All sectors of society generate, consume and discard resource material. Every sector must participate in the process of eliminating waste.
- Listed organizations, groups and communities are examples only and not intended as an all-inclusive representation.
- Further Vertical Cooperation
- Cultivate Horizontal Cooperation

Background

8.0 Operating Partnerships

This section refers to any person, group or business that may be affected by, or participate in, the process of a transition to zero waste.

Stakeholders are referenced in several sections of this plan; however, this chapter is designed to identify and all parties who may have a stake in the process, and outcomes, of our transition.

8.1 Municipalities within Oxford

Oxford County is comprised of eight municipalities in total, with the upper tier of the County of Oxford encapsulating all municipalities who lie within its boundaries. Oxford County is represented by the heads of council and other elected officials.

The eight municipalities that form Oxford County proper include five rural, primarily agriculture based economies and three urban centres. All eight municipalities support a transition to zero waste and continue to work together to develop a comprehensive zero waste plan.

Zero Waste Oxford is the primary community and political voice liaison to stakeholders noted within this chapter.

8.2 Municipalities outside of Oxford

Municipalities outside of Oxford essentially refer to upper or single tier governments within close proximity to Oxford. Middlesex, Elgin, Waterloo Region, Norfolk, Perth and Brant share a common border with Oxford; however, other municipalities across Ontario are considered stakeholders and partners (in so much as they are inclined) in the quest for a sustainable zero waste future.

To ensure a concentrated networking effort with other key municipalities can be reached, Oxford has established a closer working relationship with municipal leaders such as the City of San Francisco in California, U.S.A. and the City of Guelph in Ontario.

8.3 First Nations

First Nations communities are an important part of our national identity and play an increasingly important role in the development of resource stewardship. Although Oxford does not have the benefit of a formal First Nations presence, we will reach out in the hope that they will share in our journey and that we benefit from their traditional and spiritually guided role as environmental protectors.

8.4 Chambers of Commerce and Business Associations

Oxford County has the good fortune of having a very vibrant and engaged business community. We will continue to work closely with our local businesses, chambers and business associations, and value the important role they play within the community. Business and industry participation is a critical part of Oxford's economic and community success. Their successful transition to zero waste will be an important part of our collective success.

8.5 Not for Profit & Social

Not for profit and social agencies play a critical role in the transition to zero waste. Oxford County is fortunate to host a vibrant and effective variety of zero waste related committees, many of whom have operated within the county for decades.

8.6 Educational institutions

Academic institutions play a critical role in our public engagement and knowledge generation criterion. We will establish an ongoing partnership with this sector in pursuit of meaningful and effective training forums around Oxford.

8.7 Agricultural Groups

Oxford County is an agricultural hub. We have among the most fertile lands in Ontario, enjoy a significant share of the dairy output, and appreciate the spirit of innovation inherent in the farming community. We are particularly energized by the desire this creative group has to contribute to our successful outcome. Aside from the context of typical waste resource

management, waste created from livestock and produce creates the added benefit of renewable energy and a multitude technology applications that will advance our waste reduction and resource recovery goals.

8.7.1 Canada Farm Show

In 2018, Oxford County, Future Oxford and Canada's Farm show will join together to transition this international agricultural event to zero waste.

8.8 Builder's Associations

Construction and renovation processes create a significant challenge and opportunity for the recycling of building materials, both through new construction and that of renovations. It is important that we continue to work with the builder's association as a partner if we are to create a fully circular building material process.

8.9 Zero waste stakeholder groups in Oxford County

8.9.1 Oxford People against the Landfill (OPAL)

Founded in 2012, OPAL seeks to prevent the arrival of a private landfill in Oxford county; to promote public awareness of the negative impacts of opening a proposed landfill in Oxford County or elsewhere in Ontario; to secure public support and to make representations to government for this goal; to render assistance to the government by supplying information collected as a result of research; to coordinate with similar organizations, societies and individuals; to develop and foster community spirit as the OPAL Alliance; to gather and exchange ideas, data, and statistical and scientific information; and to assure protection and appreciation of the ecology of the natural environment by promoting waste management education. OPAL publishes a monthly magazine and more often on social media.

