

# **Managing Municipal Wastes: The Potential for Carbon Sinks – The City of Edmonton and the Edmonton Integrated Waste Management System**

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Municipalities process large volumes of organic wastes that can potentially emit greenhouse gases (e.g. CO<sub>2</sub>, CH<sub>4</sub> and NO<sub>2</sub>). The sources of municipal organic wastes and their possible fate will be presented and possible solutions leading to reduction of GHG emission and enhanced carbon retention will be presented. The City of Edmonton will be used as an example with data from the Waste Management Branch, responsible for the collection and processing of municipal solid waste (MSW) generated by all single family and multifamily households. The Branch is recognized as a national leader in municipal waste management in Canada that includes a materials recovery facility (MRF) for recyclables, composting facility for compostables and sanitary landfill with landfill gas collection for residuals. The main purpose of the City's program is to reduce waste quantities to landfill and in total the City is diverting more than 65% of the MSW from landfill. This paper will examine the GHG emission reductions resulting from activities at the Edmonton Waste Management Centre in terms of methane generation, energy consumption, carbon sequestration and planned future activities which look at the thermal treatment of residues from the MRF and composter.