

# WASTE MANAGEMENT 101

## 2020



# Waste Management Investment Thesis



## INDUSTRY LEADERSHIP

- Largest and most diverse asset and customer base
- Unmatched return on invested capital
- Experienced and committed management team and employees



## STRATEGIC FOCUSES

- Fostering a culture of "people first" and innovation
- Providing a differentiated customer experience
- Driving efficiency through technology
- Leveraging the industry-leading asset network to achieve disciplined revenue growth



## FINANCIAL AND BUSINESS PROFILE

- Recession-resilient revenues
- Strong and consistent cash flow to fund balanced return of cash to shareholders
- Strong balance sheet that provides strategic flexibility

We are the leading environmental services provider in North America.

We have an empowered team of 45,000 employees dedicated to meeting the needs of our 20 million customers.

## Our Strategy

We are enabling a people-first, technology-led focus that leverages and sustains the strongest asset network in the business to drive best-in-class customer experience and growth. Our strategy centers on making Waste Management an employer of choice by being a great place to work. In turn, our employees can delight our customers through a differentiated experience, drive exceptional reputation, and lead in sustainability by preserving and protecting the environment. The result is strong and predictable long-term financial performance that rewards investors.

## Our History

Many decades and acquisitions have made us the industry leader that we are today. The original Waste Management, Inc.\* was founded in 1968 and began trading on the New York Stock Exchange in 1971 under the symbol WMX. Waste Management continued to grow, becoming the largest waste hauler in the industry by acquiring SCA Services, Inc., formerly Services Corporation of America, in 1984. In 1998, Waste Management merged with USA Waste Services, Inc. Following the merger, new WMI shares were issued, replacing WMX. Today, we are the leading environmental services provider in North America with 45,000 employees serving 20 million customers.

## About the Industry

According to the Waste Business Journal, the waste and recycling industry generates about \$75 billion in annual revenue--with Waste Management capturing just over 20% of the market. Overall, about 80% of that revenue come from private industry while the remaining 20% comes from the public sector.

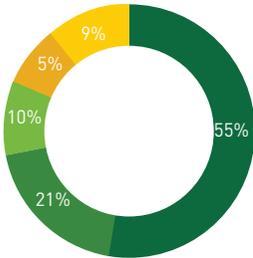


*\*Waste Management, Inc. is a holding company, and all operations are conducted by its subsidiaries. References to "Waste Management," "the Company" or "WM" refer to Waste Management, Inc. and its consolidated subsidiaries, unless context provides otherwise.*

## Business Fundamentals

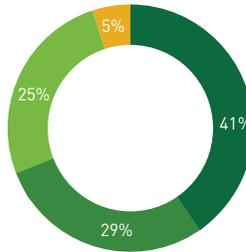
We are North America’s leading provider of comprehensive waste management environmental services. We partner with our customers and the communities we serve to manage and reduce waste from collection to disposal, while recovering valuable resources to create clean, renewable energy. We serve more than 20 million residential, commercial, industrial and municipal customers through our Collection, Landfill, Transfer, Recycling and other lines of business.

REVENUE MIX



■ Collection ■ Transfer ■ Other  
 ■ Landfill ■ Recycle

COLLECTION REVENUE MIX



■ Commercial ■ Industrial  
 ■ Residential ■ Other

About 70% of the waste that we collect is disposed of at our own landfills, or internalized, which allows us to realize higher consolidated margins and stronger operating cash flows.

## Collection

Collection operations are our largest revenue driver. Collection involves picking up solid waste and recyclables from where they were generated and transporting them to a transfer station, material recovery facility (MRF), or landfill. We provide services to commercial, industrial, residential, and municipal customers. Overall, about 40% of collection contracts are based on pricing that fluctuates with an index while the remaining 60% periodically increases with market prices. Generally, contracts based on an index are municipal contracts or franchise agreements.

