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FORM 10-K

Waste Connections, Inc. - WCN

Filed: February 14, 2019 (period: December 31, 2018)

Annual report with a comprehensive overview of the company

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2018

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File No. 1-34370



WASTE CONNECTIONS, INC.
(Exact name of registrant as specified in its charter)

Ontario, Canada
(State or other jurisdiction of incorporation or organization)

98-1202763
(I.R.S. Employer Identification No.)

610 Applewood Crescent, 2nd Floor
Vaughan
Ontario L4K 0E3
Canada
(Address of principal executive offices)

(905) 532-7510
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:
Common Shares, no par value **New York Stock Exchange**
(Title of each class) **Toronto Stock Exchange**
(Name of each exchange on which registered)

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.
Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).
Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

As of June 30, 2018, the aggregate market value of shares held by non-affiliates of the registrant, based on the closing sales price for the registrant's common shares, as reported on the New York Stock Exchange, was \$19,752,529,494.

Number of common shares outstanding as of February 1, 2019: 263,284,965

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Management Information Circular and Proxy Statement for the 2019 Annual and Special Meeting of Shareholders (which will be filed with the SEC pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and with the securities commissions or similar regulatory authorities in Canada within 120 days after the end of our 2018 fiscal year) are incorporated by reference into Part III hereof.

WASTE CONNECTIONS, INC.
ANNUAL REPORT ON FORM 10-K

TABLE OF CONTENTS

Item No.		Page
<u>PART I</u>		
<u>1.</u>	<u>BUSINESS</u>	<u>1</u>
<u>1A.</u>	<u>RISK FACTORS</u>	<u>22</u>
<u>1B.</u>	<u>UNRESOLVED STAFF COMMENTS</u>	<u>34</u>
<u>2.</u>	<u>PROPERTIES</u>	<u>34</u>
<u>3.</u>	<u>LEGAL PROCEEDINGS</u>	<u>34</u>
<u>4.</u>	<u>MINE SAFETY DISCLOSURE</u>	<u>34</u>
<u>PART II</u>		
<u>5.</u>	<u>MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED SHAREHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES</u>	<u>35</u>
<u>6.</u>	<u>SELECTED FINANCIAL DATA</u>	<u>37</u>
<u>7.</u>	<u>MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS</u>	<u>39</u>
<u>7A.</u>	<u>QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK</u>	<u>73</u>
<u>8.</u>	<u>FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA</u>	<u>75</u>
<u>9.</u>	<u>CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE</u>	<u>144</u>
<u>9A.</u>	<u>CONTROLS AND PROCEDURES</u>	<u>144</u>
<u>9B.</u>	<u>OTHER INFORMATION</u>	<u>144</u>
<u>PART III</u>		
<u>10.</u>	<u>DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE</u>	<u>145</u>
<u>11.</u>	<u>EXECUTIVE COMPENSATION</u>	<u>145</u>
<u>12.</u>	<u>SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED SHAREHOLDER MATTERS</u>	<u>145</u>
<u>13.</u>	<u>CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE</u>	<u>145</u>
<u>14.</u>	<u>PRINCIPAL ACCOUNTING FEES AND SERVICES</u>	<u>145</u>
<u>PART IV</u>		
<u>15.</u>	<u>EXHIBITS AND FINANCIAL STATEMENT SCHEDULES</u>	<u>146</u>
<u>SIGNATURES</u>		<u>151</u>
<u>SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS</u>		<u>152</u>

PART I

ITEM 1. BUSINESS

Our Company

Waste Connections, Inc. is the third largest non-hazardous solid waste services company in North America, providing waste collection, transfer, disposal and recycling services in mostly exclusive and secondary markets in the U.S. and Canada. Through our R360 Environmental Solutions subsidiary, we are also a leading provider of non-hazardous exploration and production, or E&P, waste treatment, recovery and disposal services in several of the most active natural resource producing areas in the U.S. We also provide intermodal services for the rail haul movement of cargo and solid waste containers in the Pacific Northwest through a network of intermodal facilities.

On June 1, 2016, pursuant to the terms of the Agreement and Plan of Merger dated as of January 18, 2016 (the “Merger Agreement”), Water Merger Sub LLC, a Delaware limited liability company and a wholly-owned subsidiary of Progressive Waste Solutions Ltd. (“Merger Sub”), merged with and into Waste Connections US, Inc. (f/k/a Waste Connections, Inc.), a Delaware corporation (“Old Waste Connections”) in an all-stock business combination with Old Waste Connections continuing as the surviving corporation and an indirect wholly-owned subsidiary of Waste Connections, Inc. (f/k/a Progressive Waste Solutions Ltd.), a corporation organized under the laws of Ontario, Canada (“New Waste Connections,” “Waste Connections” or the “Company”). We use the term “Progressive Waste acquisition” herein to refer to the transactions completed under the Merger Agreement, and we use the term “Progressive Waste” herein in the context of references to Progressive Waste Solutions Ltd. and its shareholders prior to the completion of the Progressive Waste acquisition on June 1, 2016. All references to “dollars” or “\$” used herein refer to U.S. dollars, and all references to CAD \$ used herein refer to Canadian dollars, unless otherwise stated.

As of December 31, 2018, we served residential, commercial, industrial and E&P customers in 41 states in the U.S. and six provinces in Canada: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Wisconsin and Wyoming, and the provinces of Alberta, British Columbia, Manitoba, Ontario, Québec and Saskatchewan.

Our senior management team has extensive experience in operating, acquiring and integrating non-hazardous waste services businesses, and we intend to continue to focus our efforts on both internal and acquisition-based growth. We anticipate that a part of our future growth will come from acquiring additional waste businesses and, therefore, we expect that additional acquisitions could continue to affect period-to-period comparisons of our operating results.

Our Operating Strategy

Our operating strategy seeks to improve financial returns and deliver superior shareholder value creation within the solid waste industry. We generally seek to avoid highly competitive, large urban markets and instead target markets where we can attain high market share either through exclusive contracts, vertical integration or asset positioning. We also target niche markets, like E&P waste treatment and disposal services, with similar characteristics and, we believe, higher comparative growth potential. We are a leading provider of waste services in most of our markets, and the key components of our operating strategy, which are tailored to the competitive and regulatory factors that affect our markets, are as follows:

Target Secondary and Rural Markets. By targeting secondary and rural markets, we believe that we are able to achieve a higher local market share than would be attainable in more competitive urban markets, which we believe reduces our exposure to customer chum and improves financial returns. In certain niche markets, like E&P waste treatment and disposal, early mover advantage in certain rural basins may improve market positioning and financial returns given the limited availability of existing third-party-owned waste disposal alternatives.

Control the Waste Stream. In markets where waste collection services are provided under exclusive arrangements, or where waste disposal is municipally owned or funded or available at multiple sources, we believe that controlling the waste stream by providing collection services under exclusive arrangements is often more important to our growth and profitability than owning or operating landfills. In addition, in certain E&P markets with “no pit” rules or other regulations that limit on-site storage or treatment of waste, control of the waste stream allows us to generate additional service revenue from the transportation, treatment and disposal of waste, thus increasing the overall scope and value of the services provided.

Optimize Asset Positioning. We believe that the location of disposal sites within competitive markets is a critical factor to success in the waste services industry. Given the importance of and costs associated with the transportation of waste to treatment and disposal sites, having disposal capacity proximate to the waste stream may provide a competitive advantage and serve as a barrier to entry.

Provide Vertically Integrated Services. In markets where we believe that owning landfills is a strategic advantage to a collection operation because of competitive and regulatory factors, we generally focus on providing integrated services, from collection through disposal of solid waste in landfills that we own or operate. Similarly, we see this strategic advantage in E&P waste services where we offer closed loop systems for liquid and solid waste storage, transportation, treatment, and disposal.

Manage on a Decentralized Basis. We manage our operations on a decentralized basis. This places decision-making authority closer to the customer, enabling us to identify and address customers' needs quickly in a cost-effective manner. We believe that decentralization provides a low-overhead, highly efficient operational structure that allows us to expand into geographically contiguous markets and operate in relatively small communities that larger competitors may not find attractive. We believe that this structure gives us a strategic competitive advantage, given the relatively rural nature of many of the markets in which we operate, and makes us an attractive buyer to many potential acquisition candidates.

As of December 31, 2018, we delivered our services from operating locations grouped into six operating segments: our Southern segment services customers located in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, southern Oklahoma, western Tennessee and Texas; our Western segment services customers located in Alaska, California, Idaho, Montana, Nevada, Oregon, Washington and western Wyoming; our Eastern segment services customers located in Illinois, Iowa, Kentucky, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, eastern Tennessee, Vermont, Virginia and Wisconsin; our Canada segment services customers located in the state of Michigan and in the provinces of Alberta, British Columbia, Manitoba, Ontario, Québec and Saskatchewan; and our Central segment services customers located in Arizona, Colorado, Kansas, Minnesota, Missouri, Nebraska, New Mexico, Oklahoma, South Dakota, western Texas, Utah and eastern Wyoming. The E&P segment services E&P customers located in Arkansas, Louisiana, New Mexico, North Dakota, Oklahoma, Texas, Wyoming and along the Gulf of Mexico. Some E&P revenues are also included in other operating segments, where we accept E&P waste at some of our municipal solid waste, or MSW landfills. In addition, a small amount of solid waste revenue is included in our E&P segment.

We manage and evaluate our business on the basis of the operating segments' geographic characteristics, interstate waste flow, revenue base, employee base, regulatory structure, and acquisition opportunities. Each operating segment has a regional vice president and a regional controller reporting directly to our corporate management. These regional officers are responsible for operations and accounting in their operating segments and supervise their regional staff. See Note 14 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K for further information on our segment reporting of our operations.

Each operating location has a district or site manager who has a high degree of decision-making authority for his or her operations and is responsible for maintaining service quality, promoting safety, implementing marketing programs and overseeing day-to-day operations, including contract administration. Local managers also help identify acquisition candidates and are responsible for integrating acquired businesses into our operations and obtaining the permits and other governmental approvals required for us to operate.

Implement Operating Standards. We develop company-wide operating standards, which are tailored for each of our markets based on industry norms and local conditions. We implement cost controls and employee training and safety procedures and establish a sales and marketing plan for each market. By internalizing the waste stream of acquired operations, we can further increase operating efficiencies and improve capital utilization. We use a wide-area information system network, implement financial controls and consolidate certain accounting, personnel and customer service functions. While regional and district management operate with a high degree of autonomy, our executive officers monitor regional and district operations and require adherence to our accounting, purchasing, safety, marketing, legal and internal control policies, particularly with respect to financial matters. Our executive officers regularly review the performance of regional officers, district managers and operations. We believe we can improve the profitability of existing and newly acquired operations by establishing operating standards, closely monitoring performance and streamlining certain administrative functions.

Our Growth Strategy

We tailor the components of our growth strategy to the markets in which we operate and into which we hope to expand.

Obtain Additional Exclusive Arrangements. Our operations include market areas where we have exclusive arrangements, including franchise agreements, municipal contracts and governmental certificates, under which we are the exclusive service provider for a specified market. These exclusive rights and contractual arrangements create a barrier to entry that is usually obtained through the acquisition of a company with such exclusive rights or contractual arrangements or by winning a competitive bid.

We devote significant resources to securing additional franchise agreements and municipal contracts through competitive bidding and by acquiring other companies. In bidding for franchises and municipal contracts and evaluating acquisition candidates holding governmental certificates, our management team draws on its experience in the waste industry and knowledge of local service areas in existing and target markets. Our district management and sales and marketing personnel maintain relationships with local governmental officials within their service areas, maintain, renew and renegotiate existing franchise agreements and municipal contracts, and secure additional agreements and contracts while targeting acceptable financial returns. Our sales and marketing personnel also expand our presence into areas adjacent to or contiguous with our existing markets, and market additional services to existing customers. We believe our ability to offer comprehensive rail haul disposal services in the Pacific Northwest improves our competitive position in bidding for such contracts in that region.

Generate Internal Growth. To generate internal revenue growth, our district management and sales and marketing personnel focus on increasing market penetration in our current and adjacent markets, soliciting new customers in markets where such customers have the option to choose a particular waste collection service and marketing upgraded or additional services (such as compaction or automated collection) to existing customers. We also seek price increases necessary to offset increased costs, to improve operating margins and to obtain adequate returns on our deployed capital. Where possible, we intend to leverage our franchise-based platforms to expand our customer base beyond our exclusive market territories. As customers are added in existing markets, our revenue per routed truck increases, which generally increases our collection efficiencies and profitability. In markets in which we have exclusive contracts, franchises and governmental certificates, we expect internal volume growth generally to track population and business growth.