8.9.2 Oxford Coalition for Social Justice

Over two decades, the Oxford Coalition for Social Justice and its environmental wing has worked alone or with groups such as The Green Earth Campaign, Grass Roots, The Children's Water Festival, OPAL, etc., to promote environmental awareness; to reduce negative impacts on water, the environment and human health; to assist in arguing for improved health care and outcomes in Ontario; to sponsor a refugee family fleeing a death squad; to promote peace; and to educate the public on a vast gamut of economic, environmental, health, social justice and other issues. It is currently allied with groups fighting the proposed landfill while attending too much of the rest of its mandate. This leads it to active participation in local, media and governmental consultations on things as various as pollinator health, excess soils, the Environmental Bill of Rights, the Green Belt and associated protected zones, Anti-Slapp legislation and Bill 56 about reprocessing of aggregate in pits and quarries. On waste, it's said "There is no social

justice when you have no clean water.” The coalition opposes all new landfill applications for creation or expansion.

8.9.3 Oxford Environmental Action Committee (OEAC)

The OEAC was founded in 2014 to research and advocate for improvements to the environment in and beyond Oxford County in the interest of human and environmental health and safety. It has been especially attentive to issues related to the pollution of air, land and water by industrial processes and disposal; for instance, initiating much research, then discussion, with the Ministry of the Environment and Climate Change and Public Health staff (Oxford and Ontario) on suitable standards and understandings of data. It offers consultation with all levels of government with regards to responsible land use planning and waste related policies. Its presence at public forums is much appreciated by the public who look to the OEAC for good information, strong analysis and clear presentation of scientific knowledge in both technical and lay-persons’ language.

8.9.4 Green Watch

Green Watch was created in Zorra Township by residents whose health, property rights, ability to carry on their work and personal enjoyment have seen the impact of aggregate and ancillary operations around them. Seeking advice and expertise from Gravel Watch, a provincial association, Green Watch has simultaneously shared information and experience with other groups and individuals opposed to waste and destruction inside Oxford County and beyond. It is known for its use of astonishing images, especially unaltered photos, to illustrate its point that without action by various levels of government, there are “No Guardians at the Gate.” Simultaneously, Green Watch acts as a watch-dog on developments and as a disseminator of information to the public.

8.9.5 Ingersoll District Nature Club

Ingersoll District Nature Club manages the Lawson Tract, a section of Carolinian forest with tributary streams to the Thames River, ponds and rare animal life. Additionally, it sponsors a wide variety of educational opportunities in various indoor or outdoor venues for members and the public such as interpretive nature hikes, bird counts and inventories, pollinator awareness workshops for students and adults, nature photo contests, presentations by scientists active in field and laboratory studies, controlled encounters with raptors and reptiles, bat-friendly or skunk-sympathy sessions, and more. Its interests include flora, fauna and the benefits of nature to our quality of life and life-span. It is active too as a member or partner with other environmental groups and through cross-memberships.

8.9.6 Transition to Less Waste

Transition to Less Waste's name says it all, but underestimates the impact of this group on altering community understanding, individual and corporate habits, and on local perception of a throw-away society. Notably, it has moved a major music festival from 14 cubic metre bins of waste after food, liquid refreshments and shopping over a span on 3 days, while music played, to a mere few bags of waste by ensuring that reusable was favoured over recyclable, and that recycling replaced discarding. It has harnessed pedal-power and volunteer dish-pan hands to achieve these goals at multiple other events and now works to insert these ideas into the planning and permission for social and cultural events around Oxford County. In addition to frequent online messaging about conservation and preservation of resources, avoidance of waste or fossil fuels, Transition To Less Waste has engaged in demonstration gardens and shared food cropping; research of passive housing, including tours of some "earthships"; and work with municipalities at promoting their principles and consultations with individuals and organizations seeking to access its knowledge. Similarly, it has offered, through a Joint Community Project with the Ministry of Colleges and Training, transitional employment and training to people re-entering the workforce with new or improved skill sets and increased confidence.

