

- 4 biggest components are paper, paperboard, food scraps, yard trimmings, plastics

Solid Waste:

- MSW does not account for waste generated upstream before products reach us
- Solid waste: all discarded material in solid, liquid, semisolid, or contained gaseous form

Life Cycle Assessment:

- LCA: Accounting for environmental impacts of all steps involved in making, distributing, using, and ultimately disposing of a product
 - Impacts of producing plastic bottles include air pollution, water pollution, and environmental health effects

What happens when waste is dumped:

- Unregulated dumps: garbage heaped in uncovered openly accessible piles
- Decomposing waste attracts vermin, and leaks polluting gases and liquids

Effects of Unregulated Dumps:

- 1) Polluting Gasses:
 - Bacterial Decomposition: Results in the release of CO₂
 - Occurs in the PRESENCE of Oxygen
 - Volatilization: Results in the release of Methane
 - Occurs in the ABSENCE of Oxygen
 - Chemical Reactions: Results in release of VOCs
 - Either on own or w/ CO₂, methane, or other compound
- 2) Leachate:
 - Leachate: foul-smelling soupy liquid, forms when rainwater or groundwater mixes with decomposing waste
 - Include harmful substances incl ammonia, heavy metals, + dioxins
 - Can carry pathogens
 - Can form harmful plumes of liquid that can seep into soil and drinking water and harm humans, plants, and wildlife
- 3) Ocean Dumping:
 - Industrial waste, sewage sludge and dredge spoils are dropped into ocean
 - Can cause eutrophication or dead zones
 - Often contain toxic heavy metals like mercury or lead
 - Can accumulate in fish, which may then be consumed by humans

Waste Trade:

- 121 countries (not US) sign Basel Convention: international agreement restricting movement of hazardous waste from developed to non developed countries
 - Many hazardous materials shipped to developing countries incl e-waste

Waste Management Methods:

- 1) Isolation: segregation of waste from significant contact with humans or wider environment
 - Dominant disposal strategy in US
 - Common isolation technology is sanitary landfill
 - Daily waste is spread on top, then covered with a layer of clay, and then dirt to prevent blowing away or animal attraction