Trash to Treasure Investments

Waste Management Services

April 2024

STEER PARTNERS

Municipal Solid Waste Management Market

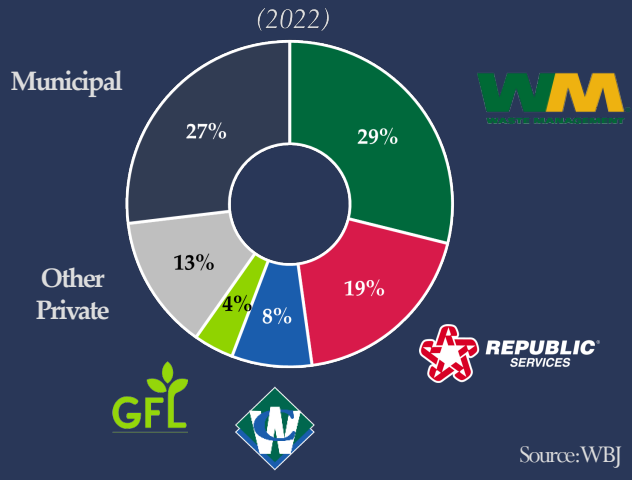
While the traditional landfill waste disposal and management industry is largely consolidated and has little room for new entrants, the services industries for these landfills offer investors higher growth prospects. Rebounding commercial and industrial activity alongside faltering waste alternatives has revived demand for domestic waste management services to pre-pandemic levels. Stringent regulations, limited landfill capacity, and the persistent shift towards more sustainable practices are driving growth in the industry, fueled by cutting-edge technologies and new waste management techniques.

The landfill industry itself is likely to experience only slightly positive growth of **~1-3% p.a.** as the industry continues to consolidate.

Industry leaders WM and Republic Services collectively managed **~48% of all landfill volume** in the U.S. in 2022. Meanwhile, local municipalities managed only **~27% of all national landfill volume.**

U.S. MSW Landfill Volume Landscape

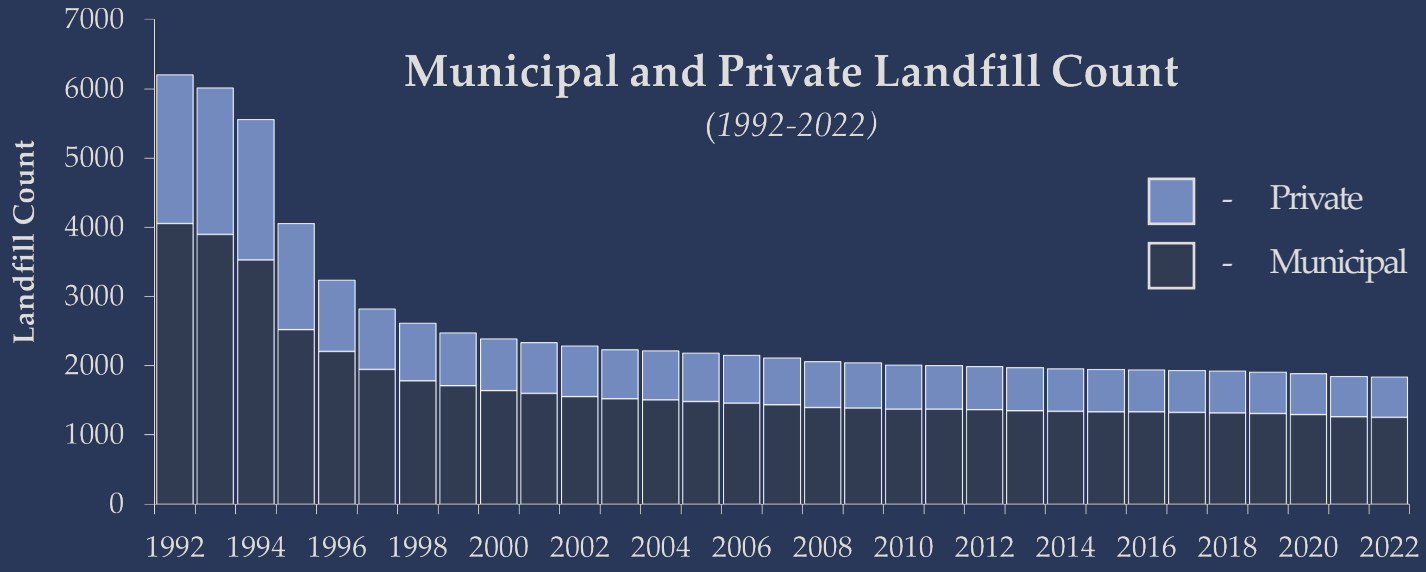
(2022)