For commercial and industrial customers, we typically have a three-year service agreement. The fees are determined by factors like collection frequency, type and volume or weight of the waste collected, and cost of disposal. As part of the service, we typically provide steel containers to most customers to hold their waste between pick-up dates. Industrial services can either be permanent or temporary. Permanent service indicates that a bin is always at the customer site, like a manufacturing plant or a shared container that a large apartment complex would require. We often provide compactors to these customers as well. Permanent service typically has a monthly rental fee and charge per haul. Temporary service is for short-term projects like construction. Temporary service is based on market pricing.

Commercial and industrial customer churn is about 9%, meaning that on average customers stay with us for more than 10 years.

Residential customers typically fall into two categories, municipal or open market. Municipal contracts are usually three to ten years while open market customers can sign up for services under a monthly subscription. The fees for residential collection are paid monthly in advance either by the municipality or directly by the residents receiving service.

For most residential collection services, we have a contract with a municipality, local authority such as a homeowners’ association, or individual resident.

About 60% of our residential contracts increase based on an index price while the remaining 40% increase based on market prices.

# Learn more about our trucks and containers.

Almost half of our fleet runs on **clean-burning natural gas**, which is better for the environment and lowers our maintenance costs.

## Commercial

**Trucks:** The front-end loader is the most common truck used to service commercial customers such as restaurants, hotels, and retail stores. On the front of the truck are forks that fit into the sleeves of a container. The forks allow for the containers to be lifted from the front of the unit to dump waste into the compaction body. Generally, one employee can operate a front loader.

**Containers:** Standard commercial containers range in size from 2 to 8 cubic yards.



## Industrial

**Trucks:** The roll-off truck is the most common truck used to service industrial customers like manufacturing facilities and construction sites. It is a flatbed truck with a container that rolls off the chassis. Generally, one employee can operate a roll-off truck.

**Containers:** Containers typically come in standard sizes of 10, 20, 30 or 40 cubic yards.



## Residential

**Trucks:** For residential collection services, we commonly use a rear-end loader truck or automated side-loader truck. These trucks are used primarily to empty smaller containers. Rear-end loaders can be loaded manually or equipped with a mechanical tipper. They typically require a driver and one or two helpers. Automated side-loaders use a mechanical arm to lift and dump containers and can be operated by one employee. Both trucks have a compactor to compact waste between stops.

**Containers:** The most common residential container is a wheeled bin holding between 64 and 96 gallons.





**Landfills are the main disposal method for solid waste in North America.**

We have the largest landfill network with nearly **250 landfills** in the U.S. and Canada.

Our network is extremely well positioned with the best, or tied-for-best, located assets in **16 of the top 20 metropolitan** statistical areas in the U.S. and Canada.

## Landfill

The operation and closure activities of a solid waste landfill include excavation, construction of liners and complex air and liquid monitoring and control systems, continuous spreading and compaction of waste, application of approved daily cover, and final capping and monitoring of the landfill. These operations are carefully planned to maintain environmentally safe conditions and to maximize the use of the area of the landfill that can be filled with waste or airspace. On average, we have more than 40 years of life remaining at our landfills, excluding potential expansions. Landfill markets are highly localized, however. The fees charged at landfills, called "tipping fees," are based on factors like competition as well as the type and weight or volume of waste deposited.

There are different types of landfills to handle different types of waste. The most abundant type handled by Waste Management is municipal solid waste (MSW), which is the trash generated by people and businesses. There are more strictly regulated landfills for hazardous waste. In addition, we have specific protocol for handling construction and demolition waste and special waste.

Responsible landfill protocols include leachate and landfill gas management. Leachate is liquid that has filtered through the landfill. It consists primarily of precipitation, with a small amount coming from the natural decomposition of the waste. It is necessary to collect leachate so that it can be removed from the landfill and properly treated or disposed of. MSW landfills produce landfill gas, and the majority of our MSW landfills have gas-to-energy facilities to convert this gas to electricity that can be sold to many types of customers. Some convert landfill gas to renewable natural gas. We are proud that we remain at the forefront in developing and implementing many of the practices that now constitute the standards for environmentally responsible landfill design and operation.