In niche disposal markets, like E&P, our focus is on increasing market penetration, and providing additional service offerings in existing markets where appropriate. In addition, we focus on developing and permitting new treatment and disposal sites in new and existing E&P markets to position ourselves to capitalize on current and future drilling activity in those areas.

Expand Through Acquisitions. We intend to expand the scope of our operations by continuing to acquire waste businesses in new markets and in existing or adjacent markets that are combined with or “tucked-in” to our existing operations. We focus our acquisition efforts on markets that we believe provide significant growth opportunities for a well-capitalized market entrant and where we can compete efficiently with potential new competitors. This focus typically highlights markets in which we can: (1) provide waste collection services under exclusive arrangements such as franchise agreements, municipal contracts and governmental certificates; (2) gain a leading market position and provide vertically integrated collection and disposal services; or (3) gain a leading market position in a niche market through the provision of treatment and disposal services. We believe that our experienced management, decentralized operating strategy, financial strength, size and public company status make us an attractive buyer to certain waste collection and disposal acquisition candidates. We have developed an acquisition discipline based on a set of financial, market and management criteria to evaluate opportunities. Once an acquisition is closed, we seek to integrate it while minimizing disruption to our ongoing operations and those of the acquired business.

In new markets, we often use an initial acquisition as an operating base and seek to strengthen the acquired operation's presence in that market by providing additional services, adding new customers and making “tuck-in” acquisitions of other waste companies in that market or adjacent markets. We believe that many suitable “tuck-in” acquisition opportunities exist within our current and targeted market areas that may provide us with opportunities to increase our market share and route density.

The North America solid waste services industry has experienced continued consolidation over the past decade, most notably with the sale of the U.S. solid waste business of Veolia Environnement S.A. to Advanced Disposal Services, Inc. in 2012, and our acquisition of Progressive Waste in June 2016. In spite of this consolidation, the solid waste services industry remains regional in nature, with acquisition opportunities available in select markets. The E&P waste services industry is similarly regional in nature and is also highly fragmented, with acquisition opportunities available in several active natural resource basins. In some markets in both MSW and E&P waste, independent landfill, collection or service providers lack the capital resources, management skills and/or technical expertise necessary to comply with stringent environmental and other governmental regulations and to compete with larger, more efficient, integrated operators. In addition, many of the remaining independent operators may wish to sell their businesses to achieve liquidity in their personal finances or as part of their estate planning.

During the year ended December 31, 2018, we completed 20 acquisitions for consideration having a net fair value of \$1.032 billion. During the year ended December 31, 2017, we completed 14 acquisitions for consideration having a net fair value of \$562.2 million. During 2016, we acquired Progressive Waste for consideration transferred having a net fair value of \$5.162 billion. During the year ended December 31, 2016, we completed 12 other acquisitions for consideration having a net fair value of \$17.1 million.

WASTE SERVICES

Collection Services

We provide collection services to residential, commercial, municipal, industrial and E&P customers. Our services are generally provided under one of the following arrangements: (1) governmental certificates; (2) exclusive franchise agreements; (3) exclusive municipal contracts; (4) residential subscriptions; (5) residential contracts; or (6) commercial, industrial and E&P service agreements.

Governmental certificates, exclusive franchise agreements and exclusive municipal contracts grant us rights to provide MSW services within specified areas at established rates and are long-term in nature. Governmental certificates, or G Certificates, are unique to the State of Washington and are awarded by the Washington Utilities and Transportation Commission, or WUTC, to solid waste collection service providers in unincorporated areas and electing municipalities. These certificates typically grant the holder 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 WUTC on specified, limited grounds. Franchise agreements typically provide an exclusive period of seven years or longer for a specified territory; they specify a broad range of services to be provided, establish rates for the services and can give the service provider a right of first refusal to extend the term of the agreement. Municipal contracts typically provide a shorter service period and a more limited scope of services than franchise agreements and generally require competitive bidding at the end of the contract term. In markets where exclusive arrangements are not available, we may enter into residential contracts with homeowners' associations, apartment owners and mobile home park operators, or work on a subscription basis with individual households. In such markets, we may also provide commercial and industrial services under customer service agreements generally ranging from one to five years in duration. Finally, in certain E&P markets with "no pit" rules or other regulations that limit on-site storage or treatment of waste, we offer containers and collection services to provide a closed loop system for the collection of drilling wastes at customers' well sites and subsequent transportation of the waste to our facilities for treatment and disposal.

Landfill Disposal Services

As of December 31, 2018, we owned or operated 68 MSW landfills, 11 E&P waste landfills, which only accept E&P waste, and 14 non-MSW landfills, which only accept construction and demolition, industrial and other non-putrescible waste. Nine of our MSW landfills also received E&P waste during 2018. We generally own landfills to achieve vertical integration in markets where the economic and regulatory environments make landfill ownership attractive. We also own landfills in certain markets where it is not necessary to provide collection services because we believe that we are able to attract volume to our landfills, given our location or other market dynamics. Over time, MSW landfills generate a greenhouse gas, methane, which can be converted into a valuable source of clean energy. We deploy gas recovery systems at 52 of our landfills to collect methane, which can then be used to generate electricity for local households, fuel local industrial power plants or power alternative fueled vehicles. In some cases, landfill gas generated at our landfills qualifies as a renewable fuel for which renewable fuel credits may be available.

For landfills we operate but do not own, the owner of the property, generally a municipality, usually holds the permit and we operate the landfill pursuant to a landfill operating agreement for a contracted term, which may be the life of the landfill. Where the contracted term is not the life of the landfill, the property owner is generally responsible for final capping, closure and post-closure obligations. We are responsible for all final capping, closure and post-closure obligations at our operated landfills for which we have life-of-site agreements.

The expiration dates for the four operating agreements for which the contracted term is less than the life of the landfill range from 2022 to 2028. We intend to seek renewal of all four contracts prior to, or upon, their expiration.

Based on remaining permitted capacity as of December 31, 2018, and projected annual disposal volumes, the average remaining landfill life for our owned and operated landfills and landfills operated, but not owned, under life-of-site agreements, is estimated to be approximately 26 years. Many of our existing landfills have the potential for expanded disposal capacity beyond the amount currently permitted. We regularly consider whether it is advisable, in light of changing market conditions and/or regulatory requirements, to seek to expand or change the permitted waste streams or to seek other permit modifications. We also monitor the available permitted in-place disposal capacity of our landfills on an ongoing basis and evaluate whether to seek capacity expansion using a variety of factors.

We are currently seeking to expand permitted capacity at 14 of our landfills, for which we consider expansions to be probable. Although we cannot be certain that all future expansions will be permitted as designed, the average remaining landfill life for our owned and operated landfills and landfills operated, but not owned, under life-of-site agreements is estimated to be approximately 29 years when considering remaining permitted capacity, probable expansion capacity and projected annual disposal volume.

The following table reflects estimated landfill capacity and airspace changes, as measured in tons, for owned and operated landfills and landfills operated, but not owned, under life-of-site agreements (in thousands):

	2018			2017		
	Permitted	Probable Expansion	Total	Permitted	Probable Expansion	Total
Balance, beginning of year	1,170,671	183,626	1,354,297	1,104,362	237,453	1,341,815
Acquired landfills	39,990	21,536	61,526	-	-	-
Divested landfills	-	-	-	(13,912)	(2,192)	(16,104)
Permits granted	32,997	(32,997)	-	102,648	(102,648)	-
Airspace consumed	(44,989)	-	(44,989)	(43,059)	-	(43,059)
Expansions initiated	-	-	-	-	74,762	74,762
Changes in engineering estimates	(8,125)	(762)	(8,887)	20,632	(23,749)	(3,117)
Balance, end of year	<u>1,190,544</u>	<u>171,403</u>	<u>1,361,947</u>	<u>1,170,671</u>	<u>183,626</u>	<u>1,354,297</u>

The estimated remaining operating lives for the landfills we own and landfills we operate under life-of-site agreements, based on remaining permitted and probable expansion capacity and projected annual disposal volume, in years, as of December 31, 2018, and December 31, 2017, are shown in the tables below. The estimated remaining operating lives include assumptions that the operating permits are renewed.

	2018						
	0 to 5	6 to 10	11 to 20	21 to 40	41 to 50	51+	Total
Owned and operated landfills	4	6	19	26	9	17	81
Operated landfills under life-of-site agreements	-	1	-	4	1	2	8
	<u>4</u>	<u>7</u>	<u>19</u>	<u>30</u>	<u>10</u>	<u>19</u>	<u>89</u>

	2017						
	0 to 5	6 to 10	11 to 20	21 to 40	41 to 50	51+	Total
Owned and operated landfills	5	2	15	31	9	16	78
Operated landfills under life-of-site agreements	1	1	-	3	-	3	8
	<u>6</u>	<u>3</u>	<u>15</u>	<u>34</u>	<u>9</u>	<u>19</u>	<u>86</u>

The disposal tonnage that we received in 2018 and 2017 at all of our landfills is shown in the tables below (tons in thousands):

	Three months ended								Twelve months ended December 31, 2018
	March 31, 2018		June 30, 2018		September 30, 2018		December 31, 2018		
	Number of Sites	Total Tons	Number of Sites	Total Tons	Number of Sites	Total Tons	Number of Sites	Total Tons	
Owned operational landfills and landfills operated under life-of-site agreements	88	9,910	89	11,386	89	12,091	89	11,602	44,989
Operated landfills	4	126	4	137	4	136	4	132	531
	<u>92</u>	<u>10,036</u>	<u>93</u>	<u>11,523</u>	<u>93</u>	<u>12,227</u>	<u>93</u>	<u>11,734</u>	<u>45,520</u>

	Three months ended								Twelve months ended December 31, 2017
	March 31, 2017		June 30, 2017		September 30, 2017		December 31, 2017		
	Number of Sites	Total Tons	Number of Sites	Total Tons	Number of Sites	Total Tons	Number of Sites	Total Tons	
Owned operational landfills and landfills operated under life-of-site agreements	87	9,455	87	11,388	86	11,462	86	10,754	43,059
Operated landfills	6	127	6	140	6	135	4	125	527
	<u>93</u>	<u>9,582</u>	<u>93</u>	<u>11,528</u>	<u>92</u>	<u>11,597</u>	<u>90</u>	<u>10,879</u>	<u>43,586</u>

Transfer Station and Intermodal Services

We own or operate MSW transfer stations and E&P waste transfer stations with marine access. Transfer stations receive, compact and/or load waste to be transported to landfills or treatment facilities via truck, rail or barge. They extend our direct-haul reach and link collection operations or waste generators with distant disposal or treatment facilities by concentrating the waste stream from a wider area and thus providing better utilization rates and operating efficiencies.

Intermodal logistics is the movement of containers using two or more modes of transportation, usually including a rail or truck segment. We provide these services for railing containerized international import and export goods through the Pacific Northwest, along with the transport of MSW waste and industrial construction debris. Additionally we operate two intermodal facilities primarily for the shipment of waste by rail to distant disposal facilities that we do not own. Our fleet of double-stack railcars provides dedicated direct-line haul services among terminals in Portland, Boardman, Tacoma and Seattle. We have a contract with Union Pacific railroad for the movement of containers among our intermodal operations. We also provide our customers container and chassis sales and leasing services.

We have increased the amount of waste we transport by rail to our landfills and intend to further expand our intermodal business through cross-selling efforts with our solid waste services operations. We believe that a significant amount of solid waste is transported currently by truck, rail and barge from primarily the Seattle-Tacoma and Metro Portland areas to remote landfills in Eastern Washington and Eastern Oregon. We believe our ability to market both intermodal and disposal services will enable us to more effectively compete for these volumes.

Recycling Services

We offer residential, commercial, industrial and municipal customers recycling services for a variety of recyclable materials, including compost, cardboard, mixed paper, plastic containers, glass bottles and ferrous and aluminum metals. We own or operate recycling operations and market other collected recyclable materials to third parties for processing before resale. The majority of the recyclables we process for sale are paper products and are shipped to customers in the United States and other markets, including Asia. Changes in end market demand as well as other factors can cause fluctuations in the prices for such commodities, which can affect revenue, operating income and cash flows. We believe that recycling will continue to be an important component of local and state solid waste management plans due to the public's increasing environmental awareness and expanding regulations that mandate or encourage recycling. That said, we also believe that the costs of processing recyclables, which have historically been subsidized by the sale of recycled commodities, need to be fully recognized. To that end, we have increased the fees that we charge at our recycling facilities to more fully reflect the processing costs associated with the separation of recyclables into marketable commodities. In some instances, we will look to pass the risk associated with the volatility of recycled commodity prices onto our customers.