8.9.7 Tillsonburg Community Garden Group

The Tillsonburg Community Garden was created in 2011 as an initiative of the Tillsonburg Resource Network. It provides garden plots, compost and water to up to 35 individuals, families or groups who can grow their own vegetables, herbs, fruit and flowers. The use of compost at the site reduces organic waste while enhancing food security. Similarly, in Ingersoll, the Ingersoll Christian Reformed Church and the Ingersoll and District Horticultural Society manage community gardens on a similar basis, providing information on good garden practices including composting, mulching and soil fertility. Woodstock's Community gardens participate in similar activities with environmental and energy goals including the following: to improve the quality of life; beautify neighbourhoods and foster spirit and security in them; reduce family food budgets; conserve resources; preserve and extend green space on public, non-profit's and private land with gardens, shrubs and trees, which in turn reduce city heat from streets and parking lots and result in energy savings.

8.9.8 Zero Waste Oxford

Zero Waste Oxford is an action team within the Future Oxford Partnership. This partnership was created through the consultations of the Future Oxford Community Sustainability Plan. It is a part of the environmental pillar encompassing prevention and restoration work; coordinating, recording and celebrating movements to zero waste as part of sustainability; planning for waste reduction, resource recovery, a circular and revitalized economy through local initiatives as well as cooperative and/or pilot projects with other non-profits, private industry, municipalities, provincial and the federal governments; networking with other groups in zero waste and/or environmental research

and action; researching local, regional, provincial, national and international exemplars of zero waste initiatives; and pioneering hierarchies, analytics and methodologies which will result in redefinitions of resources, a cessation of wasteful activities and a cultural shift.

8.9.9 Fusion Centre

The Fusion Youth Centre demonstrates environmental leadership in electronics use, reuse and recycling while training young people in sustainable lifestyles through art, music, cooking, sport, and technology. It complements public funding with income from electronics recycling and entertainment while reducing public expenses such as the results of vandalism when young people unleash energies in non-productive and/or destructive ways. Through Fusion, youth participate in the Youth Entrepreneurship Design Jam, an exciting and energetic event where young people, entrepreneurs, service providers, and community members can come together to brainstorm ideas on how to support more young people in starting and growing businesses, facilitating a design process to come up with ideas that tackle some of the challenges and barriers of young entrepreneurs facing an uncertain economic or environmental future.

8.9.10 Woodstock Environmental Advisory Committee (WEAC)

Reporting to and advising Woodstock City Council, WEAC is comprised of a selection of volunteers who are committed to improving the environmental, ecological and social fabric of the City of Woodstock. The committee's objective is to advise city council on matters of environmental concern and to raise environmental awareness through educational initiatives.

8.9.11 Trashapalooza

Trashapalooza, aka Reuseapaloozaha, is a travelling event currently reaching four communities annually in Oxford County, inviting the public to refrain from trashing their unused but reusable, recyclable, up-sellable materials through a collective community swap meet where all offerings are brought in by members of the public and given freely to others. In addition, there is education and information offered about programs to reduce waste and produce social good from discarded goods through non-profits such as Diabetes Clothesline, Goodwill, Habitat for Humanity's ReStore, The Salvation Army, Feed the Hungry Children, etc., who receive all remaining goods at the end of each one-day event. This is volunteer-driven and helps educate fellow residents while negotiating further, recurring and/or permanent waste reduction initiatives with organizations and municipalities.

8.9.12 Community Liaison Committee

The Community Liaison Committee was struck as a means for Walker Industries to engage in dialogue with the community which largely and loudly rejects the outdated linear model it proposes for the Southwestern Landfill Proposal. Members of the

community volunteer on this committee to offer alternatives, to promote their and the community's view and to mediate between the private company and the public.

8.9.13 Thames River Cleanup

Thames River Clean-Up is an annual event which seeks to restore the Thames River by removing solid waste from its banks (inevitably to reach the watercourse and head downstream), the tributary creeks and the river itself. Volunteer adults, youth and students of schools assist in the removal of unnatural materials. The webpage wryly notes the "clean-up of the trail Sept 9th, 2016, including a number of mattresses donated to us in our parking lot." The Thames River Clean-Up provides a hands-on, visual and virtual education in waste reduction. It works in coordination with many other groups including the Upper Thames Conservations Authority and multiple trails associations all of whom participate in waste reduction programs.

