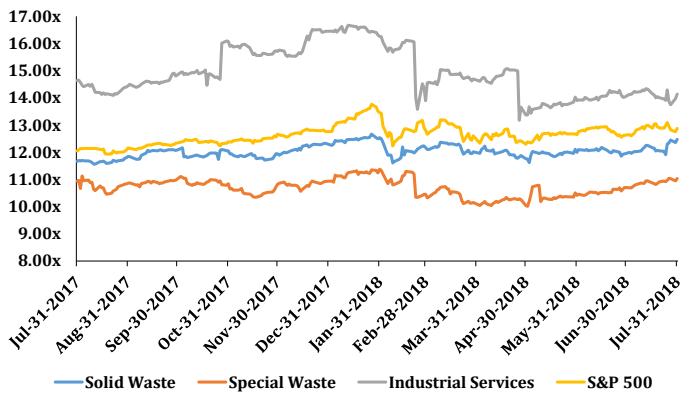


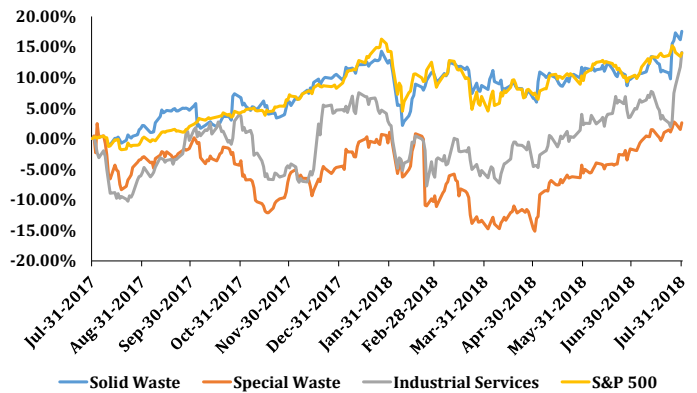
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Environmental Services LTM TEV/EBITDA



Environmental Services LTM Share Price (Shown as % change)



Indices Performance (% change)

	July 2018	LTM		July 2018	LTM
S&P 500	3.3%	14.0%	Solid Waste	7.2%	17.6%
Dow Jones	4.6%	16.1%	Special Waste	4.4%	2.6%
NASDAQ	1.4%	20.9%	Industrial Services	10.3%	14.1%

(Source: CapitalIQ)

Largest Environmental Services Movers and Losers (largest % changes in the month of July)

Heritage-Crystal Clean, Inc.	19.9%	Quest Resource Holding Corporation	(9.8%)
CECO Environmental Corp.	11.9%	Fuel Tech, Inc.	(9.3%)
Waste Management, Inc.	10.7%	Sharps Compliance Corp.	(4.6%)
Covanta Holding Corporation	9.1%	Advanced Disposal Services, Inc.	(0.7%)
Casella Waste Systems, Inc.	7.6%		

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Select Public Trading Statistics (as of 7/31/2018)

Solid Waste:

(\$ in millions, except per share data)

Company	Share Price 07/31/2018	% of 52 Wk High	Market Capitalization	Enterprise Value	Valuation Multiples			PE Multiples			LTM Operating Margins			Net Debt/EBITDA	
					TEV/Total Revenue	TEV/EBITDA	TEV/EBIT	LTM P/E	CY18 P/E	CY19 P/E	Gross	EBIT	EBITDA		
Waste Management, Inc.	WM	\$90.00	99.9%	\$38,585	\$48,336	3.3x	11.9x	18.4x	18.0x	23.1x	21.3x	38.0%	18.3%	28.0%	2.4x
Republic Services, Inc.	RSI	\$72.48	99.6%	\$23,599	\$31,800	3.2x	11.5x	19.4x	17.8x	23.9x	22.3x	38.2%	16.5%	27.7%	2.9x
Waste Connections, Inc.	WCN	\$77.61	98.1%	\$20,440	\$24,104	5.1x	16.1x	28.5x	29.2x	33.6x	29.8x	41.8%	17.9%	31.6%	2.4x
Advanced Disposal Services, Inc.	ADSW	\$24.60	95.3%	\$2,178	\$4,094	2.7x	10.2x	36.2x	46.6x	47.0x	40.4x	36.0%	6.9%	25.8%	4.8x
Casella Waste Systems, Inc.	CWST	\$27.56	99.6%	\$1,176	\$1,674	2.7x	14.6x	33.0x	NM	43.6x	36.4x	31.8%	7.9%	18.4x	4.4x
Attis Industries, Inc.	ATIS	\$0.39	10.8%	\$7	\$27	15.8x	NM	NM	NM	NM	NM	25.6%	NM	NM	(0.9x)
Mean				\$14,331	\$18,339	5.5x	12.8x	27.1x	27.9x	34.3x	30.1x	35.3%	13.5%	26.3%	2.7x
Median				\$11,309	\$14,099	3.2x	11.9x	28.5x	23.6x	33.6x	29.8x	37.0%	16.5%	27.7%	2.7x
High				\$38,585	\$48,336	15.8x	16.1x	36.2x	46.6x	47.0x	40.4x	41.8%	18.3%	31.6%	4.8x
Low				\$7	\$27	2.7x	10.2x	18.4x	17.8x	23.1x	21.3x	25.6%	6.9%	18.4%	-0.9x