Source: WBJ

Municipal and Private Landfill Count

(1992-2022)



Source: WBJ

Current State of Landfills and Waste Alternatives

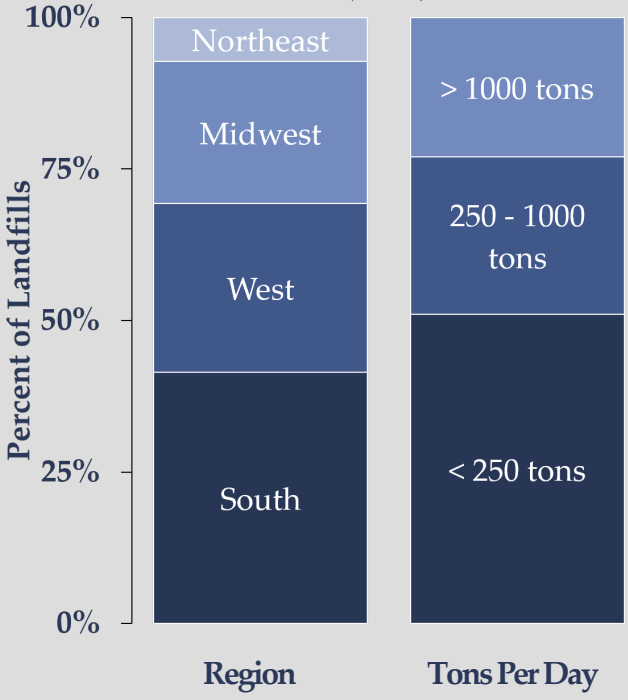
MSW Landfill Dynamics

Landfill counts have steadily decreased over the last ~20 years, dropping from ~2200 in 2003 to ~1700 in 2023. Most of this decline can be attributed to the closure of local, town dumps and the difficulty behind permitting new landfill openings.

While landfill counts have declined, **landfill capacity has grown ~2% p.a. over the last decade** to meet waste volume demand, which grew ~3% p.a. over the same period. **Capacity growth is driven primarily by large, regional landfills implementing operational efficiencies and expanding existing acreage.**

U.S. Operating Landfill Landscape

(2023)



Source: STEER Partners Research & Analysis, WBJ

MSW Alternatives

Recycling:

Large capital costs of recycling and **public concerns regarding contaminants of recycled materials** have kept recycling rates flat since 2010. Though incoming technology may be able to improve recycling efficiency, **behavioral tendencies** and **lack of reliable recycling information from municipalities** will keep recycling rates level.

Waste-to-energy:

These facilities burn solid waste to produce energy in the form of steam. Major barriers such as **high costs for disposal** and **public concerns from potential emissions** has caused usage to dwindle in recent years.

Waste Exports:

After China's implementation of the **National Sword policy in 2018,** U.S. waste exports dropped **~29% from '17-'18** and have remained stable since, signaling other countries' unwillingness to import additional waste.

