

Waste Connections (WCN)

Industrials – Environmental Services

April 4, 2023

Investment Thesis

We recommend a buy rating for Waste Connections (WCN) with a target price of \$167-\$172 representing an upside of 21%-25%.

Drivers of Thesis

- Population growth and business development will create new opportunities for long-term contracts and collection volume growth. This will drive an average growth rate of 7.43% for all collection segments over the forecast period.
- Despite a movement towards limiting personal waste, WCN could benefit from increased recycling practices, which is reflected in our assumption of a 30% growth rate in 2023 and 15% in 2024.
- Waste Connections targets a secondary, rural market, allowing it to be a market leader in the areas where it operates.
- Continued, successful acquisitions will help drive inorganic growth for the company and help capture market share.

Risks to Thesis

- The inability to renew contracts or loss of market share due to price undercuts by competing firms will cause WCN's revenue to decline.
- We anticipate a lower growth rate for the exploration and production segment in the short term. Furthermore, we are expecting a growth rate of 3% from E&P waste compared to 51.80% last year. Sustained low growth could negatively impact this segment.
- Increased regulation from the Environmental Protection Agency could negatively impact profits if more capture systems and leachate prevention measures were mandated.

Earnings Estimates

Year	2020	2021	2022	2023E	2024E	2025E
EPS	\$0.78	\$2.40	\$3.22	\$4.23	\$4.69	\$5.31
HF est.				\$4.01	\$5.16	\$6.03
Growth	-63.69%	207.71%	34.17%	24.53%	28.68%	16.86%

12 Month Performance



Stock Rating

BUY

Target Price

\$167-172

Henry Fund DCF	\$172
Henry Fund DDM	\$129
Relative Multiple	\$167

Price Data

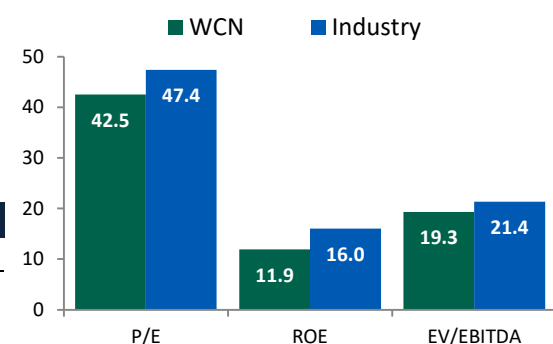
Current Price	\$137.83
52-week Range	\$113.50 – 148.20
Consensus 1yr Target	\$152.57

Key Statistics

Market Cap (B)	\$35.49
Shares Outstanding (M)	\$257.22
Institutional Ownership	96.30%
Beta	0.67
Dividend Yield	0.74%
Est. 5yr Growth	9.27%
Price/Earnings (TTM)	42.54
Price/Earnings (FY1)	42.70
Price/Sales (TTM)	4.74

Profitability

Operating Margin	27.13%
Profit Margin	11.59%
Return on Assets (TTM)	5.21%
Return on Equity (TTM)	11.86%



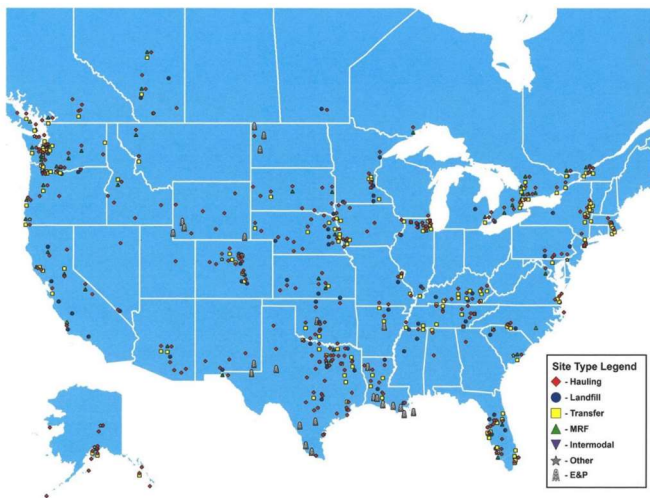
Company Description

Waste Connections is the third largest solid waste company in North America. The company operates in 43 U.S. states and six provinces in Canada. WCN provides non-hazardous waste collection, transfer, and disposal services along with resource recovery through recycling and renewable fuels generation, waste treatment, recovery and disposal services for Exploration and Production companies and intermodal services for the movement of cargo and solid waste containers in the Pacific Northwest.

COMPANY DESCRIPTION

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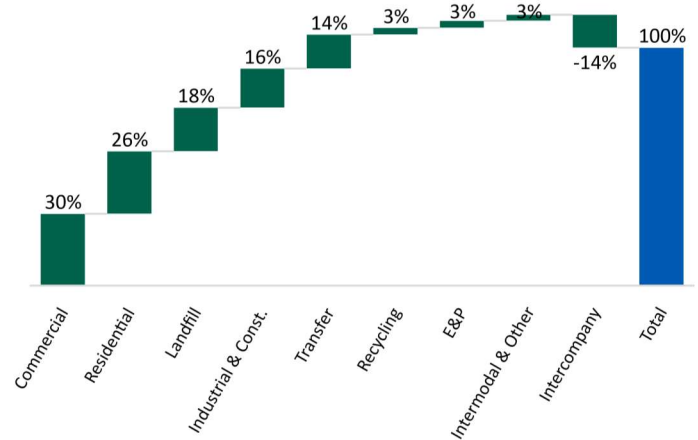
Waste Connections Locations



Source: Waste Connections

The company distinguishes their revenues by both the Service Line segment and Geographic segment. The Service line segment can be further broken down into Collection services and Disposal services. WCN highlights that from 2020-2022, no single contract or customer accounted for more than 10% of total revenues at the consolidated or reportable segment level. This shows the company's revenue stream is highly diversified among its customers. The geographic segment is split between Southern, Eastern, Western, Canada and Central. 87% of the company's revenues are from their operations in the United States while the remaining 13% are from Canada. The largest geographical segment by revenue is Southern, which we forecast will persist.¹

WCN Revenue Breakdown

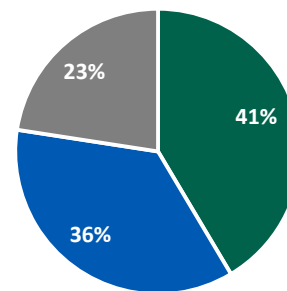


Source: FactSet

Solid Waste Collection

The Solid Waste Collection segments consist of waste collected from Residential, Commercial, and Industrial customers for transport to transfer stations, landfills, or recycling centers. The Commercial segment is Waste Connections' largest service line segment by revenue.

Revenue by Collection Segment (2022)



Commercial Residential Industrial and construction roll off

Source: FactSet

It operates by obtaining various sources of agreements:

- Governmental Certificates
- Franchise Agreements
- Exclusive Municipal Contracts
- Customer Service Agreements
- Residential Contracts

These long-term contracts allow the company to provide their services in specific locations at established rates. On or before December 2023, 362 contracts representing 3.0% of annual revenue are set for expiration or renewal.

While governmental certificates are solely limited to the State of Washington, they allow the holder of the agreement the exclusive and perpetual right to provide specific residential, commercial and/or industrial waste services in a defined territory at specified rates, subject to divestiture and/or overlap or cancellation by the Washington Utilities and Transportation Commission.¹

Additionally, WCN utilizes franchise agreements to lock in exclusive rights, typically spanning seven years. These contracts give WCN a right of first of refusal, allowing them the option to transact before others. Unlike the franchise agreements, municipal contracts provide a more limited scope of services and lock in a shorter time frame. This type of agreement typically involves a competitive bidding process at the end of a contract's life. Competition for collection, transfer and disposal volume is based primarily on price and, to a lesser extent, quality of services.¹

WCN may also provide commercial and industrial services under customer service agreements generally ranging from one to five years in duration. Not all markets offer exclusive agreements, so WCN enters into residential contracts with homeowner associations, apartment owners and mobile home park operators, or works on a subscription basis with individual households.¹

The Henry Fund forecasts the company will be able to sustain growth above the historical average as volume growth is driven by population expansion, and new business development, which would drive opportunities for the company.¹⁵ Potential increases in operating costs can be offset by charging higher prices.¹ We forecast that the total collection segment, which includes Commercial, Residential and Industrial Construction Roll-off will grow by 21.42% in 2023 largely due to the ability to pass price increase to customers.

Landfill

WCN currently owns and/or operates 100 landfills throughout the United States and Canada. These landfills can be broken down by their function:

- 75 municipal solid waste
- 9 Exploration and Production (E&P)
- 16 non-municipal solid waste landfills

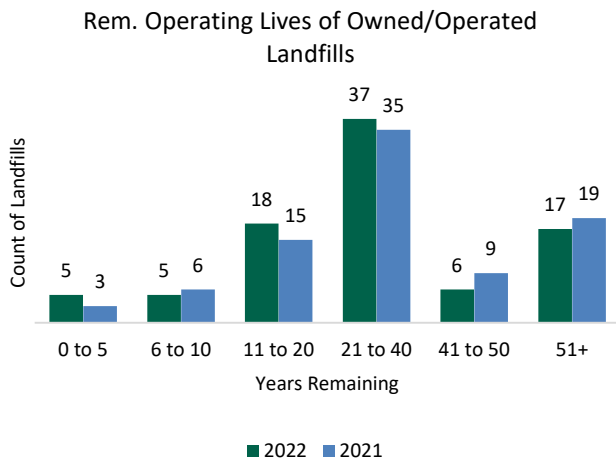
Moving forward, the company's ability to acquire, lease or renew landfill operating permits will be important for the

company's growth. There have been increasing challenges in receiving approval for new facilities due to compliance with zoning, environmental regulations, and other factors which could impact financial results. Typically landfill permits last between five to ten years. The company believes that controlling the waste stream by providing collection services under exclusive agreements is often more important to growth than owning or operating landfills when waste disposal is municipally owned. Some markets depend on the strategic advantage that landfills provide. These landfills offer the ability to provide integrated services spanning from collection to disposal. While it is not necessarily a strategic advantage to own landfills in all markets, WCN utilizes some landfill locations to benefit from increased volume generated by third parties.¹

Not all landfills are owned by the company. These are typically owned by a municipality who holds the permit. Waste Connections is then able to obtain a landfill operating agreement for a specified time. When the term of the contract does not encompass the entire life of the landfill, the owner of the property oversees the final capping and closure obligations.¹

Landfill Life

Waste Connections reported that as of December 31, 2022, based on remaining permitted capacity and projected annual disposal volumes, the average remaining life for owned/operated landfills is anticipated to be 31 years. The breakdown of all the landfill and their remaining operating lives is shown below. These estimates include the assumption that operating permits are renewed. Furthermore, many of these landfills have the potential to be expanded beyond the current volume capacity, which would increase the life of these landfills. As of now, the company is only seeking permits to expand 10 landfills where they see a high probability for expansion need.¹ This is important because it determines the amount of time the company can operate with its current landfills before they runs out of capacity.