E&P Waste Treatment, Recovery and Disposal Services

E&P waste is a broad term referring to the by-products resulting from oil and natural gas exploration and production activity. These generally include: waste created throughout the initial drilling and completion of an oil or natural gas well, such as drilling fluids, drill cuttings, completion fluids and flowback water; production wastes and produced water during a well's operating life; contaminated soils that require treatment during site reclamation; and substances that require clean-up after a spill, reserve pit clean-up or pipeline rupture. E&P customers are oil and natural gas exploration and production companies operating in the areas that we serve. E&P revenue is therefore driven by vertical and horizontal drilling, hydraulic fracturing, production and clean-up activity; it is complemented by other services including closed loop collection systems and the sale of recovered products. E&P activity varies across market areas which are tied to the natural resource basins in which the drilling activity occurs and reflects the regulatory environment, pricing and disposal alternatives available in any given market.

We provide E&P waste treatment, recovery and/or disposal services from a network of E&P waste landfills, MSW landfills that also receive E&P waste, E&P liquid waste injection wells and E&P waste treatment and oil recovery facilities. Treatment processes vary by site and regulatory jurisdiction. At certain treatment facilities, loads of flowback and produced water and other drilling and production wastes delivered by our customers are sampled, assessed and tested by third parties according to state regulations. Solids contained in a waste load are deposited into a land treatment cell where liquids are removed from the solids and are sent through an oil recovery system before being injected into saltwater disposal injection wells or placed in evaporation cells that utilize specialized equipment to accelerate evaporation of liquids. In certain locations, fresh water is then added to the remaining solids in the cell to “wash” the solids several times to remove contaminants, including oil and grease, chlorides and other contaminants, to ensure the solids meet specific regulatory criteria that, in certain areas, are administered by third-party labs and submitted to the regulatory authorities.

COMPETITION

The North America MSW services industry is highly competitive and requires substantial labor and capital resources. Our competition includes three national, publicly-held solid waste companies – Waste Management, Inc., Republic Services, Inc. and Advanced Disposal Services, Inc.; several regional, publicly held and privately owned companies; and several thousand small, local, privately owned companies, including independent waste brokers, some of which we believe have accumulated substantial goodwill in their markets. We compete for collection, transfer and disposal volume based primarily on the price and, to a lesser extent, quality of our services. We also compete with operators of alternative disposal facilities, including incinerators, and with counties, municipalities and solid waste districts that maintain their own waste collection and disposal operations. Public sector operators may have financial and other advantages over us because of their access to user fees and similar charges, tax revenues, tax-exempt financing and the ability to flow-control waste streams to publicly owned disposal facilities.

From time to time, competitors may reduce the price of their services in an effort to expand their market shares or service areas or to win competitively bid municipal contracts. These practices may cause us to reduce the price of our services or, if we elect not to do so, to lose business. We provide a significant amount of our residential, commercial and industrial collection services under exclusive franchise and municipal contracts and G Certificates. Exclusive franchises and municipal contracts may be subject to periodic competitive bidding. Competition in the solid waste industry is also affected by the increasing national emphasis in the U.S. and Canada on recycling and other waste reduction programs, which may reduce the volume of waste we collect or deposit in our landfills.

The U.S. and Canadian MSW services industries have undergone significant consolidation, and we encounter competition in our efforts to acquire collection operations, transfer stations and landfills. We generally compete for acquisition candidates with publicly owned regional and national waste management companies. Accordingly, it may become uneconomical for us to make further acquisitions or we may be unable to locate or acquire suitable acquisition candidates at price levels and on terms and conditions that we consider appropriate, particularly in markets we do not already serve.

Competition for E&P waste comes primarily from smaller regional companies that utilize a variety of disposal methods and generally serve specific geographic markets. We also compete in certain markets with publicly held and privately owned companies such as Waste Management, Inc., Republic Services, Inc., Clean Harbors, Inc., Secure Energy Services Inc., Nuvera Environmental Solutions, Trinity Environmental Services, LLC, Ecoserv, NRC Group Holdings, LLC, PetroWaste Environmental LLP, Tervita Corporation and others. In addition, customers in many markets have the option of using internal disposal methods or outsourcing to another third-party disposal company. The principal competitive factors in this business include: gaining customer approval of treatment and disposal facilities; location of facilities in relation to customer activity; reputation; reliability of services; track record of environmental compliance; ability to accept multiple waste types at a single facility; and price.

The intermodal services industry is also highly competitive. We compete against other intermodal rail services companies, trucking companies and railroads, many of which have greater financial and other resources than we do. Competition is based primarily on price, reliability and quality of service.

REGULATION

Introduction

Our operations in the United States and Canada, including landfills, transfer stations, solid waste transportation, intermodal operations, vehicle maintenance shops, fueling facilities and oilfield waste treatment, recovery and disposal operations, are all subject to extensive and evolving federal, state, provincial and, in some instances, local environmental, health and safety laws and regulations, the enforcement of which has become increasingly stringent. These laws and regulations may, among other things, require securing permits or other authorizations (collectively, “permits”) for regulated activities; govern the amount and type of substances that may be released or emitted into the environment in connection with our operations; impose clean-up or corrective action responsibility for releases of regulated substances into the environment; restrict the way we handle, manage or dispose of wastes; limit or prohibit our activities in sensitive areas such as wetlands, wilderness areas or areas inhabited by endangered or threatened species; require investigatory and remedial actions to mitigate pollution conditions caused by our operations or attributable to former operations; and impose specific standards addressing worker protection and health. Compliance is often costly or difficult, and the violation of these laws and regulations may result in the denial or revocation of permits, issuance of corrective action orders, assessment of administrative and civil penalties and even criminal prosecution.

In many instances in the United States, liability is often “strict,” meaning it is imposed without a requirement of intent or fault on the part of the regulated entity. The environmental regulations that affect us in the United States are generally administered by the Environmental Protection Agency, or the EPA, and other federal, state and local agencies having jurisdiction over our U.S. operations.

The environmental legislation that affects us in Canada is administered by federal and provincial regulatory agencies, which have jurisdiction over certain aspects of our Canadian operations. The relevant Canadian federal environmental legislation that affects our operations is administered by federal departments such as Environment and Climate Change Canada. Provincial and local agencies and departments administer their own environmental legislation, such as the Ontario Ministry of the Environment, Conservation and Parks. In most instances in Canada, regulatory liability for environmental and health and safety matters is imposed without a requirement of intent on the part of the regulated entity, but is subject to a defense of due diligence.

Compliance with existing environmental regulatory requirements and permits requires significant capital and operating expenditures. It is possible that substantial costs for compliance or penalties for non-compliance may be incurred in the future. We believe that in recent years, environmental regulation of the industry has increased as have the number of enforcement actions brought by regulatory agencies. It is also possible that other developments, such as the adoption of additional or more stringent environmental laws, regulations and enforcement policies, could result in additional costs or liabilities that we cannot currently foresee or quantify. Moreover, changes in environmental laws or regulations could reduce the demand for our services and adversely impact our business. We also expend significant resources (both administrative and financial) directed toward development, expansion, acquisition, and permitting of landfills, transfer stations, and other facilities we operate. Regarding any permit issued by a regulatory agency necessary for our operations, there are no assurances that we will be able to obtain or maintain all necessary permits or that any such permit held may ultimately be renewed on the same or similar terms. Further, permits obtained impose various requirements and may restrict the size and location of disposal operations, impose limits on the types and amount of waste a facility may receive or manage, as well as a waste disposal facility’s overall capacity. Additional operational conditions or restrictions may be included in the renewal or amendment of a previously issued permit. As regulations change, our permit requirements could become more stringent and compliance may require material expenditures at our facilities, impose significant operational restraints, or require new or additional financial assurance related to our operations. Regarding any permit that has been issued, it remains subject to renewal, modification, suspension or revocation by the agency with jurisdiction.

Various laws impose clean-up or remediation liability on responsible parties, which are discussed in more detail below. Substances subject to clean-up liability have been or may have been disposed of or released on or under certain of our facility sites. At some of our facilities, we have conducted and continue to conduct monitoring or remediation of known soil and groundwater contamination and, as required, we will continue to perform such work. It is possible that monitoring or remediation could be required in the future at other facilities we own or operate or previously owned or operated. These monitoring and remediation efforts are usually overseen by environmental regulatory agencies. Further, it is not uncommon for neighboring landowners and other third parties to file claims for personal injury or property damage allegedly caused by the release of regulated substances into the environment. In addition, from time to time, our intermodal services business undertakes the transport of hazardous materials. This transportation function is also regulated by various federal, state, provincial and potentially local agencies.

A number of major statutes and regulations apply to our operations, which are generally enforced by regulatory agencies. Typically, in the United States, federal statutes establish the general regulatory requirements governing our operations, but in many instances these programs are delegated to the states, which have independent and sometimes more strict regulation. In Canada, it is typically provincial statutes that establish the primary regulatory requirements governing our waste operations. Federal statutes in Canada govern certain aspects of waste management, including international and interprovincial transport of certain kinds of waste. Certain of these statutes in the United States and Canada contain provisions that authorize, under certain circumstances, lawsuits by private citizens to enforce certain statutory provisions. In addition to penalties, some of these statutes authorize an award of attorneys’ fees to parties that successfully bring such an action. Enforcement actions for a violation of these statutes or for a violation of or failure to have a permit, which is required by certain of these statutes, may include administrative, civil and criminal/regulatory penalties, as well as injunctive relief in some instances. In our ordinary course of business, we incur significant costs complying with these regulations and applicable standards.

A brief description of certain of the primary statutes affecting our operations is discussed below.

Laws and Regulations

A. Waste and Hazardous Substances

1. The Resource Conservation and Recovery Act of 1976, or RCRA

In the United States, RCRA regulates the generation, treatment, storage, handling, transportation and disposal of hazardous and non-hazardous waste and requires states to develop programs to ensure the safe disposal of solid waste. Regulations promulgated under RCRA impose broad requirements on the waste management industry. In October 1991, the EPA adopted what are known as the Subtitle D Regulations, which govern solid non-hazardous waste landfills. The Subtitle D Regulations establish, among other things, location restrictions, minimum facility design and performance standards, operating criteria, closure and post-closure requirements, financial assurance requirements, groundwater monitoring requirements, groundwater remediation standards and corrective action requirements. These and other applicable requirements, including permitting, are typically implemented by the states, but in some instances, states have enacted more stringent requirements.

Regarding the management and disposal of E&P waste, although E&P wastes may contain hazardous constituents, most E&P waste is exempt from stringent RCRA regulation as a hazardous waste. We are required to obtain permits for the land treatment and disposal of E&P waste as part of our operations. The construction, operation and closure of E&P waste land treatment and disposal operations are generally regulated at the state level. These regulations vary widely from state to state. None of our oilfield waste recycling, treatment and disposal facilities are currently permitted to accept hazardous wastes for disposal. Some wastes handled by us that currently are exempt from regulation as hazardous wastes may in the future be designated as “hazardous wastes” under RCRA or other applicable statutes if changes in laws or regulations were to occur. If the RCRA E&P waste exemption is repealed or modified, we could become subject to more rigorous and costly operating and disposal requirements.

A breach of laws or regulations governing facilities we operate may result in suspension or revocation of necessary permits, civil liability, and imposition of fines and penalties. Moreover, if we experience a delay in obtaining, are unable to obtain, or suffer the revocation of required permits, we may be unable to serve our customers, our operations may be interrupted and our growth and revenue may be limited.

RCRA also regulates underground storage of petroleum and other materials it defines as “regulated substances.” RCRA requires registration, compliance with technical standards for tanks, release detection and reporting and corrective action, among other things. Certain of our facilities and operations are subject to these requirements, which are typically implemented at the state level and may be more stringent in certain states.