8.10 Recycling Business and Corporations in Oxford County

- 5.9.1 Greenholm farms (bio digester)
- 5.9.2 Faromor
- 5.9.3 Tree Cycle Wood Products
- 5.9.4 Shamrock Scrap metal and electronics Recycling
- 5.9.5 Kitching scrap metals
- 5.9.6 Shawn Butterworth recycling

8.11 Other Resources

The Canadian Environmental Law Association (CELA) is engaged in Oxford's efforts to become zero waste through its promotion of ecologically sound laws and regulations, their willingness to join battle against environmentally destruction practices, as well as their legal, moral and financial support of allies seeking to achieve zero waste in Oxford.

Chapter 9

Promote Knowledge Generation and Capacity Building

Generate and Disseminate Specific knowledge

Make Knowledge and Data Accessible

Promote Capacity Building and Training

Overview

Chapter 9 surveys the activities, projects and research partnerships that generate further knowledge on waste reduction and resource recovery development by the local government.

Key points

- Demonstration projects are critical to the success and expedience of our transition to zero waste.
- Innovation, applied research and education must be a priority.
- Generate and Disseminate Specific knowledge
- Make Knowledge and Data Accessible
- Promote Capacity Building and Training

Background

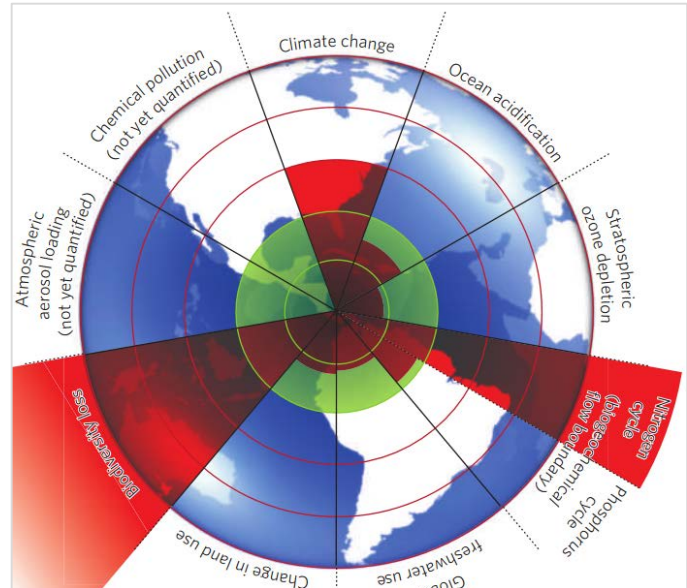
9.1 Charting a path to a Circular Economy

The principle theme of the Future Oxford Community Sustainability Plan suggests that a vibrant **economy** supports a strong **community** that will thrive in a clean **environment**, and that each of these pillars are interdependent and vital to sustainability.

In his research on sustainable development and planetary boundaries, [Johan Rockström](#) discusses a series of critical threshold crossings that need to be avoided if we are to meet the needs of present and future generations. Several thresholds are thought to have been already crossed, with others approaching their own respective limits.

The concept of natural resource mining, processing and recovery is nothing new; however, the past several decades of human consumption and waste cannot be sustained.

The Knowledge Generation section is intended to create a series of initiatives and demonstration projects with the goal of enhancing the knowledge, awareness, and the active commitment necessary among Oxford's residents and businesses to achieve zero waste.



Nine planetary boundaries. Source: Johan Rockström et al., 2009.

A fundamental change in culture – a return to common sense in the way we view, process and utilize our limited resources-- is the primary objective of this chapter.

9.2 Public education and awareness

Public education and awareness has arguably never been more important. If we are to affect change that will salvage our environment and allow us to transition to a sustainable economy, we will need to work together as we begin to understand the challenges and solutions that lie ahead of us.