Upcoming Regulatory Changes

The EPA recently announced its 2024-2027 National Enforcement and Compliance Initiatives, which included two goals directly related to the waste management industry:

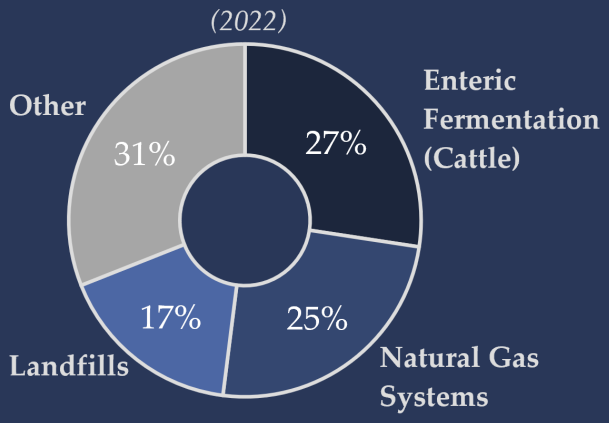
Reduce Methane Emissions Levels

Municipal Solid Waste (MSW) in landfills is the third-largest human-related emitter of methane gas in the United States. The EPA noted that it found "widespread noncompliance" in this sector, and it is a top priority in the fight against climate change.

Reduce PFAS Contamination

Per- and Poly-fluoroalkyl substances, also known as "forever chemicals" can leach into landfill groundwater and contaminate residential drinking water.

U.S. Methane Emissions



Source: STEER Partners Research & Analysis, EPA

The EPA announced that it will penalize manufacturers and landfills that release PFAS into the environment against EPA regulations. It is also adding certain PFAS chemicals to the list of hazardous materials, subjecting them to stronger regulation.

Impact on Waste Management

Waste management experts expect to see tightening of regulations over the next couple of years, particularly around **methane and PFAS compliance**. Landfill managers will need to further develop their **methane capture** processes and turn to **leachate management providers** to more effectively curb the release of PFAS from their landfills.

Most waste management companies, including the leading competitors WM and Republic Services have set goals to reduce emissions within the next decade. The EPA has already proposed a rule that would designate nine PFAS chemicals as **hazardous constituents** (the first step toward a **hazardous waste** classification and a higher level of regulation).

Attractive Investment Frontiers

Given the traditional waste management industry's humble growth prospects, STEER recommends investors focus on areas adjacent to the industry that are more likely to experience outsized growth over the next 5 years.

Methane Capture

Landfills will become a focal point for methane capture regulation as the push for emissions reductions gets stronger. Moving forward, landfill managers will either invest heavily in their own infrastructure or rely upon third parties to reduce their methane emissions.

Investors can strategically position themselves in the landfill methane capture market through acquisition of a methane piping and processing service provider, critical players in the methane capture process.

Sample Transactions		
Turnbridge Capital	▶	LoCi Controls, Inc.
Vision Ridge Partners	▶	Vision RNG

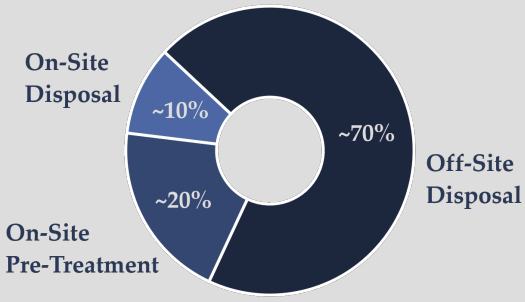
Leachate Management

Leachate management is the process of treating / disposing of contaminated water that flows through landfill waste, a common cause of PFAS dispersion.

The market for onsite leachate pre-treatment is expected to grow **~8-12% p.a. through 2028**. Early investments in **onsite** leachate management providers offer large return potential as adoption is still low.

Sample Transactions		
Kinderhook Industries	▶	Ironclad Environmental Solutions
I Squared Capital	▶	SRE Environmental

U.S. Leachate Management Methods
(2023)



Source: STEER Partners Research & Analysis

Sustainability Advisory

Expanding sustainable waste management practices give sustainability compliance businesses an opportunity to grow across sectors.

As EPA regulations for emissions and waste production strengthen, manufacturers and landfill managers will be more likely to turn to sustainability advisors to remain in compliance.