2. The Comprehensive Environmental Response, Compensation and Liability Act of 1980, or CERCLA

CERCLA, which is also known as the “Superfund” law, established a program in the United States allowing federal authorities to provide for the investigation and clean up of facilities where, or from which, a release of any hazardous substance into the environment has occurred or is threatened. CERCLA defines “hazardous substances” broadly. One of the primary ways that CERCLA addresses a release or threatened release of hazardous substances is by imposing strict, joint and several liability for clean up on its broad categories of responsible parties. This means that responsible parties can bear liability without fault and that each responsible party potentially could bear liability for the entirety of clean-up costs, notwithstanding its individual contribution. Generally, responsible parties are current owners and operators of the contaminated site; former owners and operators of the site at the time when the hazardous substances were disposed; any person who arranged for treatment or disposal of the hazardous substances; and transporters who selected the disposal site. In addition to CERCLA’s liability framework, the EPA may issue orders directing responsible parties to respond to releases of hazardous substances. Further, the EPA and private parties, who have response liability to the EPA or who have incurred response costs, can bring suit against other responsible parties to seek to recover certain costs incurred in their response efforts. CERCLA also imposes liability for the cost of evaluating and remedying damage to natural resources. Various states have enacted laws analogous to and independent of CERCLA that also impose liability, which is typically strict and joint and several, for investigation, clean-up and other damages associated with the release of hazardous or other regulated substances. We may handle hazardous substances within the meaning of CERCLA, or hazardous and other substances regulated under similar state statutes, in the course of our ordinary operations. As a result, we may be jointly and severally liable under CERCLA or similar states statutes for all or part of the costs required to clean up sites if and where these hazardous substances have been released into the environment. CERCLA and these analogous state laws and regulations may also expose us to liability for acts or conditions that were in compliance with applicable laws at a prior time. Under certain circumstances, our sales of residual crude oil collected as part of the saltwater injection process could result in liability to us if the residual crude contains hazardous substances or is covered by one of the state statutes and the entity to which the oil was transferred fails to manage and, as necessary, dispose of it or components thereof in accordance with applicable laws.

3. Canadian Waste Legislation

The primary waste laws regulating our business in Canada are imposed by the provinces. These include provincial laws that regulate waste management, including requirements to obtain permits and approvals, and regulations with respect to the operation of transfer stations and landfilling sites. Each provincial jurisdiction in Canada will have its own regulatory regime; however, the key requirements under these regimes are similar across Canada. For example, the Environmental Protection Act, or the EP Act, in Ontario and its underlying regulations regulate the generation, treatment, storage, handling, transportation and disposal of wastes in Ontario, among other things. The EP Act requires an approval or, in some cases, a registration, for the establishment, operation or alteration of a waste management system (which includes all facilities or equipment used in connection with waste) or a waste disposal site. The specific terms and conditions of an approval may impose emission limits, monitoring and reporting requirements, siting and operating criteria, financial assurance or insurance and decommissioning requirements. Certain landfilling sites are subject to more stringent regulatory requirements that can include detailed prescribed design standards, leachate collection systems, landfill gas management or collection systems and/or site closure plans including post-closure care requirements. The federal Canadian Environmental Protection Act, 1999 imposes requirements with respect to the interprovincial and international movement of hazardous wastes and hazardous recyclable material, which can affect the movement of wastes and recyclables to our Canadian facilities. The expansion or establishment of certain waste management projects, including waste treatment and landfilling sites, may also be subject to provincial or federal environmental assessment requirements.

A breach of laws or regulations governing our operations may result in suspension or revocation of necessary approvals and imposition of fines and penalties. Moreover, if we experience a delay in obtaining, are unable to obtain, or suffer the revocation of required approvals, we may be unable to serve our customers, our operations may be interrupted, and our growth and revenue may be limited.

4. Canadian Contaminated Sites Legislation

There are provincial and federal laws in Canada that regulate spills and releases of substances into the environment and require the remediation of contaminated sites. Clean up of contaminated sites in connection with our business is primarily regulated by provincial environmental laws. Each province will have its own regulatory regime; however, the key requirements under these regimes are similar across Canada. For example, the EP Act in Ontario authorizes the agency to issue orders to responsible persons to undertake remedial or other corrective actions to investigate, monitor and remediate the discharge or presence of contaminants in the environment. These orders can generally be issued on a joint and several liability basis to persons who caused or permitted the discharge of a contaminant, persons who owned the discharged substance, as well as current and past owners of lands or the source of the contamination and persons who have or have had charge, management or control over lands or the source of the contamination. The costs to comply with an order can be very substantial. Some provincial jurisdictions provide a statutory right to compensation from the owner or person in control of a substance that is discharged into the environment to any person who suffers loss as a result. The federal government has also enacted laws that regulate the release of certain substances into the environment. We handle many contaminants and pollutants in the course of our ordinary operations and, as a result, may be liable under provincial and federal statutes for all or part of required clean-up costs if substances have been released into the environment. Under such laws, we could be required to remove previously disposed substances and wastes (including substances disposed of or released by prior owners or operators) or remediate contaminated property (including soil and groundwater contamination, whether from prior owners or operators or other historic activities or spills).

B. Wastewater/Stormwater Discharge

1. The Federal Water Pollution Control Act of 1972, or the Clean Water Act

The Clean Water Act regulates the discharge of pollutants from a variety of sources, including, without limitation, solid waste disposal sites, transfer stations and oilfield waste facilities into Waters of the United States, or WOTUS, including surface and potentially ground waters. Under the Clean Water Act, sites or facilities that discharge pollutants to waters of the United States must have a permit authorizing that discharge. If run-off or other contaminants from our owned or operated transfer stations or oilfield waste facilities, or run-off, collected leachate or other contaminants from our owned or operated landfills or other facilities is discharged into streams, rivers or other regulated waters, the Clean Water Act would require a discharge permit, typically containing requirements to conduct monitoring and, under certain circumstances, to treat and reduce the quantity of pollutants in such discharge. Further, if a landfill or other facility discharges wastewater through a treatment works, it may be required to comply with additional permitting and other specific requirements. Also, virtually all landfills are required to comply with the EPA's storm water regulations, which are designed to prevent the introduction of contaminated storm water run-off into United States' waters.

At this time, the ultimate regulatory test for defining WOTUS is unclear, and the determination therefor will be based upon the outcome of regulatory promulgations and associated litigation which are currently pending. The manner in which WOTUS is defined could affect our operations by potentially increasing or modifying regulatory requirements governing our discharges. In 2015, the Clean Water Rule was promulgated, which would expand federal control over many U.S. water resources by broadening the definition of WOTUS, thereby potentially classifying a larger range of water resource types as jurisdictional under the Clean Water Act. Since promulgation of the 2015 Clean Water Rule, the EPA and the Army Corps of Engineers, or the Corps, have sought to rescind it and to promulgate a revised definition of WOTUS that would establish federal jurisdiction more narrowly, thereby reducing the scope of Clean Water Act applicability. To that end, on December 11, 2018, the EPA and the Corps proposed a rule to redefine WOTUS (the “2018 Proposed WOTUS Rule”). At this time, due to a patchwork of court rulings, the 2015 Clean Water Rule is effective in some states, while the agencies’ decision to delay implementation of the rule is effective in other states. If finalized, the 2018 Proposed WOTUS Rule would apply nationwide, replacing the national patchwork of WOTUS applicability. Additionally, if finalized, it is possible that the 2018 Proposed WOTUS Rule will be challenged. The scope of the WOTUS definition will likely remain fluid until a final regulatory determination is made and subsequent litigation, if any, is finalized. In the interim, our costs to comply with the Clean Water Act may increase as we seek to operate under various regulatory determinations.

Additionally, the Clean Water Act’s spill prevention, control and countermeasure requirements require appropriate containment berms and similar structures to help contain and prevent the contamination of regulated waters in the event of a hydrocarbon storage tank release. The Clean Water Act also contains provisions which can prohibit or require permitting before development or expansion of a landfill may occur in areas designated as wetlands. Various states in which we operate or may operate in the future have been delegated authority to implement the Clean Water Act and its permitting requirements, and some of these states have adopted regulations that are more stringent than federal Clean Water Act requirements.

2. Safe Drinking Water Act, or SDWA

Our United States E&P underground injection operations are subject to the SDWA, as well as analogous state laws and regulations. Under the SDWA, the EPA established the underground injection control, or UIC, program, which includes requirements for permitting, testing, monitoring, record keeping and reporting of injection well activities, as well as a prohibition against the migration of fluid containing any contaminant into underground sources of drinking water. Certain state regulations require us to obtain permits from the applicable regulatory agencies to operate our underground injection wells. Leakage from the subsurface portions of the injection wells could cause degradation of fresh groundwater resources, potentially resulting in suspension of our UIC permit, fines and penalties, the incurrence of expenditures for remediation of the affected resource and potential liability to third parties for property damages. In July 2018, the EPA partnered with New Mexico to assess alternatives to immediate disposal of E&P wastewater by reusing it and/or treating it for reintroduction into the hydrologic cycle, as well as potential regulations related thereto. If regulations requiring reuse or treatment are developed and implemented on a broad scale, it may increase our compliance costs or reduce the volume of E&P wastes that may be disposed of via underground injection.

3. Canadian Water Protection Legislation

There is legislation in Canada at both the federal and provincial levels that protects water quality and regulates the discharge of substances into the aquatic environment. Federal water pollution control authority is derived primarily from the Fisheries Act, which contains provisions for the protection of water quality and fish habitat. This includes a general prohibition on the deposit of any deleterious substances into water that is frequented by fish, unless otherwise authorized. There is legislation in each provincial jurisdiction that also protects water sources and regulates water pollution, and generally requires an approval or permit for a discharge of any effluent, including in some cases stormwater, into a water body. For example, in Ontario, the Ontario Water Resources Act, or OWRA, prohibits the discharge of material of any kind into any water that may impair the quality of the water. The OWRA requires that an approval be obtained for the use and operation of certain sewage and stormwater works. Such approvals typically contain monitoring requirements and impose restrictions on effluent characteristics. Other provinces in Canada have similar regimes for the protection of water. If run-off or other contaminants from our landfills, transfer stations or other waste facilities is discharged or migrates into waters and causes impairment, we could face significant liability under provincial and federal laws.

C. Air Emissions

1. The Clean Air Act, or CAA

In the United States, the CAA generally regulates the emissions of air pollutants from a variety of sources, including certain landfills and oilfield waste facilities, based on factors such as the date of the construction and tons per year of emissions of regulated pollutants. Typically, federal requirements are delegated to the states and implemented at the state level. The CAA and analogous state laws require permits for and impose other restrictions on facilities and equipment that have the potential to emit pollutants into the atmosphere. Under the CAA, a source deemed to be a major source generally must be authorized by a permit. In those situations where major source permitting is not required, typically state laws and rules will require permitting as a type of minor source. Larger landfills and landfills located in areas where the ambient air does not meet certain air quality standards called for by the CAA may be subject to even more extensive air pollution controls and emissions limitations. In addition to the potential CAA permitting of landfill facilities, CAA permitting may be required for the construction of gas collection and flaring systems, composting and other operations. In some instances, federal operating permits may be required depending on the nature and volume of air emissions.

In addition to permitting, the CAA imposes other regulatory obligations, including, in some instances, performance standards on operations and equipment. The EPA has issued what are known as new source performance standards, or NSPS, and emissions guidelines, which impose requirements regarding control of landfill gases from new and existing large landfills. The EPA has also issued regulations imposing maximum achievable control technology, or MACT, on large MSW landfills. The MACT standards impose limits on landfill emissions and often require installation of landfill gas collection system tanks. Additional or more stringent regulations of our facilities may occur in the future, which could increase operating costs or impose additional compliance burdens. On August 29, 2016, the EPA issued "Subpart XXX" that applies to MSW landfills constructed, modified or reconstructed after July 17, 2014. Subpart XXX reduces the non-methane organic compounds, or NMOC, emissions threshold at which MSW landfills must install emission controls, requires monitoring surface emissions of methane, monitoring of temperature and pressure at the well head of landfill gas collection systems and imposes other requirements. Further, the EPA promulgated "Guidelines" on August 29, 2016, known as Subpart Cf, which require states to implement similar requirements on existing landfills that are not subject to NSPS Subpart XXX. Subpart Cf updates existing Emission Guidelines and Compliance Times for existing MSW landfills. The Subpart Cf Guidelines apply to landfills that accepted waste after November 8, 1987 and commenced construction or modification on or before July 17, 2014. Subpart XXX and Subpart Cf are intended to result in the reduction of landfill gas emissions, including methane, by lowering the thresholds where an MSW landfill must install a gas collection and control system. Subpart Cf will ultimately affect existing sources that are not affected by Subpart XXX. In October 2018, the EPA proposed a rule to delay implementation of the Guidelines, and has indicated that it is reconsidering certain portions thereof. Regardless of whether or how EPA will implement and/or amend Subpart XXX and Subpart Cf, compliance with these regulatory requirements could result in significant additional compliance costs, which we will incur in our ordinary course of business. In addition, state air regulatory requirements may impose additional restrictions beyond federal requirements, which could also result in compliance costs. For example, some state air programs uniquely regulate odor and the emission of certain specific toxic air pollutants.