In March of 2018, Oxford County Public Works launched a series of council and public information sessions seeking to both educate and garner feedback on our Zero waste progress to date. Details can be found through the *Speak Up Oxford* Internet location at:

<http://www.oxfordcounty.ca/Your-Government/Speak-up-Oxford/Campaign-Details/ArticleId/13603/The-future-of-waste-management>

9.3 Salford Landfill Zero Waste and Net Zero Energy Facility

Commissioned in June 2018, the Oxford County landfill site located in Salford is an example of energy and waste resource management merging into a multi-faceted education and demonstration resource.

The replacement of the waste management administration building to that of a net zero energy building creates the opportunity to showcase net zero energy concepts through building design. The building hosts a small training center, providing a venue for the public to view modern

building concepts and the inherent energy benefits they produce. This same space is utilized for training of the emerging circular economy through waste reduction and resource recovery methods and technology applications.

Oxford's waste management program is a provincial leader in recycling and waste diversion performance; this facility will be an ideal location to demonstrate best practices in waste resource management in an energy efficient setting.

A time-lapse of this Green Building Council Zero energy building and additional public education content can be view at the Future Oxford Internet location. <http://www.futureoxford.ca/>

9.4 Demonstration Projects

9.4.1 Projects

Resource Recovery Project (Zero Waste)

Energy and waste are emerging as two sides of a coin and can become enablers for one another. Organic waste is a proven resource for the generation of energy from a variety of methods, with anaerobic digestion appearing to be the most environmentally favourable. Our Zero Waste and 100%RE goals will join under this project as we seek ways to leverage organic waste for renewable energy generation.

Within this process lies the desire to further capture metals and plastics currently destined for disposal in landfill. Success will require processing of the waste received by Salford for disposal. Technologies will be initially screened to ensure they are capable of delivering our desired outcomes. The screened group of technologies will be assessed in detail and partnerships will be explored to determine the best course of action for Oxford County. This project is critical to achieving the extension of Salford's lifespan to 2100. The challenge will be to identify a technology that meets our needs, that is module in design and can be scaled up and down to the needs of Oxford County within appropriate timeframes.

Waste Reduction Projects

Under the umbrella of the Waste Reduction Project, the Zero Waste Plan will include a series of projects designed to successfully demonstrate how our community can reduce the waste we produce. Working with and through existing partners in our community, we will work to expand our community's expectations for waste reduction information, demonstration and measurable efforts.

Water/Wastewater Treatment Plant (WWTP) Renewable Natural Gas (RNG)

The WWTP plants in Oxford may play a role in research RNG opportunities that may exist. Scrubbing of methane generated from the WWTP process may be a source of supply for injection into the existing the natural gas distribution network. Technologies that enhance digestion capacity may well lead to an ability to process some of the organic material captured in the resource recovery project in existing anaerobic digesters at our WWTPs.

9.4.2 Buildings

Net Zero Community (energy & solid waste)

Individual retrofit and new construction is important; however, most new development is based on larger scale planning. The objective of this program is to identify a small area of the County (perhaps up to 100 residential/commercial type buildings) and design the full development to meet Net Zero energy and Zero Waste outcomes.

9.4.3 Mobility and transporting of waste resources

Municipal Fleet Conversion to Alternate Fuels (County)

Municipal fleet conversion to alternate fuel presents a huge opportunity for cost savings, carbon reduction and demonstrated leadership. Oxford County vehicles typically operate within a known geographic territory. They often stop for inspection and other work routines, providing ample time and opportunity for recharging or refilling, as in the case of battery electric vehicles, hydrogen and/or renewable natural gas powered vehicles. We will participate in the evolution of renewable energy transportation technologies through the conversion of our own fleet vehicles through the Oxford Green Fleet Plan.

Power to Gas

Bio-methane is now being generated from the waste of beef feedlots for the purpose of generating electricity and will eventually serve as a renewable natural gas (RNG) supply for injection into the existing natural gas distribution network, and by extension the CNG fueling station now operational in Oxford County. The outcome of this project will allow RNG generation and the fueling of vehicles utilizing renewable natural gas. Further opportunities arise with the RNG polishing process. Oxford County will work with government, private sector and NGO groups to further develop power to gas and the repurposing of Methane. This project is but one example of things to come on the bio methane and power-to-gas technology front.