Sustainability Goals in Waste

Waste Management	Reduce GHG emissions 42% by 2031
Republic Services	Reduce GHG emissions 35% by 2030
Waste Connections	Reduce GHG emissions 30% by 2033
GFL	Reduce GHG emissions 15% by 2030

Sample Transactions		
Ridgemont Equity Partners	▶	Sonoco Sustainability Solutions
Arcapita	▶	New Market Waste Solutions

Waste Hauling

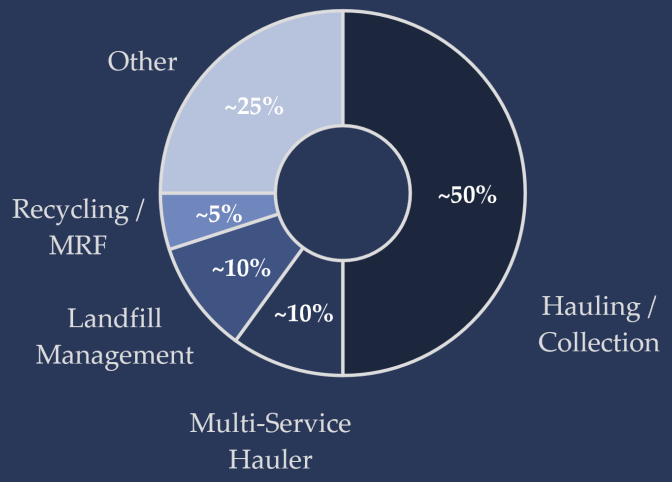
Hauling services have seen the most M&A activity in recent years out of all services as sophisticated players can produce large and immediate value through data-driven insights such as route optimization, "just-in-time" collection, and waste stream tracking.

The quantity of recent deals in the space underscore trends towards consolidation.

Sample Transactions		
	RF Investment Partners ▶	Ally Waste
	Kinderhook Industries ▶	CARDS Holdings LLC

Transactions by Service Line

(U.S., 2021-2024 YTD, Based on 400+ Transactions)



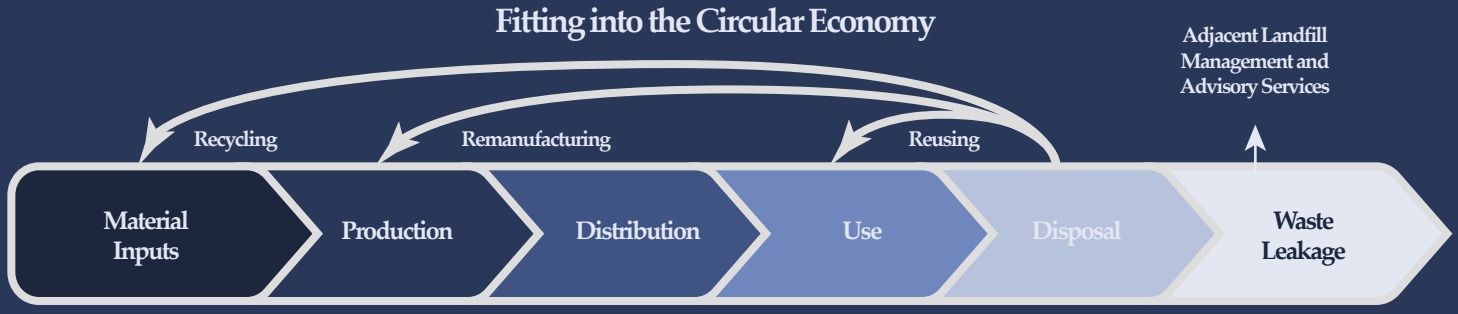
Source: TM Capital, WasteDive

Industrial Material Recovery

Rising construction and manufacturing activity across sectors will increase waste-by-product production. Industrial material recovery facilities (MRFs) can repurpose waste products for profit by selling across sectors. Consequently, industrial MRFs have become prominent acquisition targets, having the most notable synergies with manufacturing and industrial facilities.