The EPA recently modified, or is in the process of modifying, other standards promulgated under the CAA in a manner which could increase our compliance costs. For example, the EPA has recently modified or discussed modifying national ambient air quality standards applicable to particulate matter, carbon monoxide and oxides of sulfur and nitrogen, ozone and other standards to make them more stringent. It is possible these additional regulations could result in additional capital or operating expenditures. We do not believe, however, they will have a material adverse effect on our business as a whole. Further, our customers' operations may be subject to existing and future CAA permitting and regulatory requirements that could have a material effect on their operations, which could have an adverse effect on our business.

2. Canadian Air Quality Legislation

In Canada, the primary laws regulating air emissions from our operations come from provincial laws. Provincial laws may require approvals for air emissions and may impose other restrictions on facilities and equipment that have the potential to emit pollutants into the atmosphere. Provincial laws may require the construction of landfill gas management systems, including gas collection and flaring systems, which are subject to approvals or other regulatory requirements. Failure to obtain an approval or comply with approval requirements could result in the imposition of substantial administrative or regulatory penalties.

D. Occupational Health and Safety

1. The Occupational Safety and Health Act of 1970, or the OSH Act

In the United States, the OSH Act is administered by the Occupational Safety and Health Administration, or OSHA, and many state agencies whose programs have been approved by OSHA. The OSH Act establishes employer responsibilities for worker health and safety, including the obligation to maintain a workplace free of recognized hazards likely to cause death or serious injury, comply with adopted worker protection standards, maintain certain records, provide workers with required disclosures, and implement certain health and safety training programs. Various OSHA standards may apply to our operations, including standards concerning notices of hazards, safety in excavation and demolition work, the handling of asbestos and asbestos-containing materials and worker training and emergency response programs. Moreover, the Department of Transportation, OSHA, and other agencies regulate and have jurisdiction concerning the transport, movement, and related safety of hazardous and other regulated materials. In some instances, state and local agencies also regulate the safe transport of such materials to the extent not preempted by federal law.

2. Canadian Occupational Health and Safety Laws

In Canada, each province establishes and administers a provincial occupational health and safety regime. Similar to the United States, these regimes generally identify the rights and responsibilities of employers, supervisors and workers. Employers are required to implement all prescribed safety requirements and to exercise reasonable care to protect employees from workplace hazards, among other things. Various occupational health and safety standards may apply to our Canadian operations, including requirements relating to communication of and exposure to hazards, safety in excavation and demolition work, the handling of asbestos and asbestos-containing materials and worker training and emergency response programs. In addition to the provincial departments of transportation, Transport Canada has jurisdiction to regulate the transportation of dangerous goods, which can include wastes.

E. Additional Regulatory Considerations

We also review regulatory developments that may affect our business, including, among others, those described below.

1. State, Provincial and Local Regulation

In addition to the federal statutes regulating our operations, each state where we operate or may operate in the future has laws and regulations governing the management, generation, storage, treatment, handling, transportation, and disposal of solid waste, E&P waste, occupational safety and health, water and air pollution and, in most cases, the siting, design, operation, maintenance, corrective action, closure and post-closure maintenance of landfills and transfer stations. Further, many municipalities have enacted or could enact ordinances, local laws and regulations affecting our operations, including zoning and health measures that limit solid waste management activities to specified sites or activities. Other jurisdictions have enacted “fitness” rules focusing on companywide and overall corporate compliance history in making permitting decisions. In addition, certain jurisdictions have enacted flow control provisions that direct or restrict the delivery of solid wastes to specific facilities, laws that grant the right to establish franchises for collection services and bidding for such franchises and bans or other restrictions on the movement of solid wastes into a municipality. Specific state and local permits for our operations may be required and may be subject to periodic renewal, modification or revocation by the issuing agencies. There has also been an increasing trend at the state, provincial and local levels to mandate and encourage waste reduction at the source and recycling, and to prohibit or restrict landfill disposal of certain types of solid wastes, such as food waste, yard waste, leaves, tires, electronic equipment waste, painted wood and other construction and demolition debris. The enactment of laws or regulations reducing the volume and types of wastes available for transport to and disposal in landfills could prevent us from operating our facilities at their full capacity.

2. Hydraulic Fracturing Regulation

We do not conduct hydraulic fracturing operations, but we do provide treatment, recovery and disposal services for the fluids used and wastes generated by our customers in such operations. Recently, there has been increased public concern regarding the alleged potential for hydraulic fracturing to adversely affect drinking water supplies, and proposals have been made to enact separate federal, state or local legislation that would increase the regulatory burden imposed on hydraulic fracturing. Laws and regulations have been proposed and/or adopted at the federal, state and local levels that would regulate, restrict or prohibit hydraulic fracturing operations or require the reporting and public disclosure of chemicals used in the hydraulic fracturing process. Certain states and localities have placed moratoria or bans on hydraulic fracturing or the disposal of waste therefrom, or have considered the same.

In June 2016, the EPA promulgated a rule prohibiting discharges of wastewater pollutants from onshore unconventional oil and gas extraction facilities to publicly-owned treatment works, or POTWs. Further, the EPA promulgated regulations known as Reg. OOOO and Reg. OOOOa, which, among other things, require control of methane and VOC emissions related to certain well completions and certain tankage and equipment. Certain provisions of Reg. OOOOa are currently the subject of litigation. In June 2017, the EPA proposed a two-year stay of portions of the rules and in October 2018, the EPA proposed revisions to Reg. OOOOa. Regardless of the stay and potential regulatory revisions, it is possible that these rules will continue to require oil and gas operators to expend material sums, which may reduce our customers' E&P activities and could have an adverse impact on our business. Additionally, several states have adopted or proposed laws and regulations analogous to the federal rules that would remain in effect regardless of the outcome of any federal stay or litigation. Further, several states in which we conduct business require oil and natural gas operators to disclose information concerning their operations, which could result in increased public scrutiny.

The EPA has contemplated additional rule making. In May 2014, the EPA issued an Advanced Notice of Proposed Rulemaking, or ANPR, under the Toxic Substances Control Act, or TSCA, seeking comment on whether and how the EPA should regulate the reporting or disclosure of the use of hydraulic fracturing chemical substances and mixtures and their constituents. Several states have already implemented such requirements. Additionally, in December 2016, the EPA released a study on the environmental impacts of hydraulic fracturing on drinking water. In that study, the EPA found evidence that hydraulic fracturing activity can impact drinking water resources under some circumstances, but data gaps limited the EPA's ability to fully assess the matter. The EPA also published in May 2018 a detailed study of centralized waste treatment, or CWT, facilities accepting oil and gas extraction wastewater. The study assessed the regulatory status of CWTs, characteristics of wastewaters discharged from them, available treatment technologies and associated costs. The impact of rules that the EPA is contemplating, has proposed or has recently promulgated will be uncertain until the rules are finalized and fully implemented.

If the EPA's newly promulgated or proposed rules, or other new federal, state or local laws, regulations or policies restricting hydraulic fracturing are adopted, such legal requirements could result in delays, eliminate certain drilling and injection activities and make it more difficult or costly for our customers to perform hydraulic fracturing. Any such regulations limiting, prohibiting or imposing operational requirements on hydraulic fracturing could reduce oil and natural gas E&P activities by our customers and, therefore, adversely affect our business. Such laws or regulations could also materially increase our costs of compliance.

3. Disposal of Drilling Fluids

Certain of our facilities accept drilling fluids and other E&P wastes for disposal via underground injection. The disposal of drilling fluids is generally regulated at the state level, and claims, including some regulatory actions, have been brought against some owners or operators of these types of facilities for nuisance, seismic disturbances and other claims in relation to the operation of underground injection facilities. To date, our facilities have not been subject to any such litigation, but could be in the future.

4. Climate Change Laws and Regulations

Generally, the promulgation of climate change laws or regulations restricting or regulating greenhouse gas, or GHG, emissions could increase our costs to operate. The EPA's current and proposed regulation of GHG emissions may adversely impact our operations. In 2009, the EPA made an endangerment finding allowing GHGs to be regulated under the CAA. The CAA requires stationary sources of air pollution to obtain New Source Review, or NSR, permits prior to construction and, in some cases, Title V operating permits. Pursuant to the EPA's rulemakings and interpretations, certain Title V and NSR Prevention of Significant Deterioration, or PSD, permits issued on or after January 2, 2011, must address GHG emissions. As a result, new or modified emissions sources may be required to install Best Available Control Technology to limit GHG emissions. The EPA's recently adopted Subpart XXX also requires the reduction of GHG emissions from new or modified landfills, and the Guidelines, known as Subpart Cf, published by the EPA in August 2016, will require the reduction of GHG emissions from existing landfills, although the EPA has delayed implementation of, and is reconsidering portions of, these regulations, as detailed above. In addition, the EPA's Mandatory Greenhouse Gas Reporting Rule sets monitoring, recordkeeping and reporting requirements applicable to certain landfills and other entities.

In June 2018, the Canadian federal government enacted the Greenhouse Gas Pollution Pricing Act, which establishes a national carbon-pricing regime for the beginning of 2019 for provinces and territories in Canada where there is no provincial system in place already or where the provincial system does not meet the federal benchmark. Often referred to as the federal backstop, the new federal carbon-pricing regime consists of a carbon levy that will be applied to fossil fuels and an output-based pricing system ("OBPS") that will be applied to certain industrial facilities with reported emissions of 50,000 tonnes of carbon dioxide equivalent ("CO₂e") or more per year. The carbon levy will apply to prescribed liquid, gaseous, and solid fuels at a rate that is equivalent to \$10 per tonne of CO₂e in 2018, increasing annually, until it reaches \$50 per tonne of CO₂e by 2022.

Certain states and several Canadian provinces have promulgated legislation and regulations to limit GHG emissions through requirements of specific controls, carbon levies, cap and trade programs or other measures. Comprehensive GHG legislation or regulation, including carbon pricing, will affect not only our business, but also that of our customers.

Heightened regulation of our customers' operations could also adversely affect our business. The regulation of GHG emissions from oil and gas E&P operations may increase the costs to our customers of developing and producing hydrocarbons and, as a result, may have an indirect and adverse effect on the amount of E&P waste delivered to our facilities. On June 3, 2016, the EPA promulgated NSPS Subpart OOOOa, which in conjunction with NSPS Subpart OOOO sets methane and VOC requirements for certain new and modified sources, including hydraulically fractured oil wells, certain tankage and equipment. Although the EPA has delayed implementation of, and is reconsidering portions of, these regulations, they will continue to require, in some instances, additional emissions controls and increased capital costs for our customers, which could reduce their E&P activities, and subsequently negatively impact our business operations. As discussed above, certain states have enacted rules analogous to the federal rules.

These statutes and regulations increase our costs and our customers' costs, and future climate change statutes and regulations may have an impact as well. If we are unable to pass such higher costs through to our customers, or if our customers' costs of developing and producing hydrocarbons increase, our business, financial condition and operating results could be adversely affected. The impact of any potential rules affecting existing sources is uncertain.

5. Flow Control/Interstate Waste Restrictions

Certain permits and state and local regulations, known as flow control restrictions, may limit a landfill's or transfer station's ability to accept waste that originates from specified geographic areas, to import out-of-state waste or wastes originating outside the local jurisdictions or to otherwise accept non-local waste. While certain courts have deemed these laws to be unenforceable, other courts have not. Certain state and local jurisdictions may seek to enforce flow control restrictions contractually. These actions could limit or prohibit the importation of wastes originating outside of local jurisdictions or direct that wastes be handled at specified facilities. These restrictions could limit the volume of wastes we can manage in jurisdictions at issue and also result in higher disposal costs for our collection operations. If we are unable to pass such higher costs through to our customers, our business, financial condition and operating results could be adversely affected. Additionally, certain local jurisdictions have sought or may seek to impose extraterritorial obligations on our operations in an effort to affect flow control and may enforce tax and fee arrangements on behalf of such jurisdictions.