Source: WCN 10K

Transfer

Revenue from the Transfer segment primarily consists of tipping fees that are charged at transfer stations. Tipping fees are charges that allow a third party to dispose of waste at Waste Connections' landfills. The fees are based on the market, type, and volume of the waste, in addition to the distance from the disposal facility. Many customers that utilize the transfer stations have entered one-to-ten-year contracts with WCN. Most of the contracts are subject to index price increases.¹ The Henry Fund forecasts that this segment will grow slightly above the historical average at 25% in 2023, remain elevated into 2023 and 2024 before reaching a steady 5% growth rate in 2027. We believe that this segment will continue strong growth because it allows Waste Connection to extend their reach, concentrate the waste stream from a wide area and create stronger utilization rates and operating efficiencies.¹

Recycling

This segment consists of revenues from the sale of recycled commodities, making it dependent on not only volume collected, but also the prices for cardboard, aluminum, plastics, and other paper products.¹ We anticipate that the market will continue to drive demand for recycling services as concern for the environment remains a high. This awareness has also promoted increased regulation to mandate or encourage recycling. WCN has increased the fee associated with the collection and processing of recyclables to reflect the processing and separation costs associated with these commodities. Furthermore, the company plans to mitigate price risk associated with the volatility of the recycled goods by

passing cost increases onto their customers.¹ In our forecast, we expect the recycling segment to grow at an average of 10.70%, with growth of 30% in 2023 and 15% in 2024.¹⁵ We believe the company will be able grow this segment at a higher rate than the historical average from increased recycling initiatives and consumer awareness. Additionally, the company is constructing two states of the art recycling facilities anticipated to be completed and operating by 2024. These new locations will feature enhanced optical sorters, improving the output quality for managing recycled goods while also reducing labor costs.¹³ Even if we overestimate WCN's growth in this segment, cost savings from operating efficiencies will be beneficial to this segment.

Background of Recycling in the U.S.

An important aspect of the United States' recycling industry is its newness. While recycling itself is not a new concept, managing it domestically is much more recent. Up until the 2018 Sword policy, China managed the recycling of almost half of the world to support its manufacturing industry. In 2016, the United States exported 16 million tons of recyclable material to China. However, only 30% of these shipments were recycled, leading to large amounts of pollution contaminating the coast of China. With China's Sword policy in effect, the country required much higher standards for the materials sent there, prompting the U.S to find other countries to accept its waste. First the U.S. switched from Vietnam, Malaysia and Thailand to Cambodia, Bangladesh, Ghana, Laos, Ethiopia, Kenya, and Senegal. As of 2020, the U.S. still ships over 1 million metric tons of waste per year abroad. Without China, the U.S. was forced to develop its own recycling industry to manage this waste. Since it is not fully developed, U.S. processing facilities and municipalities must pay more to recycle or simply discard the waste.¹⁹ The Henry Fund believes that increased recycling trends will help drive the development of economical and efficient domestic recycling facilities. Additionally, by improving sorting and recovering capacity, more recycled materials can be created, helping to develop a larger market for them. Waste Connection's ability to create efficient and profitable recycling centers will be important moving forward.

E&P

The company also targets niche markets, and offers non-hazardous E&P waste treatment, recovery, and disposal services. In certain E&P markets “no pit” rules regulate and limit on-site storage or treatment of waste for oil and gas companies. In these markets, WCN offers containers and collection services. These services span from the collection of waste at well sites to the subsequent transportation to treatment and disposal facilities.¹ The revenues from this segment are therefore linked to drilling and fracking activity in these areas. In the short term, the Henry Fund anticipates slower growth in exploration and production activity after reaching abnormally high oil prices in 2022 and due to lower economic growth in 2023.¹⁵ Our model forecasts 3% growth in 2023 and 2024 followed by 5% growth after 2027 as world GDP continues to increase.

Intermodal and Other

Intermodal consists of revenue from providing services for the rail haul movement of cargo and solid waste containers. This segment operates in the Pacific Northwest through a network of intermodal facilities. Fees for these services are typically established through negotiated rates based on volume commitments and the planned destination. Additionally, a small portion of the company’s overall revenue stems from the sale of methane gas that the company can generate from the municipal solid waste landfills. As waste decomposes in landfills, it produces methane that the company can capture and convert into a renewable energy source. They also received renewable energy credits from this segment. As of December 31, 2022, 55 of the landfills had gas recovery systems. Of these, 17 are used to fuel electricity generators, which can then be sold to public utilities. Another 10 of the systems are used to produce gas that is converted to pipeline grade natural gas and sold to natural gas companies.¹ The Henry Fund anticipates this segment, driven by the renewable energy generation, will experience a 30% growth rate in 2023 and 2024. It will continue high growth into 2024 and beyond after the completion of two new Renewable Gas Production Systems.

Debt Maturity Analysis

WCN has a target leverage ratio of approximately 2.5-3.0x total debt to EBITDA defined in both their Credit Agreement and Term Loan Agreement. However, our

forecast shows that the leverage ratio will drop below the specified target in 2024 as the company sees EBITDA growth and slower growth in long term debt levels. We feel that the company has ample cash flows from operations throughout the forecast period to meet their debt obligations, especially because the first repayment is not due until 2028. The company should not have to refinance their debt or push out the maturity of these notes.¹

Fiscal Year	Payment (\$mil)
2023-2027	\$0
2028	\$500
2029	\$500
2030	\$600
2032	\$1,150
Thereafter	\$2,100
Total	\$4,850

Source: WCN 10K

Waste Connections has a comparable rating to its peers as shown in the chart below.

Ticker	Rating	D/E
Waste Connections (WCN)	BBB+	100.1%
Republic Services (RSG)	BBB+	124.7%
GFL Environmental (GFL)	N/A	176.7%
Waste Management (WM)	A-	226.4%
Casella Waste Systems (CWST)	BB	132.20%
Clean Harbors (CLH)	BB+	134.90%

Source: FactSet

ESG Analysis

Waste Connections has taken the initiative to focus on environmental, organizational, and financial sustainability efforts since it was founded in 1997.¹ WCN and its peers’ ESG scores are listed in the table shown below. For reference, the world’s largest companies across all sectors have an average ESG score of 46 out of 100.¹⁸

Ticker	ESG Score	Rating
WCN	22.5	Medium
RSG	20.9	Medium
GFL	20	Medium
WM	16.7	Low
CWST	25.9	Medium
CLH	24.1	Medium

Source: Sustainalytics

In 2022, the company increased its efforts to maintain transparency surrounding its ESG initiatives by creating a Task Force for Climate-Related Financial Disclosure. The

company has committed \$500 million to achieve their 15-year ESG targets that were set in place in 2020. These targets focus on expanding their resource receiver capacity, increasing landfill gas recovery, developing two new renewable natural gas facilities, two new leachate treatment plants and two new recycling facilities. To fund their recycling, renewable natural gas initiatives, the company has planned for \$100 million in spending. Highlights from the company's 2022 sustainability report included the reduction of Scope 1 and Scope 2 emissions by 7%, leading to a new target goal of 15%, increased recycled volume and improved safety and employee engagement. Waste Connections already has net zero status with offsets from operations exceeding emissions by 3.4x. To incentive sound ESG practices at a leadership level, the company has also incorporated ESG targets into executive compensation metrics.¹³

While landfills are necessary for proper disposal of waste, they can also have a significant social and environmental impact. From an environmental perspective, the most destructive component of landfills is the production and release of methane, which is one of the most potent greenhouse gases and a significant contributor to global warming. Waste Connections has already taken action to mitigate and profit from this by capturing and selling methane emissions. These then can be used as a renewable energy source to power local households, fuel industrial power plants or to power alternative fuel vehicles.² Additionally, relocating or creating new landfills further from populated areas may pose a threat for waste collection companies in the future as it would increase route costs and mileage while diminishing static location advantages.¹¹

The Henry Fund believes these ESG, and environmental initiatives are a realistic representation of the company's goals rather than a greenwashing façade. Moving forward, recycling segments and renewable energy generation will be increasingly important components of value for environmental service companies. If these targets are not sincere goals, we believe that they will lag overall industry expectations.

RECENT DEVELOPMENTS

Recent Earnings Announcement

On February 16, 2023, Waste Connections reported fourth quarter earnings. The company's earnings per share were

\$.75. Price-led organic growth and acquisition activity were key drivers to push Q4 results above expectations. The company disclosed the full year's revenue of \$7.212 billion, which represents a 17% increase from the prior year. In the earnings report, the company cited continued strong pricing and acquisition growth to drive double digit growth in 2023. Furthermore, beyond growth from acquisitions, the company forecasts an increase in recycled commodities, renewable fuel values, and the reduction of inflationary pressures.¹

COVID-19 Impact

Since the start of 2019, when the pandemic began, Waste Connections has incurred over \$50 million from Covid-19 related costs. The cost represents \$10 million from supplemental pay for employees throughout 2022. The remaining portion of the \$50 million includes bonus payments and supplemental wages.¹ Since the number of Covid-19 cases has dramatically dropped, we anticipate that most of these costs will not exist in coming years. Over this period, residential waste production increased as individuals were forced to spend more time at home; however, this was offset by a decline in industrial and business activity. We expect that this distribution will return to normal now that there are no stay-at-home guidelines.¹¹

Landfill Emission Guidelines

The Environmental Protection Agency (EPA) regulates landfills to ensure that they are maintaining good practices to protect the environment. In 2016, the EPA announced its final updates of its New Source Performance Standards to reduce methane from new, modified, and reconstructed municipal solid waste landfills. The most recent amendments to this regulation occurred in 2020 when the EPA allowed landfills subject to the National Emission Standards for Hazardous Air Pollutants to opt-in to certain compliance provisions in February.⁸

In May of 2021, the EPA implemented 2016 Obama-era rules that will lower the emissions threshold for when landfills must install gas collection systems. However, the U.N has taken steeper actions and calls to end sending organic waste to landfills and instead send

food waste to compost facilities since these items contribute to methane production as they break down.⁹

In February of 2023, the EPA agreed to revise its methods for estimating methane emissions from landfills after a lawsuit filed by the Environmental Integrity Project, the Sierra Club, and the Chesapeake Climate Action Network. These organizations claim that the current evaluation standards are outdated and undercount emission by as much as 25%. The consent decree filed gives the EPA until mid-January of 2024 to propose new counting methods or to determine that updates are not necessary.⁸ If the environmental groups are correct and the current method used to estimate emissions is wrong, the environmental service industry could experience a new wave of strict regulations, hurting WCN's overall cash flows.

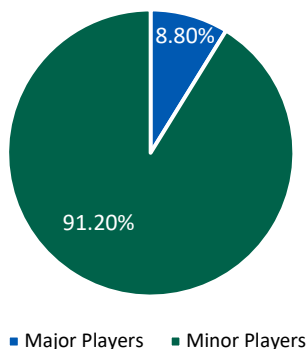
INDUSTRY TRENDS

Consolidation, privatization, and emissions capture are all recent trends that have been observed in the environmental services industry.

Consolidation

To grow and capture market share, waste collection service companies often acquire smaller regional providers. Vertical integration allows the company to benefit from having their own collection services and disposal sites as they can charge tipping fees from third parties and avoiding landfill fees themselves.¹¹ Increased competition for these acquisitions have made these transactions more expensive.¹² The chart below shows that the market is primarily comprised of minor players who could be targets as companies like Waste Connections look to expand into new areas and acquire new landfills.