Sample Transactions				
Macquarie ▶	DTG Recycling Group	Closed Loop Partners ▶	Midwest Fiber Recycling

Fitting into the Circular Economy

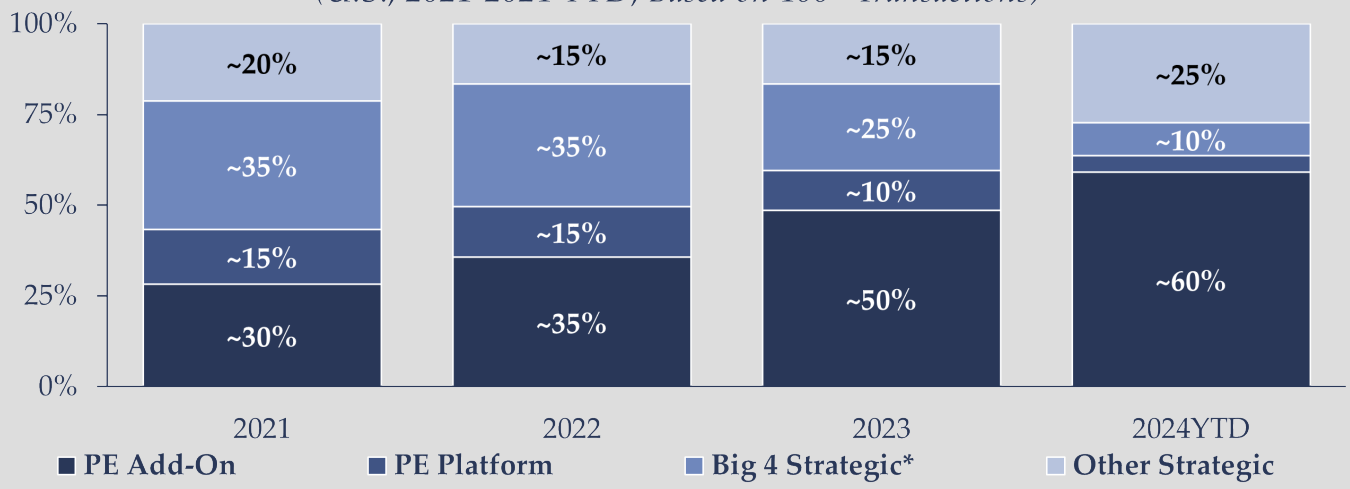


With environmental regulations on the horizon and increased focus on ESG initiatives among consumers and businesses alike, demand for **services that put resources back into the economy will continue to grow.** Vertically-integrated recycling and remanufacturing companies can capitalize on the need to keep valuable resources out of landfills. Additionally, as waste ends up in landfills, municipalities and management companies will **require advisory and other adjacent landfill services to optimize capacity and limit the negative impact of contaminant runoff.**

Private Equity Interest & Consolidation Trends

M&A Activity

(U.S., 2021-2024 YTD, Based on 400+ Transactions)



*Note: "Big 4" includes WM, Republic, GFL, and Waste Connections

Source: TM Capital, WasteDive

The waste services industry—such as landfill services & technologies, advisory, hauling services, and waste remanufacturing—stands out as an attractive investment opportunity for several compelling reasons:

1. The services are essential to customer operations and often have high switching costs, leading to cycle resistant returns with low churn.
2. The competitive landscape for services is highly fragmented, providing opportunities for consolidation.
3. Investors can find opportunity in both high-volume, low-margin sectors such as waste hauling or industrial material recovery, and low-volume but high-margin sectors including methane capture, leachate management, and sustainability advisory.
4. Increasing emphasis on ESG goals and impending regulatory changes will drive a shift towards sustainable and compliant waste management practices, opening value for related services.

STEER expects that there will be more transactions across various waste service segments due to technological and operational investments, but also due to the increasing need for compliance with anticipated regulatory changes and evolving ESG goals.