## Transfer

Transfer stations consolidate waste so that it can be compacted and transported to disposal sites. We have a network of more than 300 transfer stations where we and third-party haulers deposit waste. In many cases, these transfer stations operate like a remote gate to our landfills.

Access to transfer stations is critical to haulers who collect waste in areas where there are no disposal sites. Fees charged to third-party haulers are based on the type and volume or weight of the waste deposited, distance to the disposal site, and market rates for disposal costs. Our transfer station network allows us to improve internationalization and manage disposal costs.

Our landfill gas-to-energy operations generate enough electricity to power **500,000 homes each year**. Operating landfills requires experience, expertise and capital. Our well positioned network of landfills is critical North American infrastructure and provides a significant barrier for new entrants.

Our landfill properties often have the scope to allow development of important communities like nearly 10,000 acres of protected wildlife habitat, 63 pollinator protection sites, and sites with solar power, biking trails and environmental education centers.

# Anatomy of a landfill

## Protective Cover

### 1 Cover Vegetation

As portions of the landfill are completed, native grasses and vegetation are planted. The areas are maintained as open spaces. The vegetation is visually pleasing and prevents erosion of the underlying soils.

### 2 Top Soil

Helps to support and maintain the growth of vegetation by retaining moisture and providing nutrients.

### 3 Protective Cover Soil

Protects the landfill cap system and provides additional moisture retention to help support the cover vegetation.

## Composite Cap System

### 4 Drainage Layer

A layer of sand, gravel or a thick plastic mesh called a geonet drains excess precipitation from the protective cover soil to enhance stability and help prevent infiltration of water through the landfill cap system. A geotextile fabric, similar in appearance to felt, may be located on top of the drainage layer to provide separation of solid particles from liquid. This prevents clogging of the drainage layer.

### 5 Geomembrane

A thick plastic layer forms a cap that prevents excess precipitation from entering the landfill and forming leachate. This layer also helps to prevent the escape of landfill gas, thereby reducing odors.

### 6 Compacted Clay

Is placed over the waste to form a cap when the landfill reaches the permitted height. This layer prevents excess precipitation from entering the landfill and forming leachate. It also helps to prevent the escape of landfill gas, thereby reducing odors.

## Working Landfill

### 7 Daily Cover

At the end of each working period, waste is covered with six to twelve inches of soil or other approved materials. Daily cover reduces odors, keeps litter from scattering and helps deter scavengers.

### 8 Waste

As waste arrives, it is compacted in layers within a small area to reduce the volume consumed within the landfill. This practice also helps to reduce odors, keeps litter from scattering and deters scavengers.



## Leachate Collection System

Leachate is a liquid that has filtered through the landfill. It consists primarily of precipitation with a small amount coming from the natural decomposition of the waste. The leachate collection system collects the leachate so that it can be removed from the landfill and properly treated or disposed of.

The leachate collection system has the following components:

### 9 Leachate Collection Layer

A layer of sand, gravel or a thick plastic mesh called a geonet collects leachate and allows it to drain by gravity to the leachate collection pipe system.

### 10 Filter Geotextile

A geotextile fabric, similar in appearance to felt, may be located on top of the leachate collection pipe system to provide separation of solid particles from liquid. This prevents clogging of the pipe system.

### 11 Leachate Collection

**Pipe System**  
Perforated pipes, surrounded by a bed of gravel, transport collected leachate to specially designed low points called sumps. Pumps, located within the sumps, automatically remove the leachate from the landfill and transport it to the leachate management facilities for treatment or another proper method of disposal.

