

Landfill (LF) Carbon Storage & Potential Life Cycle Carbon Emissions from Waste-to-Energy (WTE) & Landfill Disposal Facilities

MSW Material	Carbon Content (%)	Kilograms (kg) Carbon per Metric Ton	Landfill Carbon Storage (%)	Potential CO ₂ & CH ₄ Life Cycle Emissions (kg CO ₂ e per Metric Ton)		LF Methane (CH ₄) Capture for Breakeven Emissions vs. WTE (%)
				WTE	LF	
Film Plastic	66%	660	100%	2,420	0	0%
Newspaper	46	460	81	1,687	1,793	<10
C&D Wood	42	420	>80	1,540	1,637	<10
Leaves	34	340	77	1,247	1,604	20
Evergreen Trimmings	55	550	72	2,017	3,159	35
Yard Debris	19	190	60	697	1,559	55
Cardboard	45	450	55	1,650	4,154	60
Grass	12	120	25	440	1,846	75
Food Scraps	15	150	15	550	2,615	80

Sources: De La Cruz, F. B., Barlaz, M. A., 2010. Estimation of waste component-specific landfill decay rates using laboratory-scale decomposition data. *Environmental Science & Technology* 44 (12): 4722-4728; Morris, J., 2010. Bury or burn North American MSW? LCAs provide answers for climate impacts & carbon neutral power potential. *Environmental Science & Technology* 44 (20): 7944-7949; Wang, X., Padgett, J. M., De la Cruz, F. B., Barlaz, M. B., 2011. Wood biodegradation in laboratory-scale landfills. *Environmental Science & Technology* 45: 6864-6871, and Morris, J., 2017. Recycle, bury, or burn wood waste biomass? LCA answer depends on carbon accounting, emissions controls, displaced fuels, and impact costs. *Journal of Industrial Ecology*, 21 (4) 844-856.