9.5 Oxford Sustainability Cluster

Research and innovation will form an important part of our zero waste transition. We are fortunate to have established working relationships with respected Universities such as York and Ryerson, and agencies such as the Canadian Urban Transit Research & Innovation

Consortium (CUTRIC). Through our renewable energy activities, these partnerships have helped identify this opportunity and will continue to help support and guide us to success.

If we are to lead Oxford, and indeed Ontario, toward a zero waste economy, establishing a culture of innovation will be critical. New technologies and applications seem to appear every day. Oxford needs a space where these new ideas can be presented, fostered and implemented on a demonstration basis, utilizing the expertise of our academic partners through to the production and applications professionals we now have operating in Oxford.

On that note, the innovators now operating in Oxford deserve copious recognition. From automotive manufacturing through to high tech farming, Oxford is very fortunate to play host to those who can “get the job done.”.

9.6 Training Centres in Oxford

Consideration should be given to the establishment of ad hoc training centres around Oxford. Special meetings, guest speakers and public education sessions will take place at these agreed locations. The potential role of active demonstration/public training in commercial areas should also be explored (example: restaurant waste reduction and recovery program).

9.7 Monitoring & evaluation of knowledge generation

Demonstration projects are expected to produce results, but how will we measure success. This section will be utilized to gauge success and to harvest ideas for improvement.

Chapter 10

Engage in Networks Overview

Oxford County has already been a tremendous benefactor of relationships with many friends and partners (new and old) from around the world to our own backyard.

The willingness of these many partners to share their knowledge, innovation and ideas has been humbling and is genuinely appreciated.

Key points

- Along with our many local partners, we will continue to work with academic and international networks
- Our progress and accomplishments will be shared with our networking community to ensure progress continues at a rapid pace
- Oxford County hosts a wealth of private environmental and waste reduction committees who will ultimately drive the necessary change in a zero waste community
- Form and Engage in Local and Regional Networks
- Participate in International Networks

Background

Oxford County is part of a greater network of municipalities, comprises part of the Province of Ontario and contributes significantly to the economic output of Canada. Networking is an important part of the education and implementation process.

We view participation in various and diverse networks of professionals as a privilege. Our contacts through networking create academic research hubs, government funding and demonstration opportunities and a wealth of other outcomes that could not otherwise be achieved.

10.1 Transportation

The migration from a fossil fuel powered transportation system to that of zero carbon for the purpose of transporting waste resources is one of our greatest challenges. The hauling of resource material (from mining through to disposal or diversion) forms a significant portion of the 5% CO₂ emission component of our overall GHG content.

There will always be a need to transport product, regardless of how successful our waste reduction and resource recovery accomplishments become. This is yet another example of how our renewable energy and zero waste goals align and support one another. Indeed, the quest to reduce waste haulage while identifying solutions to reduce carbon emissions through transportation provides further opportunity and need for further development of renewable energy means of transportation.

10.1.1 CUTRIC

The Canadian Urban Transit Research and Innovation Consortium board was formed in early 2016 and both the County of Oxford and City of Woodstock became founding members. A national organization, CUTRIC has a mandate to identify alternative energy sources for municipal transit.

We are proud to both support and be part of CUTRIC and have great expectations under the direction and guidance of Director Dr. Josipa Petronic.

10.2 Waste Management Planning

Government, sector specific and public entities will all form part of the planning process.

10.2.1 Oxford Community Waste Reduction committees

Section 5.9 of the Stakeholder Engagement chapter of this plan highlights the depth of public commitment evident in Oxford County.

This cross-sectional and diverse group of volunteer agencies is represented by residents and business owners with a passion for better waste management and will provide a significant support as we establish a broader network outside of Oxford County.

10.2.2 Ontario Waste Management Association (OWMA)

The OWMA works on behalf of members to support and promote the waste and resource management industry. They seek to work with government, regulators, members, and other interested parties to bring about a sustainable system of waste and resource management for the Ontario.

The waste sector provides essential services to everyday living. The organizations that make up the sector collect the 12.5 million tonnes of waste produced annually by households and businesses across the province and seek to treat it in an environmentally and economical responsible manner.