## Composite Liner System

### 12 Geomembrane

A thick plastic layer forms a liner that prevents leachate from leaving the landfill and entering the environment. This geomembrane is typically constructed of a special type of plastic called high-density polyethylene or HDPE. HDPE is tough, impermeable and extremely resistant to attack by the compounds that might be in the leachate. This layer also helps to prevent the escape of landfill gas.

### 13 Compacted Clay

Is located directly below the geomembrane and forms an additional barrier to prevent leachate from leaving the landfill and entering the environment. This layer also helps to prevent the escape of landfill gas.

### 14 Prepared Subgrade

The native soils beneath the landfill are prepared as needed prior to beginning landfill construction.

## PLEASE NOTE:

This illustration depicts a cross section of the standard environmental protection technologies of modern landfills. While the technologies used in most landfills are similar, the exact sequence and type of materials may differ from site to site depending on design, location, climate, underlying geology and state and local regulations. Note that landfill gas collection system pipes are placed across the landfill to maximize gas collection and potential use as clean energy or fuel.

## Recycling

Recycling provides communities with an alternative to landfill disposal for many items. We were the first major solid waste company to focus on residential single-stream recycling, which allows customers to mix recyclable paper, plastic, and glass in one bin. Residential single-stream programs have greatly increased recycling participation, resulting in increased volumes of recycled materials. Single-stream recycling is possible through the use of various mechanized screens, mechanized screens, optical sorting technologies, and robotics. Our recycling operations include materials processing, recycling commodities, and recycling brokerage services.



Collecting high quality recyclables is important to ensure that we can produce a high quality feedstock for end markets to use in the manufacture of new materials. That's why we educate consumers about how to recycle properly.

Learn more at  
[wm.com/recycleright](https://www.wm.com/recycleright)

## Materials Processing

Recyclable materials collected from residential, commercial and industrial customers are directed to one of our approximately 100 material recovery facilities, or MRFs (pronounced "murfs") for processing. Overall, about a third of recyclables come from residential and municipal customers with the remaining recyclables coming from commercial and industrial customers. Some of the recyclables we process are purchased from third parties. The price we pay for recyclable materials is often referred to as a "rebate." In some cases, rebates are based on fixed contractual rates or defined minimum per ton rates but are generally based upon the price we receive for selling processed goods, transportation costs, and market conditions. We have been focused on revising our rebate structures to ensure that we cover our cost of handling and processing materials while generating an acceptable return on the materials we process and sell.

## Recycling Commodities

We market and resell globally the recyclables that we process. We maintain comprehensive service centers that continuously analyze market prices, logistics, market demands, and product quality. Almost 80% of our recyclables are sold to domestic markets, and 100% of our residential plastic is sold to North American markets.

## Recycling Brokerage Services

We also provide recycling brokerage services, managing the marketing of recyclable materials for third parties. Our experience in managing recycling commodities for our own operations gives us the expertise to effectively manage volumes for third parties as well.

# Sustainability

We are advancing technologies to reduce waste and create even safer treatment and disposal options. We continue to develop sources of renewable energy while sharing the benefits of our learning and innovation with our clients and collaborators.

We measure our sustainability performance with a commitment to share our progress with investors and other stakeholders. We have goals for our greenhouse gas (GHG) footprint, potential avoided GHG emissions, waste-based energy benefits, emissions savings achieved from recycling, safety performance, and conservation.

To see the strides we are making in these areas, visit our Sustainability page on

[investors.wm.com](https://investors.wm.com).

## Other

We provide other services to our customers such as:

- Strategic Business Solutions provides centralized administration of national accounts.
- Energy and Environmental Services primarily provides specialized disposal services for oil and gas exploration and provides in-plant consultation services.
- Renewable Energy develops and operates landfill gas beneficial-use projects to produce electricity that can be sold to utilities, industrial customers or natural gas suppliers. Renewable Energy also produces Renewable Natural Gas for use in Waste Management's fleet.
- We provide other ancillary services to our customers like Bagster® to collect household project waste, portable restroom servicing and solar powered trash compactors.



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