Market Share Concentration



Source: IBIS World

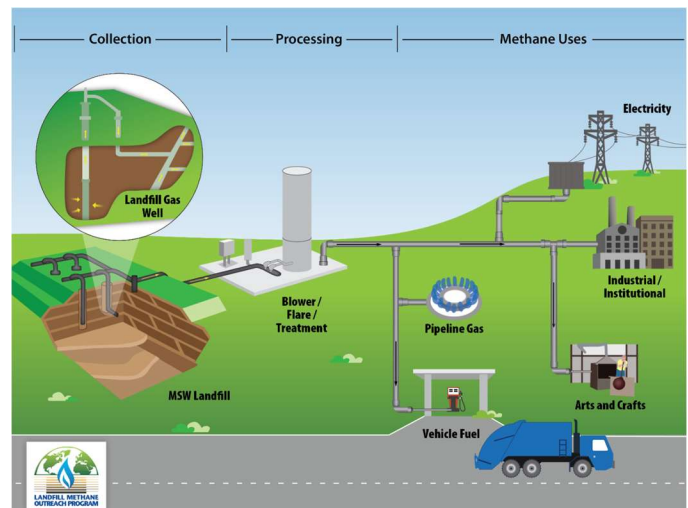
Privatization

In recent years, there has been movement towards privatization of waste collection services in local communities. In 2022, Waste Connections lost a 20-year contract with the city of Port Angeles, Washington, after 15 years of the arrangement had already passed. While this is just one example, some feel that waste collection should be a government responsibility rather than a service provided by a company. However, the main argument against this movement is that the large companies can operate in a more cost effective and efficient way.¹¹

Emission Capture

Waste service companies can collect the gas produced from landfills and produce renewable fuels. These companies are incentivized to utilize and implement these systems when there are favorable tax credits such as the federal Renewable Fuel Standard. Waste Connections and Waste Management have fleets of renewable gas vehicles that they plan to continue to utilize and expand as this infrastructure for natural gas fueling becomes more readily available.¹⁴

Steps for Methane Utilization



Source: EPA

Single Use Plastic

While there are no federal regulations regarding single use plastics, many local and state governments have implemented regulations or costs on these items. Eight states currently have bans on single use plastics bags.

Others take a hybrid approach where plastic bags are banned, but paper or other bags can be provided at a charge.¹⁹ Trends like this pose both an opportunity and threat to Waste Connections. While this could reduce solid waste collection volume for landfills, the company could profit from increased recycling activities, especially if there is a market wide trend increasing the demand for recycled goods.

MARKETS AND COMPETITION

Competition and Rivalry

Competition in the waste management industry is primarily based on price, rather than quality of services. Some counties and municipalities operate their own waste collection operations, which benefit from access to user fees and similar charges, tax revenues and tax-exempt financing. Competitors could reduce the cost of their services, which would allow them to expand their market share and capture contracts. In response, WCN may have to lower their prices to remain competitive or be subject to loss of business. Furthermore, there has been a national push towards reducing waste production, which could negatively impact the volume of waste the company is able to collect.¹

Threat of New Entrants

Because of the significant labor and capital resources needed to operate in the waste services industry, the threat of new entrants into the industry is relatively low. Specifically, the significant capital requirements of developing and operating a landfill serve as a barrier to landfill ownership, resulting in the common practice of allowing third parties to dispose of waste at the company's landfill. This allows Waste Connections to generate additional revenue from tipping fees beyond what they would earn from their collections alone.³

PEERS

Waste Connections identifies their competition as three public waste companies: Waste Management, Inc., Republic Services, Inc., and GFL Environmental, Inc. Additionally, they also compete with Clean Harbors in their E&P segment and other regional, local, and independent companies. For this section we are utilizing the public firms identified as peers by WCN.¹ We chose to leave out some of the other peers mentioned by WCN due to their

significantly smaller size and scope. Furthermore, we wanted the majority of the comparable peers to be from the municipal waste services segment as that comprises the largest segment of revenue for Waste Connections.

Ticker	Mkt Cap	EV/EBITDA	Sales	P/E
WM	66,234.93	14.79	19,698.00	30.67x
RSG	42,649.44	14.39	13,511.30	29.34x
WCN	35,478.67	19.87	7,211.86	44.03x
GFL	13,854.88	16.97	5,193.59	N/A
CLH	7,410.56	9.83	5,166.61	18.95x
CWS	4,319.85	20.12	1,085.09	83.93x

Source: FactSet

Waste Management

Of Waste Connections' peers, Waste Management is the largest by both sales and enterprise value. Like WCN, Waste Management engages in non-hazardous waste collection, transfer, and disposal in both the United States and Canada. It offers its services to residential, commercial landfill and transfer stations and industries such as office, apartments, multi-family, construction and demolition, property management, retail, restaurant, and manufacturing. Typically, WM has commercial and industrial collection service agreements that span three years, which is comparable to WCN's one-to-five-year range. For residential collection, WM's franchises or contracts range from three to ten years, which falls below WCN's 7-year average. While Waste Management was the first major solid waste company to focus on single stream recycling, Waste Connections also allows their customers to mix recyclables, which has boosted the overall level of recycling.³

Republic Services

Republic Services operates in the United States and Canada. The company's objective is to develop the best vertically integrated to build density and improve returns. The company strives to differentiate themselves through three capabilities: customer zeal, digital and sustainability. This strategy differs from Waste Connection as they feel pricing competition has a greater impact than customer satisfaction.⁴

GFL Environmental

GFL engages in the business of transporting, managing, and recycling of both solid and liquid waste and the

production of soil remediation service, which differentiates them from Waste Connections. The company is the fourth largest diversified environmental service company in North America, as measured by revenue.⁵

Casella Waste Systems

CWST operates in two segments that are designated as the Eastern and Western regions. These can further be broken down into subsegments in Maine, northern, central, and southeastern New Hampshire, central and eastern Massachusetts, and eastern Connecticut. The Western region encompasses Vermont, southwestern New Hampshire, eastern, western, and upstate New York, western Massachusetts and Pennsylvania. The company plans to focus their efforts on increasing vertical integration in their Western region by capturing new markets. Based on operating geography alone, Waste Connections is differentiated from CWST based on their target markets. Waste Connections has a broader operating geographical segment.⁶

Clean Harbors

Clean Harbors is a leading provider of sustainable environmental and industrial services throughout North America. The company is the largest re-refiner and recycler of used oil in North America. This overlaps with Waste Connections E&P waste treatment segments. However, Waste Connections does not engage in any hazardous waste collection or disposal unlike Clean Harbors. The landfills that Clean Harbors utilize are primarily for inorganic waste, furthermore, six of the seven landfills are designed and permitted for disposal of hazardous waste.⁷

OPERATING METRICS

Owned/Operated Landfills

This chart gives insights into the number of landfills that each company has access to. While this does not factor in size, having multiple locations decreases mileage from collection sites and may also benefit from tipping fees.

Ticker	Owned/Operated Landfills
WM	254
RSG	206
CWST	8
CLH	7

Source: FactSet

Average Remaining Landfill Life

The average remaining landfill life looks at how long the landfill will be operational based on the remaining permitted capacity. This is an estimate of the average across all landfills operated/owned by the firm. This is an important metric because a longer remaining average life implies that these companies can operate longer without new construction or expansion of old landfills.

Ticker	Avg. Rem. Landfill Life
RSG	58 years
WM	39 years
WCN	31 years
GFL	24.8 years

Source: FactSet

Margins

The following table shows the margins for Waste Connections and its peers. WM, RSG and WCN all have relatively comparable EBITDA margins, showing that these three companies generate higher operating profits before non-cash expenses. Overall, Waste Connections' margins are in line with their major competitors.

Ticker	Gross Margin	EBITDA Margin	Net Margin
WM	27.2%	17.5%	11.4%
RSG	28.6%	17.9%	11.0%
WCN	27.1%	17.8%	11.6%
GFL	12.2%	2.2%	-2.7%
CLH	24.4%	12.3%	8.0%
CWS	21.7%	9.4%	4.9%

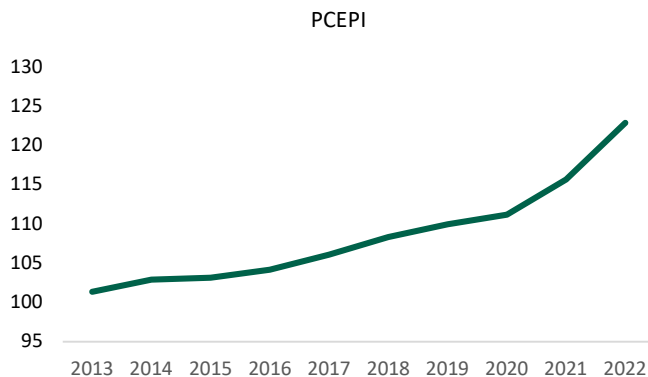
Source: FactSet

ECONOMIC OUTLOOK

While Waste Connections operates in a relatively defensive sub-industry, overall macroeconomic conditions can still have a significant impact on the company and their operations.

Inflation

High inflation rates have prevailed throughout 2022. Over the past year the Fed has made large efforts to curb inflation without leading the economy into a recession. The inflation rate for January 2023 is currently at 5.4% as measured by the personal consumption expenditures (PCE), which is well below the peak over 7% in June of 2022. However, through continued rate hikes, the Fed has steadily been able to lower inflation, but still has a way to go before reaching their goal of 2%. Waste Connections will benefit from reduced inflationary pressures on the business. Particularly fuel costs, have fluctuated greatly in addition to increased labor and third-party service costs.¹⁰



Source: FRED

Real GDP

In 2023, global GDP is anticipated to grow about 2.5% and approximately 1% in the United States.¹⁷ However these forecasts are sensitive to inflation adjustments, the impacts of high sovereign debt, and the recent money tightening initiative by governments. Strong GDP growth is typically associated with strong demand for oil as economies expand along with an increase of developing companies, and industrial projects. Additionally, strong GDP drives industrial production and construction, which increases waste volumes produced. These activities would all drive higher collection volume and produce higher revenues and cash flows for Waste Connections.

Population Density

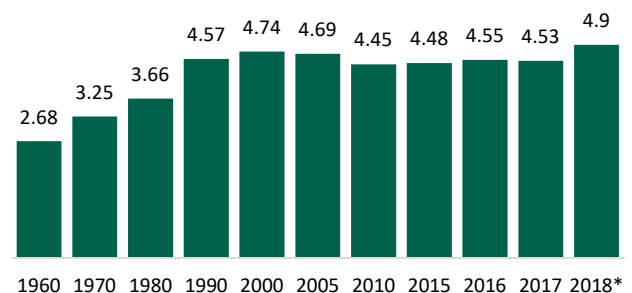
87% of WCNs of revenue comes from the United States. As the population continues to grow, there will be more demand for collection services and need for landfill usage. Over the span of 2018-2023 the annual growth rate of the number of households has been 0.7%.¹² Additionally,

Americans are moving to rural areas at increased rates. This trend could create new opportunities for Waste Connections as the focus is on secondary, rural markets. Access to recycling is more common in the Northeast than the West, which could partially be attributed to population density. The sustainable Packaging Coalition found that 73% of Americans have access to curbside recycling programs. Of this, 53% were automatically enrolled in the recycling program, while the remaining 20% had to opt in themselves. However, only 33% of these people were enrolled in these programs. Finding and capitalizing on these markets that are not currently offered recycling services will help Waste Connections find new locations to offer their services.¹¹

Population Growth

The chart below shows the weight of trash generated per person each day in the U.S. Even if the amount of trash produced each day did not change, population growth will help drive this overall volume. While trash reduction initiatives gain popularity, we do not forecast trash output to decline significantly in the short term. By 2050, the United States population is anticipated to 400.9 million with an average annual growth rate of 0.6% over 2010-2050.