The waste management sector is in the process of a monumental change. Previously materials the sector managed were regarded only suitable for disposal. This is no longer the case. Waste collected is valued as a source of raw materials and energy that can be rerouted into Ontario's economy after proper processing. Organizations in the sector are already spending millions to pursue these goals but innovation and technological advancement can only achieve so much.

The OWMA is at the forefront of debates about driving greater waste diversion and treating waste as a resource. We are playing an important vital role in driving higher standards within the sector.

10.2.3 Municipal Waste Association (MWA)

The Municipal Waste Association, formerly known as the Association of Municipal Recycling Coordinators, is an incorporated not-for-profit organization formed in 1987 by Ontario municipal waste management professionals to facilitate the sharing of municipal waste reduction and recycling information and experience. The MWA keeps municipal waste management program operators informed, works with industry, undertakes research, organizes workshops and provides various specialized services.

10.2.4 Solid Waste Association of North America (SWANA)

The Solid Waste Association of North America (SWANA) is an organization of more than 8,400 public and private sector professionals committed to advancing from solid waste management to resource management through their shared emphasis on education, advocacy and research. For more than 50 years, SWANA has been the leading association in the solid waste management field. SWANA serves industry professionals through technical conferences, certifications, publications and a large offering of technical training courses.

10.2.5 Composting Council of Canada (CCC)

The Compost Council of Canada is a national non-profit, member-driven organization with a charter to advocate and advance organics residuals recycling and compost use. It serves as the central resource and network for the compost industry in Canada and, through its members, contributes to the environmental sustainability of the communities in which they operate.

10.2.6 Recycling Council of Ontario (RCO)

RCO is a not-for-profit membership-based organization involved in policy, education, and project work around the issues of consumption, waste generation, reduction and diversion, and recycling.

RCO believes that society must minimize its impact on the environment by eliminating waste. To that end, their mission is to inform and educate all members of society about the generation of waste, the avoidance of waste, the more efficient use of resources and the benefits and/or consequences of these activities.

10.2.7 Association of Municipalities of Ontario (AMO)

The mandate of the organization is to support and enhance strong and effective municipal government in Ontario. It promotes the value of the municipal level of government as a vital and essential component of Ontario and Canada's political system.

Of particular importance is the Memorandum of Understanding (MOU) between AMO and the Province. The MOU provides the opportunity for municipal input and reaction to

provincial policy ideas (pre-consultation) so that they are fully informed as part of any provincial policy making process. The MOU also includes a Protocol that obligates the Province to consult with AMO and municipalities on matters that are of a federal-provincial nature that could affect municipal services and finances. The Protocol also sets out the Province's commitment to pursue a federal-provincial-municipal framework where municipalities have a seat at the federal-provincial table.”

AMO's advocacy focuses on ensuring that provincial policies and programs respect municipal authority. AMO develops a variety of advocacy positions on all matters that impact Ontario's municipalities. These positions are in the form of backgrounders, policy updates, reports and submissions and more to inform our membership of current issues affecting the municipal sector.

10.2.8 Zero Waste Oxford

The cornerstone committee of our Zero Waste transition, ZWO was established under the environmental pillar of our Future Oxford Sustainability plan. ZWO is comprised of roughly a dozen community waste reduction/diversion experts with diverse backgrounds.

10.2.9 San Francisco Zero Waste

The San Francisco Department of the Environment (SF Environment) creates visionary policies and innovative programs that promote social equity, protect human health, and lead the way toward a sustainable future. It puts its mission into action by mobilizing communities and providing the resources needed to safeguard homes, the city, and ultimately the planet.

In 2010, San Francisco exceeded its goal to divert 75 percent of materials away from landfill. Continued participation in San Francisco's recycling and composting programs helps the City reach zero waste.

10.2.10 City of Guelph Waste Management

Like Oxford County, the City of Guelph is a leader in municipal waste reduction and diversion. Oxford has begun to develop a relationship with Guelph with the intent that these two leading municipalities work together to further expand our waste reduction efforts and successes.

Advancing the
***Future*Oxford**
Community Sustainability Plan

Contact for more information

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