F. Renewable and Low Carbon Fuel Standards

Pursuant to the Energy Independence and Security Act of 2007, the EPA promulgated the Renewable Fuel Standards, or RFS, which require refiners to either blend "renewable fuels," such as ethanol and biodiesel, into their transportation fuels or to purchase renewable fuel credits, known as renewable identification numbers, or RINs, in lieu of blending. In some cases, landfill gas generated at our landfills in the United States qualifies as a renewable fuel for which RINs are available. Such RINs can be sold by the Company. The price of RINs has been extremely volatile and the value of RINs is dependent upon a variety of factors. The EPA annually establishes the renewable fuel volumes required under the RFS for the following year. Reductions or limitations on the requirement to blend renewable fuel would likely reduce the volume of RINs purchased to meet the RFS blending requirements. Further, there have been proposals to revise, and in some instances limit, the RFS program in the United States. For example, bills introduced in the House of Representatives included the Restoring Our Commitment to Renewable Fuels Act of 2018 (September 2018), which sought to reallocate renewable fuel obligations, and the Renewable Fuel Standard Elimination Act (March 2017), which would repeal the renewable fuel program. Various parties have also sought for the executive branch to revise the RFS. In March 2018, legislators and stakeholders met with President Donald Trump to propose RFS reforms, which in some instances would have eliminated RFS. Similarly, during an April 2018 hearing before the House Energy and Commerce Subcommittee, then-EPA Administrator Scott Pruitt expressed interest on behalf of the EPA in working with Congress to reform the RFS. Limiting or eliminating the RFS could have the effect of reducing or eliminating the volume of RINs required to meet blending requirements, which could adversely affect the demand for RINs and accordingly the revenue stream we have historically derived from the sale of RINs.

In Canada, the Renewable Fuels Regulations under the Canadian Environmental Protection Act, 1999 require producers and importers of gasoline, diesel fuel and heating distillate to acquire a certain number of renewable fuel compliance units, or Compliance Units, in connection with the volumes of fuel they produce or import. Compliance Units can be generated in a number of ways, including through the blending of renewable fuel into liquid petroleum fuels. In some cases, landfill gas generated at our landfills in Canada qualifies as a renewable fuel that can be sold by our Company to blenders or refiners for the purpose of creating Compliance Units. Certain provincial jurisdictions in Canada also impose obligations to incorporate renewable fuels into fuels that are distributed within the jurisdiction. The price for our renewable fuel in Canada is dependent on a variety of factors, including demand. The Canadian federal government released details on a proposed new clean fuel regulatory framework at the end of 2017 called the "Clean Fuel Standard". The proposed framework would impose lifecycle carbon intensity requirements on certain liquid, gaseous and solid fuels that are used in transportation, industry and buildings, and establish rules relating to the trading of compliance credits. The carbon intensity requirements would become more stringent over time. Carbon intensity would be differentiated between different types of renewable fuels to reflect the associated emissions reduction potential. Regulated parties, which may include fuel producers and importers, would have some flexibility with respect to how to achieve lower carbon fuels in Canada. The Canadian federal government has indicated that over time, the new Clean Fuel Standard would replace the current Renewable Fuels Regulations. Since January 2017, the Canadian federal government has been conducting public consultation on the proposed framework with final regulations anticipated in 2020 and 2021. At this time, we do not know how a new clean fuel regulatory framework in Canada could impact demand for our renewable fuel.

A significant reduction in the value of RINs in the United States or the price paid for our renewable fuel in Canada could adversely impact our reported results.

G. Regulation of Naturally Occurring Radioactive Metals, or NORM

Certain states have enacted laws and regulations regulating NORM. In the course of our E&P waste operations, some of our equipment involved in E&P waste management and disposal may be exposed to naturally occurring radiation associated with oil and gas deposits. Further, certain E&P wastes we handle could be NORM contaminated. NORM wastes exhibiting levels of naturally occurring radiation exceeding established state standards are typically subject to special handling and disposal requirements, and any storage vessels, piping, equipment and work area affected by NORM waste may be subject to remediation or restoration requirements. It is possible that we may incur significant costs or liabilities associated with inadvertently handling NORM contaminated waste or equipment that becomes NORM contaminated based on exposure or contact with elevated levels of NORM.

H. Extended Producer Responsibility, or EPR, Regulations

EPR regulations place responsibility on product manufacturers or suppliers to assume certain waste management or recycling responsibility for their products after such products' useful life or otherwise impose obligations on product manufacturers or suppliers to reduce the volume of waste associated with their products.

EPR regulations have yet to be promulgated at the federal level in the United States, but have been promulgated or considered in state and local jurisdictions in the United States. EPR regulations could have an adverse effect on our business if enacted at the federal level or if widely enacted by state or local governments.

Numerous provincial jurisdictions in Canada have promulgated EPR and related waste diversion legislation and other programs that mandate or encourage recycling and waste reduction and restrict the landfill disposal of certain types of waste. The enactment of new and more stringent regulations reducing the types or volumes of wastes available for disposal in landfills could impact our future operations.

I. State Public Utility Regulation

In some states, public authorities regulate the rates that landfill operators may charge. The adoption of rate regulation or the reduction of current rates in states in which we own or operate landfills could adversely affect our business, financial condition and operating results.

RISK MANAGEMENT, INSURANCE AND FINANCIAL SURETY BONDS

Risk Management

We maintain environmental and other risk management programs that we believe are appropriate for our business. Our environmental risk management program includes evaluating existing facilities and potential acquisitions for environmental law compliance. We do not presently expect environmental compliance costs to increase materially above current levels, but we cannot predict whether future acquisitions will cause such costs to increase. We also maintain a worker safety program that encourages safe practices in the workplace. Operating practices at our operations emphasize minimizing the possibility of environmental contamination and litigation. Our facilities comply in all material respects with applicable federal, state and provincial regulations.

Insurance

We maintain an insurance program for automobile liability, general liability, employer's liability claims, environmental liability, cyber liability, employment practices liability and directors' and officers' liability as well as for employee group health insurance, property and workers' compensation. Our loss exposure for insurance claims is generally limited to per incident deductibles or self-insured retentions. Losses in excess of deductible or self-insured retention levels are insured subject to policy limits.

Under our current company-wide insurance program, we carry per incident deductibles or self-insured retentions ranging from \$100,000 to \$1 million for cyber liability and directors' and officers' liability claims. Additionally, we have umbrella policies with insurance companies for automobile liability, general liability and employer's liability. Our property insurance limits are in accordance with the replacement values of the insured property. From time to time, actions filed against us include claims for punitive damages, which are generally excluded from coverage under our liability insurance policies.

Under our current insurance program for our U.S. operations, we carry per incident deductibles or self-insured retentions ranging from \$250,000 to \$2 million for automobile liability claims, workers' compensation and employer's liability claims, general liability claims, employee group health insurance and employment practices liability, environmental liability, and for most property claims, subject to certain additional terms and conditions. Since workers' compensation is a statutory coverage limited by the various state jurisdictions, the umbrella coverage is not applicable. Our environmental protection insurance policy covers all owned or operated landfills, certain transfer stations and other facilities, subject to the policy terms and conditions. Our policy provides insurance for new pollution conditions that originate after the commencement of our coverage. Pollution conditions existing prior to the commencement of our coverage, if found, could be excluded from coverage.

Under our current insurance program for our Canadian operations, we carry per incident deductibles or self-insured retentions ranging from \$100,000 to \$750,000 for automobile liability claims, property claims and environmental liability. Since workers' compensation is a provincial coverage limited by the various province jurisdictions, the umbrella coverage is not applicable. Employees are eligible to receive health coverage under Canada's public health care system and, in addition, most employees of our Canadian operations are eligible to participate in group medical and drug coverage plans sponsored by us. Our environmental protection insurance policy covers all owned or operated landfills, certain transfer stations and other facilities, subject to the policy terms and conditions. Our policy provides insurance for new pollution conditions that originate after the commencement of our coverage. Pollution conditions existing prior to the commencement of our coverage, if found, could be excluded from coverage.

Financial Surety Bonds

We use financial surety bonds for a variety of corporate guarantees. The financial surety bonds are primarily used for guaranteeing municipal contract performance and providing financial assurances to meet asset closure and retirement requirements under certain environmental regulations. In addition to surety bonds, such guarantees and obligations may also be met through alternative financial assurance instruments, including insurance, letters of credit and restricted cash and investment deposits. At December 31, 2018 and 2017, we had provided customers and various regulatory authorities with surety bonds in the aggregate amount of approximately \$619.8 million and \$609.6 million, respectively, to secure our asset closure and retirement requirements and \$357.8 million and \$281.5 million, respectively, to secure performance under collection contracts and landfill operating agreements.

We source financial surety bonds from a variety of third-party insurance and surety companies, including a company in which we own a 9.9% interest that, among other activities, issues financial surety bonds to secure landfill final capping, closure and post-closure obligations for companies operating in the solid waste sector.

EMPLOYEES

At December 31, 2018, we had 16,356 employees, of which 3,096, or approximately 18.9% of our workforce, were employed under collective bargaining agreements. The majority of our collective bargaining agreements are with the Teamsters Union in both the U.S. and Canada. These collective bargaining agreements are renegotiated periodically. We have 30 collective bargaining agreements covering 1,571 employees that have expired or are set to expire during 2019. We do not expect any significant disruption in our overall business in 2019 as a result of labor negotiations, employee strikes or organizational efforts by labor unions or their representatives.

SEASONALITY

We expect our operating results to vary seasonally, with revenues typically lowest in the first quarter, higher in the second and third quarters and lower in the fourth quarter than in the second and third quarters. This seasonality reflects (a) the lower volume of solid waste generated during the late fall, winter and early spring because of decreased construction and demolition activities during winter months in Canada and the U.S., and (b) reduced E&P activity during harsh weather conditions, with expected fluctuation due to such seasonality between our highest and lowest quarters of approximately 12%. In addition, some of our operating costs may be higher in the winter months. Adverse winter weather conditions slow waste collection activities, resulting in higher labor and operational costs. Greater precipitation in the winter increases the weight of collected MSW, resulting in higher disposal costs, which are calculated on a per ton basis.

EXECUTIVE OFFICERS OF THE REGISTRANT

For purposes of this section, references to “WCI” shall mean Old Waste Connections prior to June 1, 2016 and New Waste Connections on and after June 1, 2016. The following table sets forth certain information concerning our executive officers as of February 1, 2019:

NAME	AGE	POSITIONS
Ronald J. Mittelstaedt (1)	55	Chief Executive Officer and Chairman
Worthing F. Jackman	54	President
Darrell W. Chambliss	54	Executive Vice President and Chief Operating Officer
Matthew S. Black	46	Senior Vice President and Chief Tax Officer
David G. Eddie	49	Senior Vice President and Chief Accounting Officer
David M. Hall	61	Senior Vice President – Sales and Marketing
Eric O. Hansen	53	Senior Vice President – Chief Information Officer
James M. Little	57	Senior Vice President – Engineering and Disposal
Patrick J. Shea	48	Senior Vice President, General Counsel and Secretary
Mary Anne Whitney	55	Senior Vice President and Chief Financial Officer
Robert M. Cloninger	46	Vice President, Deputy General Counsel and Assistant Secretary
Keith P. Gordon	55	Vice President – Information Systems
Michelle L. Little	45	Vice President – Accounting
Shawn W. Mandel	52	Vice President – Safety and Risk Management
Susan R. Netherton	49	Vice President – People, Training and Development
Scott I. Schreiber	62	Vice President – Equipment and Operations Support
Gregory Thibodeaux	52	Vice President – Maintenance and Fleet Management
Colin G. Wittke	56	Vice President – Sales
Richard K. Wojahn	61	Vice President – Business Development

(1) Member of the Executive Committee of the Board of Directors.

Ronald J. Mittelstaedt has served as Chief Executive Officer and a director of WCI since its formation in 1997, and was elected Chairman in January 1998. Mr. Mittelstaedt also served as President of WCI from its formation through August 2004. Mr. Mittelstaedt has more than 30 years of experience in the solid waste industry. Mr. Mittelstaedt serves as a director of SkyWest, Inc. Mr. Mittelstaedt holds a B.A. degree in Business Economics with a finance emphasis from the University of California at Santa Barbara.