U.S. MSW Generation Per Capita (lbs./Day)



Source: Statista

Consumer Income

There is a positive correlation between waste generation and consumer income. While high income countries only account for 16% of the world's population, these countries account for 34% of the world's waste.²⁰ As personal incomes increase, there is a potential for more waste to be generated by these individuals.

VALUATION

Revenue Growth

The Henry Fund forecasts that the highest revenue growth will stem from Recycling, Industrial and Construction Roll-off and Transfer segments.

We forecast the Recycling segment to grow at an average of 10.70%, with growth of 30% in 2023 and 15% in 2024.¹⁵ We believe the company will be able to maintain their historical average growth rate and will continue to see growth from increased recycling initiatives in addition to the two state of the art recycling facilities that are anticipated to be completed and operating by 2024.

In 2021, President Biden passed a \$3.0 trillion infrastructure bill, which will generate a large increase in construction activity, benefiting segments that handle waste from these projects.¹¹

Cost of Operations

We project the cost of operations for Waste Connections will increase over the forecast period. This is due in part to the need for companies to transition to more advanced equipment to reach sustainability initiatives. However, the company will be able to offset higher operating costs by charging higher prices for the services.

Earnings Estimates

Our earnings per share estimates are lower than FactSet consensus in 2023, but then rise above earning per share forecasts in 2024. We are forecasting higher overall growth rates primarily stemming from expected growth in the Industrial and Construction and Recycling segments in 2024.

Capital Expenditures

We forecast Waste Connections' capital expenditure will increase at a rate consistent with the historical average and the inflation rate over the forecast period. This forecast could be impacted by changes in regulation that require investment in sustainable vehicles or landfill gas emissions systems. These regulations could have a significant impact on the amount of required capital expenditure spending.¹⁵

WACC Assumptions

To calculate our Weighted Average Cost of Capital (WACC) we used the assumptions below. Using these, we found a WACC of 6.51% for Waste Connections.

Risk Free Rate: The risk-free rate of 3.37% is from the yield of a 10-year U.S. Treasury Note as of March 24, 2023.

Beta: The beta used in the model for Waste Connections was found using an average of the weekly 5-year, 2-year and 1-year betas from Bloomberg.¹⁰

Equity Risk Premium: 5.50% is the Henry Fund's consensus for the equity risk premium.

Pre-Tax Cost of Debt: The pre-tax cost of debt for Waste Connections is from the yield of a 2.95% coupon bond maturing in January of 2052.¹⁰

Tax Rate: We used an implied marginal tax rate of 23.74% based on Waste Connections historical average.

DCF and EP Valuation Model

Our Discounted Cash Flow (DCF) and Economic Profit (EP) model represented an implied price per share of \$172 per share, which represents an upside of 25%. We utilized this value as the high end for our estimated valuation range.

DDM Valuation Model

The Dividend Discount Model derives an implied price based on the discounted value of forecasted futures dividends. This model gave us a share price of \$129 per share, which we utilized as our lower bound for the forecasted one-year target range. Our future dividends per share are calculated based on the historical dividend growth rate, which we anticipate the company will be able to sustain.

Relative Valuation Model

Our Relative Valuation Model is based on multiples from the selected peer group described earlier in the report. For both ratios used, we decided to use an average from all the peers. This generated an implied share price of \$167 per share using 2023 EPS. Additionally, we noticed that Waste Connections has a higher EV/EBITDA multiple than comparable firms, which may be since WCN has higher

margins compared to its peers. This results in an implied value of \$86.56 from this multiple. We decided that this did not reflect Waste Connections' true value and thus was not included in our target price range.

KEYS TO MONITOR

In summary, we are assigning a **BUY** rating to Waste Connections due to the potential for growth from business development, and population growth. Furthermore, its recycling segments are anticipated to experience growth due to a movement toward recycling. Its target market strategy also allows the company to differentiate itself from its competitors by focusing on the secondary, rural market, which historically has less intense competition than other potential areas of operation. Continuing successful acquisitions could help the company experience inorganic growth and capture market share from competing firms.

At the same time, WCN also faces some risks that will be important to monitor. One potential threat is the inability to renew contracts or experience the loss of market share if they were to face price undercuts by competing firms. WCN either must match these price changes or accept a loss of customer, both of which would not be ideal for WCN. Lower GDP growth may also impact exploration and production activity, which could hurt their E&P segment growth in the short term. Furthermore, regulation from the EPA could hurt cash flows. While these events do pose a risk to WCN, we believe that the drivers will outweigh the risks.

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Waste Connections Revenue Decomposition

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Total	\$5,445,990	\$6,151,361	\$7,211,859	\$8,756,958	\$9,819,468	\$10,550,809	\$11,166,721	\$11,744,429	\$12,352,961	\$12,970,609	\$13,619,139	\$14,300,096	\$14,586,098
Growth	1.06%	12.95%	17.24%	21.42%	12.13%	7.45%	5.84%	5.17%	5.18%	5.00%	5.00%	5.00%	2.00%
Service Line Segment													
Collections													
Commercial	1,610,313	1,813,426	2,176,295	2,720,369	3,128,424	3,347,414	3,514,784	3,690,524	3,875,050	4,068,802	4,272,242	4,485,855	4,575,572
Growth	1.07%	12.61%	20.01%	25.00%	15.00%	7.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Residential	1,528,217	1,673,819	1,891,108	2,231,507	2,454,658	2,626,484	2,757,808	2,895,699	3,040,484	3,192,508	3,352,133	3,519,740	3,590,135
Growth	10.68%	9.53%	12.98%	18.00%	10.00%	7.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Industrial and construction roll off	833,148	954,181	1,183,624	1,420,349	1,633,401	1,796,741	1,886,578	1,980,907	2,079,953	2,183,950	2,293,148	2,407,805	2,455,961
Growth	-0.95%	14.53%	24.05%	20.00%	15.00%	9.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Total collection	3,971,678	4,441,426	5,251,027	6,372,225	7,216,483	7,770,639	8,159,171	8,567,130	8,995,486	9,445,261	9,917,524	10,413,400	10,621,668
Growth	4.10%	11.83%	18.23%	21.35%	13.25%	7.68%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Disposal													
Landfill	1,146,732	1,233,499	1,328,942	1,461,836	1,578,783	1,657,722	1,740,608	1,827,639	1,919,021	2,014,972	2,115,720	2,221,506	2,265,936
Growth	1.22%	7.57%	7.74%	10.00%	8.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Transfer	777,754	859,113	1,026,050	1,282,563	1,410,819	1,551,901	1,707,091	1,792,445	1,882,067	1,976,171	2,074,979	2,178,728	2,222,303
Growth	0.83%	10.46%	19.43%	25.00%	10.00%	10.00%	10.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Recycling	86,389	205,076	204,876	266,339	306,290	352,233	387,456	426,202	468,822	492,263	516,876	542,720	553,575
Growth	34.47%	137.39%	-0.10%	30.00%	15.00%	15.00%	10.00%	10.00%	10.00%	5.00%	5.00%	5.00%	2.00%
E&P	159,438	138,707	210,562	216,879	223,385	227,853	232,410	244,030	256,232	269,044	282,496	296,621	302,553
Growth	-41.36%	-13.00%	51.80%	3.00%	3.00%	2.00%	2.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Intermodal and other	118,396	152,194	188,471	245,012	269,514	282,989	297,139	311,996	327,595	343,975	361,174	379,233	386,817
Growth	-2.26%	28.55%	23.84%	30.00%	10.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Intercompany	(814,397)	(878,654)	(998,069)	(1,087,895)	(1,185,806)	(1,292,528)	(1,357,155)	(1,425,012)	(1,496,263)	(1,571,076)	(1,649,630)	(1,732,112)	(1,766,754)
Growth	3.35%	7.89%	13.59%	9.00%	9.00%	9.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Total	5,445,990	5,388,679	7,211,859	8,442,870	9,467,270	10,172,380	10,766,201	11,323,189	11,909,894	12,505,388	13,130,658	13,787,191	14,062,935
Growth	1.06%	-1.05%	33.83%	17.07%	12.13%	7.45%	5.84%	5.17%	5.18%	5.00%	5.00%	5.00%	2.00%

Waste Connections
Income Statement

(thousands)

<i>Fiscal Years Ending Dec. 31</i>	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Revenues	5,445,990	6,151,361	7,211,859	\$8,756,958	\$9,819,468	\$10,550,809	\$11,166,721	\$11,744,429	\$12,352,961	\$12,970,609	\$13,619,139	\$14,300,096	\$14,586,098
Cost of operations	3,276,808	3,654,074	4,336,012	5,206,312	5,838,010	6,272,818	6,638,998	6,982,466	7,344,259	7,711,472	8,097,046	8,501,898	8,671,936
Selling, general and administrative	537,632	612,337	696,467	867,406	972,651	1,045,093	1,106,101	1,163,325	1,223,602	1,284,782	1,349,021	1,416,472	1,444,801
Depreciation	621,102	673,730	763,285	820,786	821,697	824,688	829,564	836,151	844,299	853,876	864,767	876,870	890,100
Amortization of intangibles	131,302	139,279	155,675	153,457	135,884	119,071	103,541	89,959	89,959	89,959	89,959	89,959	89,959
Impairments and other operating items	466,718	32,316	18,230	18,230	18,230	18,230	18,230	18,230	18,230	18,230	18,230	18,230	18,230
Operating income / loss	412,428	1,039,625	1,242,190	1,690,767	2,032,996	2,270,910	2,470,287	2,654,299	2,832,612	3,012,290	3,200,117	3,396,667	3,471,072
Interest expense	(162,375)	(162,796)	(202,331)	(349,673)	(351,443)	(352,717)	(353,574)	(354,674)	(356,209)	(358,104)	(360,266)	(362,749)	(365,543)
Interest income	5,253	2,916	5,950	11,163	60,164	115,789	176,008	240,975	310,588	385,258	464,572	548,579	637,109
Other income / expense, net	(1,392)	6,285	3,154	-	-	-	-	-	-	-	-	-	-
Loss on extinguishment of debt	-	(115,288)	-	-	-	-	-	-	-	-	-	-	-
Loss / income before income tax provision / recovery	253,914	770,742	1,048,963	1,352,258	1,741,718	2,033,981	2,292,721	2,540,599	2,786,992	3,039,444	3,304,424	3,582,497	3,742,639
Income Tax Provision	(49,922)	(152,253)	(212,962)	321,065	413,534	482,925	544,357	603,211	661,711	721,651	784,565	850,587	888,609
Net loss / income	203,992	618,489	836,001	1,031,193	1,328,184	1,551,055	1,748,363	1,937,388	2,125,280	2,317,793	2,519,859	2,731,910	2,854,029
Net income attributable to noncontrolling interests	685	(442)	(339)	80.15368915	90	97	102	107	113	119	125	131	134
Net income attributable to Waste Connections	204,677	618,047	835,662	1,031,273	1,328,274	1,551,152	1,748,466	1,937,496	2,125,393	2,317,912	2,519,984	2,732,040	2,854,163
Total Shares Outstanding	262,233	257,333	257,220	257,333	257,333	257,333	257,333	257,333	257,333	257,333	257,333	257,333	257,333
Basic Earnings per Share	0.78	2.40	3.22	4.01	5.16	6.03	6.79	7.53	8.26	9.01	9.79	10.62	11.09
Basic Weighted average shares	263,487	262,961	259,783	257,276	257,276	257,333	257,333	257,333	257,333	257,333	257,333	257,333	257,333
Annual Dividend per Share	0.76	0.85	0.95	1.09	1.25	1.43	1.65	1.90	2.18	2.50	2.88	3.31	3.80
Total Dividends	199,297	217,446	243,073	279,500	321,245	369,225	424,371	487,754	560,603	644,332	740,568	851,176	978,305

