

Durham Region: How to Achieve Zero Waste in a Municipal Setting

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Abstract : The Regional Municipality of Durham is the upper level of a two-tier municipal and regional structure comprised of eight lower-tier municipalities. With a population of 655,000 in both urban and rural settings, the Region is approximately 2,537 square kilometers neighboring the City of Toronto, Ontario Canada to the east. The Region has been focused on diverting waste from disposal since the development of its Long Term Waste Management Strategy Plan for 2000-2020. With a 54 percent solid waste diversion rate, the focus now is on achieving 70 percent diversion on the path to zero waste using local waste management options whenever feasible. The Region has an Integrated Waste Management System that consists of a weekly curbside collection of recyclable printed paper and packaging and source separated organics; a seasonal collection of leaf and yard waste; a bi-weekly collection of residual garbage; and twice annual collection of intact, sealed household batteries. The Region also maintains three Waste Management Facilities for residential drop-off of household hazardous waste, polystyrene, construction and demolition debris and electronics. Special collection events are scheduled in the spring, summer and fall months for reusable items, household hazardous waste, and electronics. The Region is in the final commissioning stages of an energy from the waste facility for residual waste disposal that will recover energy from non-recyclable wastes. This facility is state of the art and is equipped for installation of carbon capture technology in the future. Despite all of these diversion programs and efforts, there is still room for improvement. Recent residential waste studies revealed that over 50% of the residual waste placed at the curb that is destined for incineration could be recycled. To move towards a zero waste community, the Region is looking to more advanced technologies for extracting the maximum recycling value from residential waste. Plans are underway to develop a pre-sort facility to remove organics and recyclables from the residual waste stream, including the growing multi-residential sector. Organics would then be treated anaerobically to generate biogas and fertilizer products for beneficial use within the Region. This project could increase the Region's diversion rate beyond 70 percent and enhance the Region's climate change mitigation goals. Zero waste is an ambitious goal in a changing regulatory and economic environment. Decision makers must be willing to consider new and emerging technologies and embrace change to succeed.

Keywords : municipal waste, residential, waste diversion, zero waste

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