Worthing F. Jackman has been President of WCI since July 1, 2018. From September 2004 to that date, Mr. Jackman served as Executive Vice President and Chief Financial Officer of WCI. From April 2003 to September 2004, Mr. Jackman served as Vice President – Finance and Investor Relations of WCI. Mr. Jackman held various investment banking positions with Alex. Brown & Sons, now Deutsche Bank Securities, Inc., from 1991 through 2003, including most recently as a Managing Director within the Global Industrial & Environmental Services Group. In that capacity, he provided capital markets and strategic advisory services to companies in a variety of sectors, including solid waste services. Mr. Jackman serves as a director of Quanta Services, Inc. He holds a B.S. degree in Finance from Syracuse University and an M.B.A. from the Harvard Business School.

Darrell W. Chambliss has been Executive Vice President and Chief Operating Officer of WCI since October 2003. From October 1, 1997 to that date, Mr. Chambliss served as Executive Vice President – Operations of WCI. Mr. Chambliss has more than 28 years of experience in the solid waste industry. Mr. Chambliss holds a B.S. degree in Business Administration from the University of Arkansas.

Matthew S. Black has been Senior Vice President and Chief Tax Officer of WCI since January 2017. From March 2012 to that date, Mr. Black served as Vice President and Chief Tax Officer of WCI. From December 2006 to March 2012, Mr. Black served as Executive Director of Taxes of WCI. Mr. Black served as Tax Director for The McClatchy Company from April 2001 to November 2006, and served as Tax Manager from December 2000 to March 2001. From January 1994 to November 2000, Mr. Black held various positions, including Tax Manager, for PricewaterhouseCoopers LLP. Mr. Black is a Certified Public Accountant and holds a B.S. degree in Accounting and Master’s degree in Taxation from California State University, Sacramento.

David G. Eddie has been Senior Vice President and Chief Accounting Officer of WCI since January 2011. From February 2010 to that date, Mr. Eddie served as Vice President – Chief Accounting Officer of WCI. From March 2004 to February 2010, Mr. Eddie served as Vice President – Corporate Controller of WCI. From April 2003 to February 2004, Mr. Eddie served as Vice President – Public Reporting and Compliance of WCI. From May 2001 to March 2003, Mr. Eddie served as Director of Finance of WCI. Mr. Eddie served as Corporate Controller for International Fibercom, Inc. from April 2000 to May 2001. From September 1999 to April 2000, Mr. Eddie served as WCI’s Manager of Financial Reporting. From September 1994 to September 1999, Mr. Eddie held various positions, including Audit Manager, for PricewaterhouseCoopers LLP. Mr. Eddie is a Certified Public Accountant and holds a B.S. degree in Accounting from California State University, Sacramento.

David M. Hall has been Senior Vice President – Sales and Marketing of WCI since October 2005. From August 1998 to that date, Mr. Hall served as Vice President – Business Development of WCI. Mr. Hall has more than 31 years of experience in the solid waste industry with extensive operating and marketing experience in the Western U.S. Mr. Hall received a B.S. degree in Management and Marketing from Missouri State University.

Eric O. Hansen has been Senior Vice President – Chief Information Officer of WCI since February 1, 2019. From July 2004 to that date, Mr. Hansen served as Vice President – Chief Information Officer of WCI. From January 2001 to July 2004, Mr. Hansen served as Vice President – Information Technology of WCI. From April 1998 to December 2000, Mr. Hansen served as Director of Management Information Systems of WCI. Mr. Hansen holds a B.S. degree from Portland State University.

James M. Little has been Senior Vice President – Engineering and Disposal of WCI since February 2009. From September 1999 to that date, Mr. Little served as Vice President – Engineering of WCI. Mr. Little held various management positions with Waste Management, Inc. (formerly USA Waste Services, Inc., which acquired Waste Management, Inc. and Chambers Development Co. Inc.) from April 1990 to September 1999, including Regional Environmental Manager and Regional Landfill Manager, and most recently Division Manager in Ohio, where he was responsible for the operations of ten operating companies in the Northern Ohio area. Mr. Little is a certified professional geologist and holds a B.S. degree in Geology from Slippery Rock University.

Patrick J. Shea has been Senior Vice President, General Counsel and Secretary of WCI since August 2014. From February 2009 to that date, Mr. Shea served as Vice President, General Counsel and Secretary of WCI. He served as General Counsel and Secretary of WCI from February 2008 to February 2009 and Corporate Counsel of WCI from February 2004 to February 2008. Mr. Shea practiced corporate and securities law with Brobeck, Phleger & Harrison LLP in San Francisco from 1999 to 2003 and Winthrop, Stimson, Putnam & Roberts (now Pillsbury Winthrop Shaw Pittman LLP) in New York and London from 1995 to 1999. Mr. Shea holds a B.S. degree in Managerial Economics from the University of California at Davis and a J.D. degree from Cornell University.

Mary Anne Whitney has been Senior Vice President and Chief Financial Officer of WCI since July 1, 2018. From February 2018 to that date, Ms. Whitney served as Senior Vice President – Finance of WCI. From March 2012 to February 2018, Ms. Whitney served as Vice President – Finance of WCI. From November 2006 to March 2012, Ms. Whitney served as Director of Finance of WCI. Ms. Whitney held various finance positions for Wheelabrator Technologies from 1990 to 2001. Ms. Whitney holds a B.A. degree in Economics from Georgetown University and an M.B.A. in Finance from New York University Stern School of Business.

Robert M. Cloninger has been Vice President, Deputy General Counsel and Assistant Secretary of WCI since August 2014. From February 2013 to that date, Mr. Cloninger served as Deputy General Counsel of WCI. He served as Corporate Counsel of WCI from February 2008 to February 2013. Mr. Cloninger practiced corporate, securities and mergers and acquisitions law with Schiff Hardin LLP in Chicago from 1999 to 2004 and Downey Brand LLP in Sacramento from 2004 to 2008. Mr. Cloninger holds a B.A. degree in History from Northwestern University and a J.D. degree from the University of California at Davis.

Keith P. Gordon has been Vice President – Information Systems of WCI since January 2017. From September 2010 to that date, Mr. Gordon served as Director of Information Systems of WCI. Prior to joining WCI, he spent 14 years in leadership roles with CableData, DST Innovis and Amdocs, Inc. leading an international software development organization, as well as serving as CTO for a startup company that was acquired by LivingSocial. Mr. Gordon spent 11 years as an Army officer in a number of leadership positions including Company Commander and Battalion staff positions. Mr. Gordon has a B.S. in Mechanical Engineering from United States Military Academy, West Point, and M.S. in Computer Science from Stanford University.

Michelle L. Little has been Vice President – Accounting of WCI since January 2017. From December 2007 to that date, Ms. Little served as Director of Accounting of WCI. From 2001 to 2006, Ms. Little held various accounting positions at companies including Apple Computer and Pearson Education. From September 1996 to June 2001, Ms. Little held various positions, including Manager in Transaction Services, for PricewaterhouseCoopers LLP. Ms. Little is a Certified Public Accountant and holds a B.S. degree in Business Administration with a concentration in Accounting from California Polytechnic State University, San Luis Obispo.

Shawn W. Mandel has been Vice President – Safety and Risk Management of WCI since January 2017. From May 2011 to that date, Mr. Mandel served as Director of Safety of WCI. From 1995 to 2011, Mr. Mandel held various Safety leadership positions with Republic Services (formerly Browning-Ferris Industries and Allied Waste) including Director of Safety. Mr. Mandel holds a B.A. degree in Business Administration from National University.

Susan R. Netherton has been Vice President – People, Training and Development of WCI since July 2013. From February 2007 to that date, Ms. Netherton served as Director of Human Resources and Employment Manager of WCI. From 1994 to 2007, Ms. Netherton held various human resources positions at Carpenter Technology Corporation, a publicly-traded, specialty metals and materials company. Ms. Netherton holds a B.S. in Elementary Education from Kutztown University and an M.B.A. from St. Mary's College of California.

Scott I. Schreiber has been Vice President – Equipment and Operations Support of WCI since the completion of the Progressive Waste acquisition on June 1, 2016. From February 2009 to that date, Mr. Schreiber served as Vice President – Disposal Operations of WCI. From October 1998 to February 2009, he served as Director of Landfill Operations of WCI. Mr. Schreiber has more than 38 years of experience in the solid waste industry. From September 1993 to September 1998, Mr. Schreiber served as corporate Director of Landfill Development and corporate Director of Environmental Compliance for Allied Waste Industries, Inc. From August 1988 to September 1993, Mr. Schreiber served as Regional Engineer (Continental Region) and corporate Director of Landfill Development for Laidlaw Waste Systems Inc. From June 1979 to August 1988, Mr. Schreiber held several managerial and technical positions in the solid waste and environmental industry. Mr. Schreiber holds a B.S. degree in Chemistry from the University of Wisconsin at Parkside.

Gregory Thibodeaux has been Vice President – Maintenance and Fleet Management of WCI since January 2011. From January 2000 to that date, Mr. Thibodeaux served as Director of Maintenance of WCI. Mr. Thibodeaux has more than 32 years of experience in the solid waste industry having held various management positions with Browning Ferris Industries, Sanifill, and USA Waste Services, Inc. Before coming to WCI, Mr. Thibodeaux served as corporate Director of Maintenance for Texas Disposal Systems.

Colin G. Wittke has been Vice President – Sales of WCI since the completion of the Progressive Waste acquisition on June 1, 2016. From June 2011 to that date, he served as Vice President, Sales and Marketing of Progressive Waste Solutions Ltd. Prior to that time, Mr. Wittke held various roles with Waste Management, Inc. for 19 years, including the position of Vice President, Sales and Customer Service. He has more than 30 years of experience in the solid waste industry. Mr. Wittke holds a BSc in Finance (cum laude) from Biola University in La Mirada, California.

Richard K. Wojahn has been Vice President – Business Development of WCI since February 2009. From September 2005 to that date, Mr. Wojahn served as Director of Business Development of WCI. Mr. Wojahn served as Vice President of Operations for Mountain Jack Environmental Services, Inc. (which was acquired by WCI in September 2005) from January 2004 to September 2005. Mr. Wojahn has more than 37 years of experience in the solid waste industry having held various management positions with Waste Management, Inc. and Allied Waste Industries, Inc. Mr. Wojahn attended Western Illinois University.

AVAILABLE INFORMATION

Our corporate website address is <http://www.wasteconnections.com>. We make our reports on Forms 10-K, 10-Q and 8-K and any amendments to such reports available on our website free of charge as soon as reasonably practicable after we file them with or furnish them to the Securities and Exchange Commission, or SEC, and with the securities commissions or similar regulatory authorities in Canada. The SEC maintains an internet website at <http://www.sec.gov> that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The references to our website address, the SEC's website address and the website maintained by the securities commissions or similar regulatory authorities in Canada do not constitute incorporation by reference of the information contained in those websites and should not be considered part of this document.

ITEM 1A. RISK FACTORS

Certain statements contained in this Annual Report on Form 10-K are forward-looking in nature, including statements related to the impact of global economic conditions, including the price of crude oil, on our volume, business and results of operations; our ability to generate internal growth or expand permitted capacity at landfills we own or operate; our ability to grow through acquisitions and our expectations with respect to the impact of acquisitions on our expected revenues and expenses following the integration of such businesses; the competitiveness of our industry and how such competition may affect our operating results; our ability to provide adequate cash to fund our operating activities; our ability to draw from our credit facility or raise additional capital; our ability to generate free cash flow and reduce our leverage; the effects of landfill special waste projects on volume results; the impact that price increases may have on our business and operating results; demand for recyclable commodities and recyclable commodity pricing; the effects of seasonality on our business and results of operations; our ability to obtain additional exclusive arrangements; increasing alternatives to landfill disposal; increases in labor and pension plan costs or the impact that labor union activity may have on our operating results; our expectations with respect to the purchase of fuel and fuel prices; our expectations with respect to capital expenditures; our expectations with respect to the outcomes of our legal proceedings; the impairment of our goodwill; insurance costs; disruptions to or breaches of our information systems and other cybersecurity threats; environmental, health and safety laws and regulations, including changes to the regulation of landfills, solid waste disposal, E&P waste disposal, or hydraulic fracturing; and our ability to continue to integrate successfully the businesses and operations of Progressive Waste following the Progressive Waste acquisition. These statements can be identified by the use of forward-looking terminology such as “believes,” “expects,” “may,” “will,” “should,” or “anticipates,” or the negative thereof or comparable terminology, or by discussions of strategy. Our business and operations are subject to a variety of risks and uncertainties and, consequently, actual results may differ materially from those projected by any forward-looking statements. Factors that could cause actual results to differ from those projected include, but are not limited to, those listed below and elsewhere in this Annual Report on Form 10-K. There may be additional risks of which we are not presently aware or that we currently believe are immaterial which could have an adverse impact on our business. We make no commitment to revise or update any forward-looking statements in order to reflect events or circumstances that may change.