Waste Connections
Balance Sheet

(millions)

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Cash and cash equivalents	617,294	147,441	78,637	1,165,986	2,400,996	3,738,330	5,181,387	6,727,892	8,386,970	10,149,426	12,016,271	13,983,766	15,877,397
Accounts receivable, net of allowance for doubtful accounts	630,264	709,614	833,862	1,012,049	1,134,844	1,219,366	1,290,547	1,357,314	1,427,642	1,499,024	1,573,975	1,652,674	1,685,728
Other receivables	-	-	-	-	-	-	-	-	-	-	-	-	-
Deferred income taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
Current assets held for sale	-	-	-	-	-	-	-	-	-	-	-	-	-
Prepaid expenses and other current assets	160,714	175,722	205,146	252,558	283,202	304,294	322,058	338,719	356,270	374,083	392,787	412,427	420,675
Total current assets	1,408,272	1,032,777	1,117,645	2,430,593	3,819,042	5,261,990	6,793,992	8,423,924	10,170,882	12,022,533	13,983,034	16,048,867	17,983,800
Restricted cash and investments	154,611	131,188	170,826	178,470	186,457	194,801	203,518	212,626	222,141	232,082	242,467	253,318	264,654
Property and equipment, net	5,284,506	5,721,949	6,950,915	6,958,625	6,983,958	7,025,247	7,081,033	7,150,037	7,231,140	7,323,369	7,425,870	7,537,906	7,658,835
Operating lease right-of-use assets	170,923	160,567	192,506	192,720	193,421	194,565	196,110	198,021	200,267	202,821	205,660	208,763	212,112
Goodwill	5,726,650	6,187,643	6,902,297	6,902,297	6,902,297	6,902,297	6,902,297	6,902,297	6,902,297	6,902,297	6,902,297	6,902,297	6,902,297
Intangible assets, net	1,155,079	1,350,597	1,673,917	1,520,460	1,384,576	1,265,505	1,161,964	1,072,005	982,046	892,087	802,128	712,169	622,210
Long-term assets held for sale	-	-	-	-	-	-	-	-	-	-	-	-	-
Other assets, net	92,323	115,203	126,497	148,530	166,552	178,956	189,403	199,202	209,523	219,999	230,999	242,549	247,400
Total Long-Term Assets	12,584,092	13,667,147	16,016,958	15,901,102	15,817,260	15,761,371	15,734,325	15,734,187	15,747,414	15,772,655	15,809,422	15,857,002	15,907,507
Total Assets	13,992,364	14,699,924	17,134,603	18,331,695	19,636,302	21,023,361	22,528,317	24,158,111	25,918,296	27,795,188	29,792,456	31,905,869	33,891,308
Accounts payable	290,820	392,868	638,728	609,024	682,918	733,781	776,616	816,794	859,116	902,072	947,176	994,534	1,014,425
Book overdraft	17,079	16,721	15,645	23,411	26,251	28,206	29,853	31,397	33,024	34,675	36,409	38,229	38,994
Accrued charges	404,923	442,596	431,247	571,663	641,024	688,767	728,974	766,688	806,413	846,734	889,071	933,524	952,195
Current portion of operating lease liabilities	30,671	38,017	35,170	36,725	36,859	37,077	37,371	37,736	38,164	38,650	39,191	39,783	40,421
Current portion of contingent consideration	43,297	62,804	60,092	60,092	60,092	60,092	60,092	60,092	60,092	60,092	60,092	60,092	60,092
Deferred revenues	233,596	273,720	325,002	377,911	423,764	455,325	481,905	506,836	533,098	559,753	587,740	617,127	629,470
Current liabilities held for sale	-	-	-	-	-	-	-	-	-	-	-	-	-
Current portion of long-term debt	8,268	6,020	6,759	-	-	-	-	-	5	5	6	-	12
Total current liabilities	1,028,654	1,232,746	1,512,643	1,678,825	1,870,909	2,003,249	2,114,812	2,219,543	2,329,912	2,441,981	2,559,685	2,683,290	2,735,608
Long-term debt	4,708,678	5,040,500	6,890,149	6,931,811	6,956,952	6,973,838	6,995,539	7,025,810	7,063,185	7,105,825	7,154,807	7,209,923	7,242,760
Long-term portion of operating lease liabilities	147,223	129,628	165,462	163,890	164,486	165,459	166,773	168,398	170,308	172,480	174,894	177,533	180,381
Long-term portion of contingent consideration	28,439	31,504	21,323	21,323	21,323	21,323	21,323	21,323	21,323	21,323	21,323	21,323	21,323
Deferred income taxes	760,044	850,921	1,013,742	1,013,741	1,013,741	1,013,740	1,013,740	1,013,739	1,013,738	1,013,738	1,013,737	1,013,737	1,013,736
Other long-term liabilities	455,888	421,080	417,640	656,607	736,275	791,112	837,294	880,611	926,239	972,551	1,021,179	1,072,238	1,093,683
Total Long-Term Liabilities	6,100,272	6,473,633	8,508,316	8,787,372	8,892,777	8,965,472	9,034,668	9,109,881	9,194,793	9,285,917	9,385,941	9,494,753	9,551,883
Total liabilities	7,128,926	7,706,379	10,020,959	10,466,197	10,763,686	10,968,720	11,149,480	11,329,424	11,524,705	11,727,899	11,945,626	12,178,044	12,287,491
Common Stock	4,200,923	3,892,509	3,516,034	3,516,034	3,516,034	3,516,034	3,516,034	3,516,034	3,516,034	3,516,034	3,516,034	3,516,034	3,516,034
Accumulated other comprehensive loss	(651)	39,584	(56,830)	(56,830)	(56,830)	(56,830)	(56,830)	(56,830)	(56,830)	(56,830)	(56,830)	(56,830)	(56,830)
Treasury Shares	-	-	-	-	-	-	-	-	-	-	-	-	-
Retained earnings	2,659,001	3,056,845	3,649,494	4,401,267	5,408,296	6,590,224	7,914,318	9,364,061	10,928,851	12,602,431	14,381,847	16,262,712	18,138,569
Total Waste Connections' equity	6,859,273.0	6,988,938.0	7,108,698.0	7,860,471	8,867,500	10,049,428	11,373,522	12,823,265	14,388,055	16,061,635	17,841,051	19,721,916	21,597,773
Noncontrolling interest in subsidiaries	4,165	4,607	4,946	5,026	5,116	5,213	5,315	5,422	5,535	5,654	5,779	5,910	6,043
Total shareholders' equity	6,863,438	6,993,545	7,113,644	7,865,498	8,872,617	10,054,640	11,378,837	12,828,687	14,393,591	16,067,289	17,846,830	19,727,825	21,603,817
Total liabilities and shareholders' equity	13,992,364	14,699,924	17,134,603	18,331,695	19,636,302	21,023,361	22,528,317	24,158,111	25,918,296	27,795,188	29,792,456	31,905,869	33,891,308

Waste Connections
Historical Cash Flow Statement

(millions)

	2016	2017	2018	2019	2020	2021	2022
Net loss / income	247	577	547	567	204	618	836.00
Loss / gain on disposal of assets and impairments	27	134	10	61	446	28	9.52
Depreciation	394	530	573	618	621	674	763.28
Amortization of intangibles	70	102	108	126	131	139	155.68
Loss on early extinguishment of debt	-	-	-	-	-	115	-
Amortization of leases	-	-	-	24	-	-	-
Deferred income taxes, net of acquisitions	42	(153)	78	55	(50)	15	93.48
Current period provision for expected credit losses	-	-	-	-	-	10	17.35
Interest on long-term debt, amortization of deferred financing costs	5	4	4	5	8	5	5.45
Share-based compensation	45	39	44	43	46	58	63.49
Interest accretion	11	14	15	16	17	16	17.67
Excess tax benefit associated with equity-based compensation	(5)	-	-	-	-	-	-
Payment of contingent consideration recorded in earnings	(0.49)	(10)	(0.01)	-	(10)	(1)	(2.98)
Adjustments to contingent consideration	(3)	18	0.35	1	18	3	(1.03)
Other	(2)	2	1	(2)	2	(1)	(8.22)
Accounts receivable, net	(5)	(39)	(38)	(23)	47	(55)	(100.55)
Prepaid expenses and other current assets	(22)	(51)	40	9	(18)	(8)	(0.75)
Accounts payable	54	50	16	71	(148)	67	192.85
Deferred revenue	8	4	18	19	15	32	42.25
Accrued liabilities	(70)	(15)	1	(24)	89	4	(28.08)
Other long-term liabilities	4.14	(11)	(6)	(25)	(8)	(20)	(32.92)
Capping cost	(4.61)	(9)	-	-	-	-	-
Cash generated from operating activities	795.312	1,187	1,411	1,541	1,409	1,698	2,022.49
Payments for acquisitions, net of cash acquired	(17)	(411)	(830)	(737)	(389)	(960)	(2,206.90)
Cash acquired in the Progressive Waste acquisition	71	-	-	-	-	-	-
Capital expenditures for property and equipment	(345)	(479)	(546)	(634)	(597)	(744)	(912.68)
Capital expenditure for purchase of greenfield landfill site	-	-	-	(32)	(68)	-	-
Investment in noncontrolling interest	-	-	-	(25)	-	(25)	-
Proceeds from disposal of assets	5	28	5	4	19	43	30.68
Other	(6)	1	(1)	(2)	(12)	(6)	1.73
Cash utilized in investing activities	(292.581)	(860.914)	(1,372)	(1,426)	(1,046)	(1,693)	(3,087.17)
Payment of deferred financing costs	-	-	-	-	-	-	-
Proceeds from long-term debt	3,469	974	1,023	1,576	1,816	2,112	4,816.15
Principal payments on notes payable and long-term debt	(3,714)	(770)	(971)	(1,471)	(1,543)	(1,893)	(3,073.99)
Premiums paid on early extinguishment of debt	-	-	-	-	-	(111)	-
Payment of contingent consideration recorded at acquisition date	(16)	(17)	(6)	(3)	(13)	(13)	(16.91)
Change in book overdraft	(1)	8	(1)	(3)	1	(0.37)	(1.08)
Proceeds from option and warrant exercises	-	2	-	-	-	-	-
Excess tax benefit associated with equity-based compensation	5	-	-	-	-	-	-
Payments for repurchase of common shares	-	-	(59)	-	(106)	(339)	(425.00)
Purchase of, net of proceeds from, restricted shares	-	-	-	-	-	-	-
Payments for cash dividends	(93)	(132)	(153)	(175)	(200)	(220)	(243.01)
Tax withholdings related to net share settlements of restricted share uni	(11)	(14)	(15)	(18)	(23)	(19)	(18.36)
Distributions to noncontrolling interests	(0)	-	-	-	-	-	-
Debt issuance costs	(14)	(4)	(9)	(6)	(11)	(19)	(13.27)
Proceeds from issuance of shares under employee share purchase plan	-	-	-	-	-	1	3.27
Proceeds from sale of common shares held in trust	20	11	3	4	1	0.43	0.66
Other	-	(1)	(0.10)	(1)	-	-	-
Cash utilized in / generated from financing activities	(355)	57	(188)	(96)	(78)	(499)	1,028.46
Effect of foreign currency translation on cash and cash equivalents	(1)	2	(1)	1	7	(0.03)	(2.04)
Net cash inflow / outflow	147	384.901	(149)	19	291	(495)	(38.25)
Change in cash held for sale	(0.04)	(0.150)	0.19	-	-	-	-
Net increase / decrease in cash, cash equivalents and restricted cash	147	384.751	(149)	19	291	(495)	(38.25)
Cash, cash equivalents and restricted cash at beginning of period	21	168.476	553	403.966086	423	714	219.62
Cash, cash equivalents and restricted cash at end of period	168	553.227	403.96609	423.2221100	714	220	181.37