Source: Capital IQ

Total Enterprise Value (TEV) = Market Capitalization + Preferred Equity + Debt + Minority Interest - Cash

LTM = Last Twelve Months

Special Waste:

(\$ in millions, except per share data)

Company	Share Price 07/31/2018	% of 52 Wk High	Market Capitalization	Enterprise Value	Valuation Multiples			PE Multiples			LTM Operating Margins			Net Debt/EBITDA	
					TEV/Total Revenue	TEV/EBITDA	TEV/EBIT	LTM P/E	CY18 P/E	CY19 P/E	Gross	EBIT	EBITDA		
Stericycle, Inc.	SRCL	\$69.86	83.9%	\$5,978	\$8,662	2.4x	12.2x	18.9x	NM	17.3x	16.6x	40.2%	12.0%	19.3%	3.8x
Darling Ingredients Inc.	DAR	\$20.09	98.6%	\$3,308	\$5,040	1.4x	8.8x	19.3x	15.3x	25.4x	23.0x	21.9%	3.7%	12.5%	3.5x
Clean Harbors, Inc.	CLH	\$56.93	97.5%	\$3,199	\$4,604	1.5x	10.7x	33.2x	29.7x	NM	NM	29.8%	5.1%	14.5%	3.1x
US Ecology, Inc.	ECOL	\$67.80	99.3%	\$1,486	\$1,719	3.3x	15.5x	24.6x	27.9x	29.2x	26.1x	31.0%	14.2%	21.9%	1.9x
Sharps Compliance Corp.	SMED	\$3.52	61.5%	\$57	\$53	1.3x	NM	NM	NM	NM	NM	28.4%	(1.4%)	2.5%	(3.2x)
Perma-Fix Environmental Services, Inc.	PESI	\$4.55	88.3%	\$54	\$55	1.1x	44.7x	NM	NM	NM	NM	23.0%	(0.7%)	3.9%	0.6x
Mean				\$2,347	\$3,356	1.8x	18.4x	24.0x	24.3x	24.0x	21.9x	29.0%	5.5%	12.4%	1.6x
Median				\$2,343	\$3,162	1.5x	12.2x	21.9x	27.9x	25.4x	23.0x	29.1%	4.4%	13.5%	2.5x
High				\$5,978	\$8,662	3.3x	44.7x	33.2x	29.7x	29.2x	26.1x	40.2%	14.2%	21.9%	3.8x
Low				\$54	\$53	1.1x	8.8x	18.9x	15.3x	17.3x	16.6x	21.9%	-1.4%	2.5%	(3.2x)

Source: Capital IQ

Total Enterprise Value (TEV) = Market Capitalization + Preferred Equity + Debt + Minority Interest - Cash

LTM = Last Twelve Months

Industrial Services:

(\$ in millions, except per share data)

Company	Share Price 07/31/2018	% of 52 Wk High	Market Capitalization	Enterprise Value	Valuation Multiples			PE Multiples			LTM Operating Margins			Net Debt/EBITDA	
					TEV/Total Revenue	TEV/EBITDA	TEV/EBIT	LTM P/E	CY18 P/E	CY19 P/E	Gross	EBIT	EBITDA		
Covanta Holding Corporation	CVA	\$18.00	99.7%	\$2,333	\$4,760	2.6x	14.3x	41.8x	7.5x	NM	NM	30.4%	6.1%	18.1%	7.3x
Heritage-Crystal Clean, Inc.	HCCI	\$24.10	95.6%	\$555	\$543	1.4x	14.0x	24.7x	24.9x	31.4x	22.4x	22.6%	5.7%	10.2%	(0.3x)
CECO Environmental Corp.	CECE	\$6.87	68.8%	\$239	\$296	0.9x	13.1x	41.5x	88.0x	31.6x	19.8x	33.9%	2.3%	7.1%	2.3x
Cypress Energy Partners, L.P.	CELP	\$7.40	87.1%	\$88	\$173	0.6x	11.3x	17.7x	13.1x	14.4x	NM	13.1%	4.0%	5.9%	3.9x
Ecology & Environment, Inc.	EEI	\$13.15	91.0%	\$57	\$42	0.4x	7.8x	9.7x	26.6x	NM	NM	44.7%	4.1%	5.1%	(3.0x)
Quest Resource Holding Corporation	QRHC	\$1.75	60.1%	\$27	\$31	0.3x	NM	NM	NM	NM	NM	14.1%	(4.0%)	(0.1%)	(24.3x)
Fuel Tech, Inc.	FTEK	\$0.98	53.6%	\$24	\$18	0.4x	NM	NM	NM	NM	NM	37.7%	(2.3%)	(0.1%)	79.9x
Industrial Services of America, Inc.	ISDA	\$2.10	77.8%	\$17	\$25	0.4x	10.9x	214.0x	NM	NM	NM	7.2%	1.5%	5.0%	3.0x
Mean				\$417	\$736	0.9x	11.9x	58.3x	32.0x	25.8x	21.1x	25.5%	2.2%	6.4%	8.6x
Median				\$73	\$108	0.5x	12.2x	33.1x	24.9x	31.4x	21.1x	26.5%	3.2%	5.5%	2.6x
High				\$2,333	\$4,760	2.6x	14.3x	214.0x	88.0x	31.6x	22.4x	44.7%	6.1%	18.1%	79.9x
Low				\$17	\$18	0.3x	7.8x	9.7x	7.5x	14.4x	19.8x	7.2%	-4.0%	-0.1%	(24.3x)