Waste Connections
Forecasted Cash Flow Statement

<i>Fiscal Years Ending Dec. 31</i>	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Net loss / income	1,031,273	1,328,274	1,551,152	1,748,466	1,937,496	2,125,393	2,317,912	2,519,984	2,732,040	2,854,163
Current portion of operating lease liabilities	1,555.4	133.7	217.9	294.4	364.2	428.0	486.8	541.0	591.3	638.2
Current portion of long-term debt	(6,759.0)	-	-	-	-	5.0	-	1.0	(6.0)	11.5
Long-term DTL	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)
Depreciation	820,786	821,697	824,688	829,564	836,151	844,299	853,876	864,767	876,870	890,100
Changes in deferred taxes	-	-	-	-	-	-	-	-	-	-
Adjustments to reconcile net income:										
Accounts receivable	(178,187)	(122,795)	(84,522)	(71,181)	(66,766)	(70,329)	(71,382)	(74,951)	(78,699)	(33,053)
Other receivables	-	-	-	-	-	-	-	-	-	-
Prepaid Expense and other Current assets	(47,412)	(30,644)	(21,092)	(17,763)	(16,662)	(17,551)	(17,813)	(18,704)	(19,639)	(8,249)
Accounts Payable	(29,704)	73,895	50,863	42,835	40,178	42,322	42,956	45,104	47,359	19,891
Book overdraft	7,766	2,840	1,955	1,647	1,544	1,627	1,651	1,734	1,820	765
Accrued charges	140,416	69,362	47,743	40,207	37,713	39,726	40,321	42,337	44,454	18,670
Deferred revenue	52,909	45,853	31,561	26,580	24,931	26,261	26,655	27,988	29,387	12,343
Net cash from operating activities	1,792,642	2,188,615	2,402,565	2,600,647	2,794,950	2,992,181	3,194,661	3,408,799	3,634,177	3,755,278
Restricted cash and investments	(7,644)	(7,987)	(8,344)	(8,717)	(9,107)	(9,515)	(9,941)	(10,386)	(10,850)	(11,336)
Operating lease right-of-use assets	(214)	(702)	(1,144)	(1,545)	(1,911)	(2,246)	(2,554)	(2,839)	(3,103)	(3,349)
Intangible assets, net	153,457	135,884	119,071	103,541	89,959	89,959	89,959	89,959	89,959	89,959
Capex	(828,496)	(847,029)	(865,978)	(885,349)	(905,155)	(925,403)	(946,104)	(967,269)	(988,906)	(1,011,028)
Other assets	(22,033)	(18,022)	(12,405)	(10,447)	(9,799)	(10,322)	(10,476)	(11,000)	(11,550)	(4,851)
Net cash from investing activities	(704,930)	(737,855)	(768,799)	(802,517)	(836,013)	(857,527)	(879,116)	(901,534)	(924,451)	(940,605)
Long term portion of operating lease liabilities	(1,572)	597	972	1,314	1,625	1,910	2,172	2,414	2,639	2,848
Other long-term liabilities	238,967	79,668	54,837	46,182	43,317	45,628	46,312	48,628	51,059	21,445
Long term debt	41,662	25,141	16,886	21,701	30,271	37,375	42,640	48,982	55,116	32,837
Payment of Dividends	(279,500)	(321,245)	(369,225)	(424,371)	(487,754)	(560,603)	(644,332)	(740,568)	(851,176)	(978,305)
Noncontrolling interest	80.15	89.88	96.57	102.21	107.50	113.07	118.72	124.66	130.89	133.51
Cash provided by financing activities	(363)	(215,749)	(296,433)	(355,072)	(412,433)	(475,576)	(553,089)	(640,419)	(742,232)	(921,041)
Change in cash	1,087,349	1,235,010	1,337,334	1,443,058	1,546,504	1,659,079	1,762,455	1,866,845	1,967,495	1,893,631
Cash at beginning of the year	78,637	1,165,986	2,400,996	3,738,330	5,181,387	6,727,892	8,386,970	10,149,426	12,016,271	13,983,766
Cash at end of year	1,165,986	2,400,996	3,738,330	5,181,387	6,727,892	8,386,970	10,149,426	12,016,271	13,983,766	15,877,397

Waste Connections
Common Size Income Statement

<i>Fiscal Years Ending Dec. 31</i>	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Revenues	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cost of operations	59.36%	60.17%	59.40%	60.12%	59.45%	59.45%	59.45%	59.45%	59.45%	59.45%	59.45%	59.45%	59.45%
Selling, general and administrative	10.14%	9.87%	9.95%	9.66%	9.91%	9.91%	9.91%	9.91%	9.91%	9.91%	9.91%	9.91%	9.91%
Depreciation	11.48%	11.40%	10.95%	10.58%	9.37%	8.37%	7.82%	7.43%	7.12%	6.83%	6.58%	6.35%	6.13%
Amortization of intangibles	2.33%	2.41%	2.26%	2.16%	1.75%	1.38%	1.13%	0.93%	0.77%	0.73%	0.69%	0.66%	0.63%
Impairments and other operating items	1.15%	8.57%	0.53%	0.25%	0.21%	0.19%	0.17%	0.16%	0.16%	0.15%	0.14%	0.13%	0.13%
Operating income / loss	15.55%	7.57%	16.90%	17.22%	19.31%	20.70%	21.52%	22.12%	22.60%	22.93%	23.22%	23.50%	23.75%
Interest expense	-2.73%	-2.98%	-2.65%	-2.81%	-3.99%	-3.58%	-3.34%	-3.17%	-3.02%	-2.88%	-2.76%	-2.65%	-2.54%
Interest income	0.18%	0.10%	0.05%	0.08%	0.13%	0.61%	1.10%	1.58%	2.05%	2.51%	2.97%	3.41%	3.84%
Other income / expense, net	0.11%	-0.03%	0.10%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Loss on extinguishment of debt	0.00%	0.00%	-1.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Loss / income before income tax provision / recovery	13.10%	4.66%	12.53%	14.54%	15.44%	17.74%	19.28%	20.53%	21.63%	22.56%	23.43%	24.26%	25.05%
Income Tax Provision	-2.58%	-0.92%	-2.48%	-2.95%	3.67%	4.21%	4.58%	4.87%	5.14%	5.36%	5.56%	5.76%	5.95%
Net loss / income	10.52%	3.75%	10.05%	11.59%	11.78%	13.53%	14.70%	15.66%	16.50%	17.20%	17.87%	18.50%	19.10%
Net income attributable to noncontrolling interests	0.00%	0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Net income attributable to Waste Connections	10.52%	3.76%	10.05%	11.59%	11.78%	13.53%	14.70%	15.66%	16.50%	17.21%	17.87%	18.50%	19.11%

Waste Connections
Common Size Balance Sheet

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Cash and cash equivalents	11.33%	2.40%	1.09%	13.31%	24.45%	35.43%	46.40%	57.29%	67.89%	78.25%	88.23%	97.79%	108.85%
Accounts receivable, net of allowance for doubtful accounts	11.57%	11.54%	11.56%	11.56%	11.56%	11.56%	11.56%	11.56%	11.56%	11.56%	11.56%	11.56%	11.56%
Other receivables	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Deferred income taxes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Current assets held for sale	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Prepaid expenses and other current assets	2.95%	2.86%	2.84%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%
Total current assets	25.86%	16.79%	15.50%	27.76%	38.89%	49.87%	60.84%	71.73%	82.34%	92.69%	102.67%	112.23%	123.29%
Restricted cash and investments	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Property and equipment, net	2.84%	2.13%	2.37%	2.04%	1.90%	1.85%	1.82%	1.81%	1.80%	1.79%	1.78%	1.77%	1.81%
Operating lease right-of-use assets	97.03%	93.02%	96.38%	79.46%	71.12%	66.58%	63.41%	60.88%	58.54%	56.46%	54.53%	52.71%	52.51%
Goodwill	3.14%	2.61%	2.67%	2.20%	1.97%	1.84%	1.76%	1.69%	1.62%	1.56%	1.51%	1.46%	1.45%
Intangible assets, net	105.15%	100.59%	95.71%	78.82%	70.29%	65.42%	61.81%	58.77%	55.88%	53.21%	50.68%	48.27%	47.32%
Long-term assets held for sale	21.21%	21.96%	23.21%	17.36%	14.10%	11.99%	10.41%	9.13%	7.95%	6.88%	5.89%	4.98%	4.27%
Other assets, net	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Long-Term Assets	1.70%	1.87%	1.75%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%
Total Assets	231.07%	222.18%	222.09%	181.58%	161.08%	149.39%	140.90%	133.97%	127.48%	121.60%	116.08%	110.89%	109.06%
Accounts payable	256.93%	238.97%	237.59%	209.34%	199.97%	199.26%	201.75%	205.70%	209.81%	214.29%	218.75%	223.12%	232.35%
Book overdraft	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accrued charges	5.34%	6.39%	8.86%	6.95%	6.95%	6.95%	6.95%	6.95%	6.95%	6.95%	6.95%	6.95%	6.95%
Current portion of operating lease liabilities	0.31%	0.27%	0.22%	0.27%	0.27%	0.27%	0.27%	0.27%	0.27%	0.27%	0.27%	0.27%	0.27%
Current portion of contingent consideration	7.44%	7.20%	5.98%	6.53%	6.53%	6.53%	6.53%	6.53%	6.53%	6.53%	6.53%	6.53%	6.53%
Deferred revenues	0.56%	0.62%	0.49%	0.42%	0.38%	0.35%	0.33%	0.32%	0.31%	0.30%	0.29%	0.28%	0.28%
Current liabilities held for sale	0.80%	1.02%	0.83%	0.69%	0.61%	0.57%	0.54%	0.51%	0.49%	0.46%	0.44%	0.42%	0.41%
Current portion of long-term debt	4.29%	4.45%	4.51%	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%
Total current liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Long-term debt	18.89%	20.04%	20.97%	19.17%	19.05%	18.99%	18.94%	18.90%	18.86%	18.83%	18.79%	18.76%	18.75%
Long-term portion of operating lease liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Long-term portion of contingent consideration	86.46%	81.94%	95.54%	79.16%	70.85%	66.10%	62.65%	59.82%	57.18%	54.78%	52.53%	50.42%	49.66%
Deferred income taxes	2.70%	2.11%	2.29%	1.87%	1.68%	1.57%	1.49%	1.43%	1.38%	1.33%	1.28%	1.24%	1.24%
Other long-term liabilities	0.52%	0.51%	0.30%	0.24%	0.22%	0.20%	0.19%	0.18%	0.17%	0.16%	0.16%	0.15%	0.15%
Total Long-Term Liabilities	13.96%	13.83%	14.06%	11.58%	10.32%	9.61%	9.08%	8.63%	8.21%	7.82%	7.44%	7.09%	6.95%
Total liabilities	8.37%	6.85%	5.79%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
Common Stock	112.01%	105.24%	117.98%	100.35%	90.56%	84.97%	80.91%	77.57%	74.43%	71.59%	68.92%	66.40%	65.49%
Accumulated other comprehensive loss	130.90%	125.28%	138.95%	119.52%	109.62%	103.96%	99.85%	96.47%	93.30%	90.42%	87.71%	85.16%	84.24%
Treasury Shares	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Retained earnings	77.14%	63.28%	48.75%	40.15%	35.81%	33.32%	31.49%	29.94%	28.46%	27.11%	25.82%	24.59%	24.11%
Total Waste Connections' equity	-0.01%	0.64%	-0.79%	-0.65%	-0.58%	-0.54%	-0.51%	-0.48%	-0.46%	-0.44%	-0.42%	-0.40%	-0.39%
Noncontrolling interest in subsidiaries	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total shareholders' equity	48.82%	49.69%	50.60%	50.26%	55.08%	62.46%	70.87%	79.73%	88.47%	97.16%	105.60%	113.72%	124.36%
Total liabilities and shareholders' equity	125.95%	113.62%	98.57%	89.76%	90.31%	95.25%	101.85%	109.19%	116.47%	123.83%	131.00%	137.91%	148.07%
	0.08%	0.07%	0.07%	0.06%	0.05%	0.05%	0.05%	0.05%	0.04%	0.04%	0.04%	0.04%	0.04%
	126.03%	113.69%	98.64%	89.82%	90.36%	95.30%	101.90%	109.23%	116.52%	123.87%	131.04%	137.96%	148.11%
	256.93%	238.97%	237.59%	209.34%	199.97%	199.26%	201.75%	205.70%	209.81%	214.29%	218.75%	223.12%	232.35%

Waste Connections
Value Driver Estimation

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
NOPLAT:													
EBITA													
Revenues	5,445,990	6,151,361	7,211,859	8,756,958	9,819,468	10,550,809	11,166,721	11,744,429	12,352,961	12,970,609	13,619,139	14,300,096	14,586,098
Operating Expenses													
Cost of operations	3,276,808	3,654,074	4,336,012	5,206,312	5,838,010	6,272,818	6,638,998	6,982,466	7,344,259	7,711,472	8,097,046	8,501,898	8,671,936
SG&A	537,632	612,337	696,467	867,406	972,651	1,045,093	1,106,101	1,163,325	1,223,602	1,284,782	1,349,021	1,416,472	1,444,801
Depreciation	621,102	673,730	763,285	820,786	821,697	824,688	829,564	836,151	844,299	853,876	864,767	876,870	890,100
Amortization of Intangibles	131,302	139,279	155,675	153,457	135,884	119,071	103,541	89,959	89,959	89,959	89,959	89,959	89,959
ADD: Imputed Interest on Operating Leases	8,666	8,141	9,760	9,771	9,806	9,864	9,943	10,040	10,154	10,283	10,427	10,584	10,754
EBITA	887,812	1,080,082	1,270,180	1,718,768	2,061,032	2,299,004	2,498,460	2,682,568	2,860,996	3,040,803	3,228,774	3,425,481	3,500,056
Less: Adjusted Taxes													
Income Tax Provision	(49,922)	(152,253)	(212,962)	321,065	413,534	482,925	544,357	603,211	661,711	721,651	784,565	850,587	888,609
Add: PV of Operating Lease	2,058	1,933	2,317	2,320	2,328	2,342	2,361	2,384	2,411	2,441	2,476	2,513	2,553
Add: Interest Expense	38,552	38,652	48,039	83,022	83,443	83,745	83,948	84,210	84,574	85,024	85,537	86,127	86,790
Add: Loss of early extinguishment of debt	-	(27,373)	-	-	-	-	-	-	-	-	-	-	-
Sub: Interest Income	1,247	692	1,413	2,651	14,285	27,492	41,789	57,214	73,743	91,471	110,303	130,248	151,268
Sub: Other income(expense)	(78)	1,492	749	-	-	-	-	-	-	-	-	-	-
Impairments & Other Operating Items	110,812	7,673	4,328	4,328	4,328	4,328	4,328	4,328	4,328	4,328	4,328	4,328	4,328
Total Adjusted Taxes	(10,481)	(141,225)	(164,767)	403,756	485,020	541,521	588,877	632,590	674,954	717,645	762,275	808,979	826,685
Add: Changes in Deferred Taxes	(50)	15	93	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
NOPLAT	898,242	1,221,321	1,435,041	1,315,011	1,576,012	1,757,482	1,909,582	2,049,978	2,186,041	2,323,157	2,466,499	2,616,502	2,673,371
Invested Capital (IC):													
Net operating working capital													
Operating current assets													
Normal Cash	59,382	67,073	78,637	95,485	107,070	115,044	121,760	128,059	134,695	141,430	148,501	155,926	159,045
Accounts Receivable	630,264	709,614	833,862	1,012,049	1,134,844	1,219,366	1,290,547	1,357,314	1,427,642	1,499,024	1,573,975	1,652,674	1,685,728
Prepaid expenses and other current assets	160,714	175,722	205,146	252,558	283,202	304,294	322,058	338,719	356,270	374,083	392,787	412,427	420,675
Total Operating Current Assets	850,360	952,409	1,117,645	1,360,092	1,525,116	1,638,704	1,734,365	1,824,092	1,918,607	2,014,537	2,115,264	2,221,027	2,265,448
Operating Current Liabilities													
Accounts payable	290,820	392,868	638,728	609,024	682,918	733,781	776,616	816,794	859,116	902,072	947,176	994,534	1,014,425
Accrued charges	404,923	442,596	431,247	571,663	641,024	688,767	728,974	766,688	806,413	846,734	889,071	933,524	952,195
Deferred revenue	233,596	273,720	325,002	377,911	423,764	455,325	481,905	506,836	533,098	559,753	587,740	617,127	629,470
Total operating current liabilities	929,339	1,109,184	1,394,977	1,558,597	1,747,706	1,877,873	1,987,496	2,090,318	2,198,627	2,308,559	2,423,987	2,545,186	2,596,090
Net operating working capital	(78,979)	(156,775)	(277,332)	(198,505)	(222,591)	(239,169)	(253,131)	(266,226)	(280,021)	(294,022)	(308,723)	(324,159)	(330,642)
Net PPE:	5,284,506	5,721,949	6,950,915	6,958,625	6,983,958	7,025,247	7,081,033	7,150,037	7,231,140	7,323,369	7,425,870	7,537,906	7,658,835
Other operating assets:													
PV of operating leases	170,923	160,567	192,506	192,720	193,421	194,565	196,110	198,021	200,267	202,821	205,660	208,763	212,112
Intangible assets	1,155,079	1,350,597	1,673,917	1,520,460	1,384,576	1,265,505	1,161,964	1,072,005	982,046	892,087	802,128	712,169	622,210
Other assets, net	92,323	115,203	126,497	148,530	166,552	178,956	189,403	199,202	209,523	219,999	230,999	242,549	247,400
Other operating liabilities													
Other long-term liabilities	455,888	421,080	417,640	656,607	736,275	791,112	837,294	880,611	926,239	972,551	1,021,179	1,072,238	1,093,683
Invested Capital	6,167,964	6,770,461	8,248,863	7,965,222	7,769,641	7,633,992	7,538,085	7,472,427	7,416,717	7,371,703	7,334,756	7,304,991	7,316,232
Free Cash Flow (FCF):													
NOPLAT	898,242	1,221,321	1,435,041	1,315,011	1,576,012	1,757,482	1,909,582	2,049,978	2,186,041	2,323,157	2,466,499	2,616,502	2,673,371
Change in IC	(108,654)	602,497	1,478,402	(283,641)	(195,581)	(135,649)	(95,907)	(65,658)	(55,710)	(45,013)	(36,947)	(29,765)	11,241
FCF	1,006,896	618,824	(43,361)	1,598,652	1,771,594	1,893,131	2,005,489	2,115,636	2,241,751	2,368,171	2,503,446	2,646,267	2,662,129
Return on Invested Capital (ROIC):													
NOPLAT	898,242	1,221,321	1,435,041	1,315,011	1,576,012	1,757,482	1,909,582	2,049,978	2,186,041	2,323,157	2,466,499	2,616,502	2,673,371
Beginning IC	6,276,618	6,167,964	6,770,461	8,248,863	7,965,222	7,769,641	7,633,992	7,538,085	7,472,427	7,416,717	7,371,703	7,334,756	7,304,991
ROIC	14.31%	19.80%	21.20%	15.94%	19.79%	22.62%	25.01%	27.19%	29.25%	31.32%	33.46%	35.67%	36.60%
Economic Profit (EP):													
Beginning IC	6,276,618	6,167,964	6,770,461	8,248,863	7,965,222	7,769,641	7,633,992	7,538,085	7,472,427	7,416,717	7,371,703	7,334,756	7,304,991
x (ROIC - WACC)	14%	20%	21%	10%	13%	16%	19%	21%	23%	25%	27%	29%	30%
EP	898,242	1,221,321	1,435,041	787,168	1,066,319	1,260,304	1,421,083	1,567,617	1,707,882	1,848,563	1,994,784	2,147,152	2,205,925

Waste Connections

Weighted Average Cost of Capital (WACC) Estimation

Cost of Equity:

Risk-Free Rate	3.37%
Beta	0.64
Equity Risk Premium	5.50%
Cost of Equity	6.90%

ASSUMPTIONS:

10Y Treasury
5Y monthly
HF assumption

Cost of Debt:

Risk-Free Rate	3.37%
Implied Default Premium	1.70%
Pre-Tax Cost of Debt	5.07%
Marginal Tax Rate	24%
After-Tax Cost of Debt	3.87%

10Y Treasury

WCN 94106BAD3 2.95% maturing 01/52

Market Value of Common Equity:

Total Shares Outstanding	257,220
Current Stock Price	\$140.03
MV of Equity	36,018,565

MV Weights

83.55%

Market Value of Debt:

Current Portion of LTD	6,759
Long-Term Debt	6,890,149
PV of Operating Leases	192,506
MV of Total Debt	7,089,414

16.45%

Market Value of the Firm

43,107,978.77

100.00%

Estimated WACC

6.40%

Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

CV Growth of NOPLAT	2.50%
CV Year ROIC	36.60%
WACC	6.40%
Cost of Equity	6.90%
Noplat	2673370.59

EP Model:										
Economic Profit (EP)	787,168	1,066,319	1,260,304	1,421,083	1,567,617	1,707,882	1,848,563	1,994,784	2,147,152	2,205,925
Continuing Value (CV)										56,576,876
PV of EP	739,826	941,916	1,046,316	1,108,842	1,149,615	1,177,153	1,197,489	1,214,496	1,228,642	32,374,384
Total PV of EP	42,178,678									
Invested Capital (last FYE)	8,248,863									
Value of Operating Assets:	50,427,541									
Non-Operating Adjustments										
Excess cash	-									
Restricted cash and investments	170,826									
ROU assets	(192,506)									
Book overdraft	(23,411)									
Curr. Portion of Long term debt	(6,759)									
Long term debt	(6,890,149)									
Value of Equity	43,485,543									
Shares Outstanding	257,220									
Intrinsic Value of Last FYE	\$ 169.06									
Implied Price as of Today	\$ 171.36									