Source: Capital IQ

Total Enterprise Value (TEV) = Market Capitalization + Preferred Equity + Debt + Minority Interest - Cash

LTM = Last Twelve Months





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Select Mergers and Acquisitions & Capital Raising News

❖ Lakeshare Recycling Systems Acquires DuPage Disposal

July 11, 2018 – Lakeshare Recycling Systems (LRS), the Midwest’s leading independent recycling and waste diversion provider, has acquired West Chicago-based DuPage Disposal, a family-owned waste removal service specializing in residential waste and recycling collection for more than a decade. LRS will add more than 5,000 households in unincorporated DuPage, Kane and Cook counties to its coverage area as a result of the acquisition. The acquisition continues LRS’ westward expansion throughout northern Illinois and follows recent contract award announcements, which includes nearly 50,000 homes in the following municipalities: Lisle, Hinkley, Wheaton, St. Charles, Geneva and DeKalb. Financial terms were not disclosed and the acquisition is effective immediately.

❖ WCA Waste Corporation Acquires Freedom Waste, Jones Sanitation

July 11, 2018 – WCA Waste Corporation, a vertically integrated, non-hazardous solid waste services company, has announced its entry into the State of Kentucky with the acquisition of the vertically integrated solid waste operations of Freedom Waste Services, LLC (FWS) and Jones Sanitation, LLC. This acquisition includes the purchase of three hauling operations, three transfer stations and one municipal solid waste landfill operation. Located primarily in western Kentucky, FWS services approximately 20,000 customers and provides residential, commercial, roll-off and disposal services to residents and businesses in more than 16 counties.

❖ AMCS Acquires U.S.-based DesertMicro

July 30, 2018 – AMCS, a global supplier of integrated software and vehicle technology for the waste, recycling and resource industries, announced the acquisition of U.S.-based DesertMicro, a SaaS solutions provider for the waste industry, for an undisclosed sum. The acquisition follows the recent announcement that AMCS had successfully completed another round of investment from Insight Venture Partners and Ireland Strategic Investment Fund (ISIF). In January 2018, AMCS completed the acquisition of Brady Recycling solutions from Brady PLC and in recent years has completed eight other key acquisitions across the globe.

Select Industry News

❖ CalRecycle Awards Over \$25M for Organics Recycling Projects in California

July 5, 2018 – The California Department of Resources Recycling and Recovery (CalRecycle) has awarded more than \$25 million in California Climate Investments to bolster organics recycling infrastructure in the state and rescue edible food for Californians in need. The projects in 10 California communities are set to transform nearly a half-million tons of discarded food, green waste and other organic materials into value-added products like biofuel, compost, fertilizers and soil amendments.

❖ NASA Explores Technologies to Manage Waste in Space

July 6, 2018 – Managing waste and recyclables can be difficult on land, but it can be even more difficult in space due to storage challenges. To overcome these challenges, the National Aeronautics and Space Administration (NASA), which is gearing up to send humans far into space via its new Space Launch System and Orion capsule, is exploring technologies that can manage waste and recyclables both effectively and efficiently. Currently, the crews on spacecrafts receive supplies in the form of cargo resupply missions—as much as 12,000 kilograms of cargo is delivered each year. And in an effort to free up some of the space on the spacecrafts, the crews send their waste back down to land on the resupply vehicles. This system, which removes some of the waste, has its flaws, and while crews on smaller missions may be able to deal with the shortage of space on the spacecraft, crews on longer missions will likely not be able to give up precious space for waste. NASA is calling American industry experts to develop technologies that could effectively manage trash on future deep space missions to the moon and beyond. The agency wants to fly humans farther than ever before and has already started working on the vehicle and spacecraft for the project — the Space Launch System and Orion capsule. However, executing a mission like that also demands effective techniques for handling trash, which can easily create major storage challenges during a spaceflight.