Waste Connections

Dividend Discount Model (DDM) or Fundamental P/E Valuation Model

Fiscal Years Ending Dec. 31	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
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EPS	\$ 4.01	\$ 5.16	\$ 6.03	\$ 6.79	\$ 7.53	\$ 8.26	\$ 9.01	\$ 9.79	\$ 10.62	\$ 11.09
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Key Assumptions

CV growth of EPS	2.50%
CV Year ROE	14.47%
Cost of Equity	6.90%

Future Cash Flows

P/E Multiple (CV Year)											18.81
EPS (CV Year)											\$ 11.09
Future Stock Price											\$ 208.64
Dividends Per Share	1.09	1.25	1.43	1.65	1.90	2.18	2.50	2.88	3.31		
Discounted Cash Flows	1.02	1.09	1.17	1.26	1.36	1.46	1.57	1.69	1.81	\$	114.47

Intrinsic Value as of Last FYE	\$ 126.90
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Implied Price as of Today	\$ 128.63
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Waste Connections

Relative Valuation Models

Ticker	Company	Price	EPS 2023E	EPS 2024E	P/E 23	P/E 24	EV	2023 EBITDA	Multiple
RSG	Republic Services	\$136.12	\$5.18	\$5.80	26.28	23.47	54,893	4,280	12.83
WM	Waste Management	\$163.53	\$6.00	\$6.73	27.26	24.30	81,347	5,905	13.78
GFL	GFL Environmental	\$34.15	\$0.50	\$0.74	68.30	46.15	20,617	1,487	13.86
CWST	Casella Waste Management	\$81.18	\$1.20	\$1.44	67.65	56.38	4,773	271.7	17.57
CLH	Clean Harbors	\$133.94	\$6.89	\$7.77	19.44	17.24	9,281	995.3	9.33

Average **41.78** **33.51** **2,588** **13.47**

WCN Waste Connections \$138.42 \$4.01 \$5.16 34.54 26.82 42,825 2,159 19.84

Implied Relative Value:

P/E (EPS23) \$ 167.45
P/E (EPS24) \$ 172.95
EV/EBITDA (EBITDA 23) \$ 86.56

Waste Connections
Key Management Ratios

Fiscal Years Ending Dec. 31		2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Liquidity Ratios:														
Current Ratio	Current Assets/Current Liabilities	1.37	0.84	0.74	1.45	2.04	2.63	3.21	3.80	4.37	4.92	5.46	5.98	6.57
Cash Ratio	Cash/Current Liabilities	0.60	0.12	0.05	0.69	1.28	1.87	2.45	3.03	3.60	4.16	4.69	5.21	5.80
Quick Ratio		1.21	0.70	0.60	1.30	1.89	2.47	3.06	3.64	4.21	4.77	5.31	5.83	6.42
Asset-Management Ratios:														
Total Asset Turnover	Sales/Total Assets	0.39	0.42	0.42	0.48	0.50	0.50	0.50	0.49	0.48	0.47	0.46	0.45	0.43
Current Asset Turnover	Sales/Current Assets	3.87	5.96	6.45	3.60	2.57	2.01	1.64	1.39	1.21	1.08	0.97	0.89	0.81
Fixed Asset Turnover	Sales/PPE	1.03	1.08	1.04	1.26	1.41	1.50	1.58	1.64	1.71	1.77	1.83	1.90	1.90
Financial Leverage Ratios:														
LT Debt to Equity	LT debt/ Total Equity	0.69	0.72	0.97	0.88	0.78	0.69	0.61	0.55	0.49	0.44	0.40	0.37	0.34
Debt Ratio	Total Debt/Total Assets	0.34	0.34	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26	0.24	0.23	0.21
LT Debt to Assets	LT Debt/ Total Assets	0.34	0.34	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26	0.24	0.23	0.21
Leverage Ratio	Total Debt/EBITDA	4.05	2.72	3.19	2.60	2.33	2.17	2.06	1.96	1.88	1.80	1.72	1.65	1.63
Profitability Ratios:														
Return on Equity	NI/Beg TSE	2.95%	9.00%	11.95%	14.50%	16.89%	17.48%	17.39%	17.03%	16.57%	16.10%	15.68%	15.31%	14.47%
ROA	NI/Total Assets	1.46%	4.20%	4.88%	5.63%	6.76%	7.38%	7.76%	8.02%	8.20%	8.34%	8.46%	8.56%	8.42%
Net Margin	NI/Total Revenue and Other Income	3.76%	10.05%	11.59%	11.78%	13.53%	14.70%	15.66%	16.50%	17.21%	17.87%	18.50%	19.11%	19.57%
Payout Policy Ratios:														
Dividend Payout Ratio	Dividend/EPS	97.37%	35.18%	29.38%	27.10%	24.19%	23.80%	24.27%	25.17%	26.38%	27.80%	29.39%	31.16%	34.28%
Total Payout Ratio	(Divs. + Repurchases)/NI	149.78%	90.41%	79.91%	27.10%	24.19%	23.80%	24.27%	25.17%	26.38%	27.80%	29.39%	31.16%	34.28%

Effects of ESOP Exercise and Share Repurchases on Common Stock Account and Number of Shares Outstanding

Current Average Strike Price:	\$ -
Cost of Equity:	6.90%
Current Stock Price:	\$140.03

[illegible]

Waste Connections*Present Value of Operating Lease Obligations*

Fiscal Years Ending Dec. 31	2016	2017	2018	2019
Year 1	26820	32510	37902	37902
Year 2	21528	27326	35204	35204
Year 3	17238	24499	32259	32259
Year 4	14850	18518	30974	30974
Year 5	12280	15378	27882	27882
Thereafter	69436	63895	94205	94205
Total Minimum Payments	162	182	258	258
Less: Cumulative Interest	34	34	49	49
PV of Minimum Payments	128	148	209	209

Implied Interest in Year 1 Payment		6.5	7.5	10.6
Pre-Tax Cost of Debt	5.07%	5.07%	5.07%	5.07%
Years Implied by Year 6 Payment	5.7	4.2	3.4	3.4
Expected Obligation in Year 6 & Beyond	12280	15378	27882	27882

Present Value of Lease Payments

PV of Year 1	25525.8	30941.3	36073.1	36073.1
PV of Year 2	19500.5	24752.5	31888.5	31888.5
PV of Year 3	14861.1	21120.9	27810.9	27810.9
PV of Year 4	12184.6	15194.2	25414.5	25414.5
PV of Year 5	9589.7	12009.0	21773.6	21773.6
PV of 6 & beyond	46142.1	43997.9	66087.1	66087.1
Capitalized PV of Payments	127803.8	148015.7	209047.8	209047.8

Waste Connections

Valuation of Options Granted under ESOP

Current Stock Price	\$133.62
Risk Free Rate	3.37%
Current Dividend Yield	0.80%
Annualized St. Dev. of Stock Returns	40.00%

Range of Outstanding Options	Number of Shares	Average Exercise Price	Average Remaining Life (yrs)	B-S Option Price	Value of Options Granted
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WCN Uses RSUs

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Waste Connections
Sensitivity Tables

Equity Risk Premium	DCF		Beta						
	171.36	0.34	0.44	0.54	0.64	0.74	0.84	0.94	
	5.20%	292.02	243.45	207.66	179.95	158.44	140.79	126.18	
	5.30%	288.32	240.01	204.47	177.00	155.71	138.25	123.80	
	5.40%	284.71	236.65	201.37	174.14	153.05	135.78	121.50	
	5.50%	281.17	233.37	198.36	171.36	150.47	133.38	119.26	
	5.60%	277.72	230.18	195.42	168.65	147.97	131.05	117.09	
	5.70%	274.34	227.06	192.55	166.01	145.53	128.79	114.98	
	5.80%	271.03	224.02	189.76	163.45	143.16	126.59	112.93	

CV of NOPLAT	DCF		Risk Free Rate						
	171.36	3.07%	3.17%	3.27%	3.37%	3.47%	3.57%	3.67%	
	2.20%	174.42	170.20	166.14	162.24	158.50	154.90	151.43	
	2.30%	177.79	173.39	169.18	165.13	161.25	157.52	153.93	
	2.40%	181.34	176.76	172.37	168.17	164.14	160.26	156.55	
	2.50%	185.09	180.31	175.73	171.36	167.17	163.14	159.29	
	2.60%	189.04	184.05	179.28	174.72	170.35	166.17	162.16	
	2.70%	193.22	188.00	183.02	178.26	173.71	169.35	165.18	
	2.80%	197.66	192.18	186.97	181.99	177.24	172.70	168.36	

CV growth of EPS	DDM		Dividend Growth					
	128.63	11.94%	12.94%	13.94%	15%	15.94%	16.94%	17.94%
	2.20%	122.67	123.07	123.50	123.94	124.41	124.90	125.42
	2.30%	124.14	124.55	124.98	125.44	125.91	126.42	126.94
	2.40%	125.67	126.09	126.53	127.00	127.48	128.00	128.53
	2.50%	127.28	127.70	128.16	128.63	129.13	129.65	130.20
	2.60%	128.95	129.39	129.85	130.34	130.84	131.38	131.94
	2.70%	130.71	131.16	131.63	132.13	132.64	133.19	133.76
	2.80%	132.56	133.02	133.50	134.00	134.53	135.09	135.68

Marginal Tax Rate	DCF		Pre-tax cost of debt						
	171.36	2.07%	3.07%	4.07%	5.07%	6.07%	7.07%	8.07%	
	15%	190.52	182.28	174.65	167.55	160.94	154.76	148.98	
	18%	191.16	183.16	175.73	168.80	162.34	156.29	150.62	
	21%	191.80	184.04	176.82	170.07	163.76	157.85	152.29	
	24%	192.44	184.93	177.92	171.36	165.21	159.43	153.99	
	27%	193.09	185.83	179.03	172.66	166.67	161.03	155.72	
	30%	193.74	186.73	180.16	173.98	168.16	162.67	157.48	
	33%	194.39	187.64	181.29	175.31	169.67	164.33	159.28	

Implied Depreciator	DCF		WACC						
	171.36	3.40%	4.40%	5.40%	6.40%	7.40%	8.40%	9.40%	
	8.81%	857.81	388.99	243.68	172.95	131.14	103.53	83.95	
	9.81%	852.02	386.71	242.46	172.23	130.70	103.26	83.80	
	10.81%	847.48	384.95	241.54	171.71	130.40	103.11	83.74	
	11.81%	844.01	383.64	240.88	171.36	130.22	103.04	83.74	
	12.81%	841.47	382.73	240.46	171.16	130.15	103.04	83.80	
	13.81%	839.73	382.15	240.23	171.09	130.17	103.12	83.91	
	14.81%	838.67	381.86	240.16	171.12	130.26	103.24	84.05	

CAPEX	DCF		SGA%						
	171.36	6.91%	7.91%	8.91%	9.91%	10.91%	11.91%	12.91%	
	678,496	207.92	199.19	190.46	181.73	173.01	164.28	155.55	
	728,496	204.46	195.73	187.00	178.27	169.55	160.82	152.09	
	778,496	201.00	192.27	183.54	174.82	166.09	157.36	148.63	
	828,496	197.54	188.81	180.09	171.36	162.63	153.90	145.17	
	878,496	194.08	185.35	176.63	167.90	159.17	150.44	141.72	
	928,496	190.62	181.90	173.17	164.44	155.71	146.98	138.26	
	978,496	187.17	178.44	169.71	160.98	152.25	143.53	134.80	