❖ Lakeshare Recycling Systems Awarded Two Municipal Contracts in Illinois

July 13, 2018 – Lakeshare Recycling Systems (LRS), the Midwest’s leading independent recycling and waste diversion provider, has been awarded two new municipal contracts with St. Charles and Geneva, Illinois. Services for four-year residential contracts in both cities began July 1. St. Charles and Geneva represent LRS’ 21st and 22nd exclusive municipal contract awards, and the fourth municipal contract award in 2018, following the Village of Lisle and the Village of Hinkley. LRS is the exclusive hauler for nearly 220,000 households in greater Chicago and northern Illinois.



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❖ Waste Management Seeks HOS Short-Haul Exemption

July 20, 2018 – Waste Management Holdings is urging the Federal Motor Carrier Safety Administration (FMCSA) to grant the company a five-year hours of service (HOS) exemption that would allow 18,000 of its drivers to work extra hours without losing short-haul status. Under the recently enforced electronic logging device (ELD) mandate, drivers can operate under the federal HOS short-haul exemption if they have returned to their starting point and are off the clock within 12 hours of beginning their work day. Waste Management has stated that some drivers are already permitted to work up to 14 hours per shift without losing short-haul status. The company has maintained that ELDs have caused delays and distractions in its vehicles due to the stop-and-go nature of trash pickup. Waste Management also told FMCSA that these distractions have impacted driver and community safety.

❖ Waste Pro Signs Second Sponsorship with Jacksonville Jaguars

July 23, 2018 – Waste Pro has signed a four-year sponsorship with the Jacksonville Jaguars. The partnership began June 1 and will continue through the 2021-2022 NFL season. This is the second multiyear sponsorship Waste Pro has had with the Jaguars; the first began in 2011. Waste Pro has been providing waste and recycling collection services from a regional operations facility in Jacksonville since 2007. With this partnership, Waste Pro will provide solid waste collection and recycling for all home games at TIAA Bank Field, located in Jacksonville, Florida. Waste Pro will also service the Jacksonville Veterans Memorial Arena under a separate contract with SMG, which manages the arena and TIAA Bank Field, in addition to Bragan Field at the Baseball Grounds of Jacksonville and the Prime F. Osborn III Convention Center.

❖ Wastequip Names New CIO

July 25, 2018 – Wastequip, a North American manufacturer of waste handling equipment, has appointed Mike Marchetti as chief information officer (CIO). In his role, Marchetti will lead Wastequip's information technology (IT) strategy to focus on enhancing security measures, integrating a number of disparate systems across the company to increase efficiency and reduce costs, while identifying areas to leverage data and technology to grow the business. According to the company, Marchetti brings more than 20 years of IT experience and leadership expertise to his role. He most recently was the vice president of Truck Hero, Inc., providing best practices and solutions for the manufacturer of accessories for pickup trucks. Previously, he spent six years as chief information officer and vice president at Calumet Specialty Products Partners, L.P., where he managed and planned IT integration for 11 mergers worth more than \$3 billion in revenue.

❖ TerraCycle Recycles Millions of Cigarette Butts Nationwide

July 30, 2018 – Cigarette butts are the world's most littered item with nearly 4.5 trillion being tossed each year. Last year in the United States, it is estimated 1.69 billion pounds of butts ended up as toxic waste. TerraCycle is working with cities and municipalities globally to recycle cigarette butts. Since 2012, when TerraCycle launched its first cigarette recycling program, it has collected hundreds of millions of butts around the world. In 2017, in the United States alone, TerraCycle noted it collected tens of millions of cigarette butts from more than 50 cities. And six months into 2018, the company said it is poised to exceed those numbers.

❖ Waste Management Co-founder Larry Beck Dies at 90

July 31, 2018 – Lawrence "Larry" Beck, co-founder and key executive of Waste Management, died of complications of esophageal and stomach cancer on June 28 at the Perry Farm Village senior living community in Harbor Springs, Michigan. He was 90 years old. Beck began his career as a truck driver and owner of a small, south suburban trash hauling firm. In the early 1950s, he met his future wife of more than 62 years, Nancy Glennie. In 1953, Beck founded Atlas Refuse Disposal, a trash hauling firm in the south suburbs. In 1969, Beck's firm teamed with four other companies to buy a 150-acre landfill area in Calumet City, known as Calumet Industrial Development, to handle refuse from the south suburbs. He then partnered with former Waste Management CEO Dean Buntrock and the late H. Wayne Huizenga, and the three went public with Waste Management in 1971.

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