Our results are vulnerable to economic conditions.

Our business and financial results would be harmed by downturns in the global economy, or in the economy of the regions in which we operate as well as other factors affecting those regions, including the price of crude oil. In an economic slowdown, we experience the negative effects of decreased waste generation, increased competitive pricing pressure, customer turnover, and reductions in customer service requirements, any of which could negatively impact our operating income and cash flows. Two of our business lines that could see a more immediate impact would be construction and demolition and E&P waste disposal as demand for new construction or energy exploration decreases. In addition, a weaker economy may result in declines in recycled commodity prices. Worsening economic conditions or a prolonged or recurring economic recession could adversely affect our operating results and expected seasonal fluctuations. Further, we cannot assure you that any improvement in economic conditions after such a downturn will result in an immediate, if at all, positive improvement in our operating results or cash flows.

Our industry is highly competitive and includes companies with lower prices, return expectations or other advantages, and governmental service providers, which could adversely affect our ability to compete and our operating results.

Our industry is highly competitive and requires substantial labor and capital resources. Some of the markets in which we compete or will seek to compete are served by one or more large, national companies, as well as by regional and local companies of varying sizes and resources, some of which we believe have accumulated substantial goodwill in their markets. Some of our competitors may also have greater name recognition than we do, or be able to provide or be willing to bid their services at a lower price than we may be willing to offer. In addition, existing and future competitors may develop or offer services or new technologies, new facilities or other advantages. Our inability to compete effectively could hinder our growth or negatively impact our operating results.

In our solid waste business, we also compete with counties, municipalities and solid waste districts that maintain or could in the future choose to maintain their own waste collection and disposal operations, including through the implementation of flow control ordinances or similar legislation. These operators may have financial advantages over us because of their access to user fees and similar charges, tax revenues and tax-exempt financing.

In our E&P waste business, we compete for disposal volumes with existing facilities owned by third parties (including those owned by municipalities or quasi-governmental entities), and we face potential competition from new facilities that are currently under development. Increased competition in certain markets may result in lower pricing and decreased volumes at our facilities. In addition, customers in certain markets may decide to use internal disposal methods for the treatment and disposal of their waste.

Competition for acquisition candidates, consolidation within the waste industry and economic and market conditions may limit our ability to grow through acquisitions.

We seek to grow through strategic acquisitions in addition to internal growth. Although we have and expect to continue to identify numerous acquisition candidates that we believe may be suitable, we may not be able to acquire them at prices or on terms and conditions favorable to us.

Other companies have adopted or may in the future adopt our strategy of acquiring and consolidating regional and local businesses, and they may be willing to accept terms and conditions or valuations that we deem inappropriate. To the extent that competition increases, it may become uneconomical for us to make further acquisitions or we may be unable to locate or acquire suitable acquisition candidates at price levels and on terms and conditions that we consider appropriate, particularly in markets we do not already serve.

We expect that increased consolidation in the solid waste services industry will continue to reduce the number of attractive acquisition candidates. Moreover, general economic conditions and the environment for attractive investments may affect the desire of the owners of acquisition candidates to sell their companies. As a result, we may have fewer acquisition opportunities, and those opportunities may be on less attractive terms than in the past, which could cause a reduction in our rate of growth from acquisitions.

Our ability to access the capital markets may be severely restricted at a time when we would like, or need, to do so. While we expect we will be able to fund some of our acquisitions with our existing resources, additional financing to pursue additional acquisitions may be required. However, particularly if market conditions deteriorate, we may be unable to secure additional financing or any such additional financing may not be available to us on favorable terms, which could have an impact on our flexibility to pursue additional acquisition opportunities. In addition, disruptions in the capital and credit markets could adversely affect our ability to draw on our credit facility or raise other capital. Our access to funds under the credit facility is dependent on the ability of the banks that are parties to the facility to meet their funding commitments. Those banks may not be able to meet their funding commitments if they experience shortages of capital and liquidity or if they experience excessive volumes of borrowing requests within a short period.

Price increases may not be adequate to offset the impact of increased costs, or may cause us to lose customers.

We seek price increases necessary to offset increased costs, to improve operating margins and to obtain adequate returns on our deployed capital. Contractual, general economic, competitive or market-specific conditions may limit our ability to raise prices. As a result of these factors, we may be unable to offset increases in costs, improve operating margins and obtain adequate investment returns through price increases. We may also lose customers to lower-price competitors, and new competitors may enter our markets as we raise prices.

We may lose contracts through competitive bidding, early termination or governmental action.

We derive a significant portion of our revenues from market areas where we have exclusive arrangements, including franchise agreements, municipal contracts and certificates issued by Washington State known as G Certificates. Many franchise agreements and municipal contracts are for a specified term and are, or will be, subject to competitive bidding in the future. For example, we have approximately 374 contracts, representing approximately 3.0% of our annual revenues, which are set for expiration or automatic renewal on or before December 31, 2019. Although we intend to bid on existing contracts subject to competitive bidding in the future and additional municipal contracts and franchise agreements, we may not be the successful bidder, or we may need to lower our price in order to retain the contract. In addition, some of our customers, including municipalities, may terminate their contracts with us before the end of the terms of those contracts. Similar risks may affect our contracts to operate municipally-owned assets, such as landfills.

Governmental action may also affect our exclusive arrangements. Municipalities may annex unincorporated areas within counties where we provide collection services. As a result, our customers in annexed areas may be required to obtain services from competitors that have been previously franchised by the annexing municipalities to provide those services. For example, municipalities in the State of Washington may, by law, annex any unincorporated territory, which could remove such territory from an area covered by a G Certificate issued to us by the Washington Utilities and Transportation Commission, or WUTC. Such occurrences could subject more of our Washington operations to competitive bidding. Moreover, legislative action could amend or repeal the laws governing WUTC regulation, which could eliminate or diminish service exclusivity, subjecting more areas to competitive bidding and/or overlapping service. In addition, municipalities in which we provide services on a competitive basis may elect to franchise those services to other service providers. Unless we are awarded franchises by these municipalities, we will lose customers. Municipalities may also decide to provide services to their residents themselves, on an optional or mandatory basis, causing us to lose customers. If we are not able to replace revenues from contracts lost through competitive bidding or early termination or from the renegotiation of existing contracts with other revenues within a reasonable time, our revenues could decline.

Our financial and operating performance may be affected by the inability to renew landfill operating permits, obtain new landfills and expand existing ones.

We currently own and/or operate 93 landfills throughout the United States and Canada. Our ability to meet our financial and operating objectives may depend in part on our ability to acquire, lease, or renew landfill operating permits, expand existing landfills and develop new landfill sites, especially in our E&P waste business. It has become increasingly difficult and expensive to obtain required permits and approvals to build, operate and expand solid waste management facilities, including landfills and transfer stations. Although the process generally takes less time, the process of obtaining permits and approvals for E&P landfills has similar uncertainties. Operating permits for landfills in states and provinces where we operate must generally be renewed every five to ten years, although some permits are required to be renewed more frequently. These operating permits often must be renewed several times during the permitted life of a landfill. The permit and approval process is often time consuming, requires numerous hearings and compliance with zoning, environmental and other requirements, is frequently challenged by special interest and other groups, and may result in the denial of a permit or renewal, the award of a permit or renewal for a shorter duration than we believed was otherwise required by law, or burdensome terms and conditions being imposed on our operations. We may not be able to obtain new landfill sites or expand the permitted capacity of our existing landfills when necessary, and may ultimately be required to expense up to the carrying value of the landfill or expansion project, less the recoverable value of the property and other amounts recovered. Obtaining new landfill sites is important to our expansion into new, non-exclusive solid waste markets and in our E&P waste business. If we do not believe that we can obtain a landfill site in a non-exclusive market, we may choose not to enter that market. Expanding existing landfill sites is important in those markets where the remaining lives of our landfills are relatively short. We may choose to forego acquisitions and internal growth in these markets because increased volumes would further shorten the lives of these landfills. Any of these circumstances could adversely affect our operating results.

Lower crude oil prices may adversely affect the level of exploration, development and production activity of E&P companies and the demand for our E&P waste services.

Lower crude oil prices and the volatility of such prices may affect the level of investment and the amount of linear feet drilled in the basins where we operate, as it may impact the ability of E&P companies to access capital on economically advantageous terms or at all. In addition, E&P companies may elect to decrease investment in basins where the returns on investment are inadequate or uncertain due to lower crude oil prices or volatility in crude oil prices. Such reductions in capital spending would negatively impact E&P waste generation and therefore the demand for our services. Further, we cannot provide assurances that higher crude oil prices will result in increased capital spending and linear feet drilled by our customers in the basins where we operate.

Increases in labor costs and limitations on labor availability could impact our financial results.

Labor is one of our highest costs and relatively small increases in labor costs per employee could materially affect our cost structure. We compete with other businesses in our markets for qualified employees and the labor supply is sometimes tight in our markets, which can drive higher turnover and increase the time it takes to fill job openings. In our E&P waste business, for example, we are exposed to the cyclical variations in demand that are particular to the development and production of oil and natural gas. A shortage of qualified employees in solid waste or E&P would require us to incur additional costs related to wages and benefits, to hire more expensive temporary employees or to contract for services with more expensive third-party vendors. In addition, higher turnover can result in increased costs associated with recruiting and training; it can also impact operating costs, including maintenance and risk.

Increases in capital expenditures could impact our financial results.

Increases in fleet, equipment and landfill construction costs due to the imposition of tariffs on steel and other items, as well as other cost pressures, could result in capital expenditures being higher than anticipated. In addition, acquisitions and new contracts may increase capital expenditures. This could impact our ability to generate free cash flow in line with our expectations.

A portion of our growth and future financial performance depends on our ability to integrate acquired businesses, and the success of our acquisitions.

A component of our growth strategy involves achieving economies of scale and operating efficiencies by growing through acquisitions. We may not achieve these goals unless we effectively combine the operations of acquired businesses with our existing operations. Similar risks may affect contracts that we are awarded to operate municipally-owned assets, such as landfills. In addition, we are not always able to control the timing of our acquisitions. Our inability to complete acquisitions within the time frames that we expect may cause our operating results to be less favorable than expected, which could cause our share price to decline.

Even if we are able to make acquisitions on advantageous terms and are able to integrate them successfully into our operations and organization, some acquisitions may not fulfill our anticipated financial or strategic objectives in a given market due to factors that we cannot control, such as market conditions, including the price of crude oil, market position, competition, customer base, loss of key employees, third-party legal challenges or governmental actions. In addition, we may change our strategy with respect to a market or acquired businesses and decide to sell such operations at a loss, or keep those operations and recognize an impairment of goodwill and/or intangible assets. Similar risks may affect contracts that we are awarded to operate municipally-owned assets, such as landfills.

The seasonal nature of our business and “event-driven” waste projects cause our results to fluctuate.

Based on historic trends, we expect our operating results to vary seasonally, with revenues typically lowest in the first quarter, higher in the second and third quarters, and lower in the fourth quarter than in the second and third quarters. We expect the fluctuation in our revenues between our highest and lowest quarters to be approximately 12%. This seasonality reflects the lower volume of solid waste generated during the late fall, winter and early spring because of decreased construction and demolition activities during the winter months in Canada and the U.S., and reduced E&P activity during harsh weather conditions. Conversely, mild winter weather conditions may reduce demand for oil and natural gas, which may cause our customers to curtail their drilling programs, which could result in production of lower volumes of E&P waste.

Adverse winter weather conditions, including severe storms or extended periods of inclement weather, slow waste collection activities, resulting in higher labor and operational costs. Greater precipitation in the winter increases the weight of collected solid waste, resulting in higher disposal costs, which are calculated on a per ton basis. Certain weather conditions, including severe storms, may result in temporary suspension of our operations, which can significantly impact the operating results of the affected areas. Conversely, weather-related occurrences and other “event-driven” waste projects can boost revenues through heavier weight loads or additional work for a limited time. These factors impact period-to-period comparisons of financial results, and our share price may be negatively affected by these variations.

Our results will be affected by changes in recycled commodity prices and quantities.

We provide recycling services to some of our customers. The majority of the recyclables we process for sale are paper products that are shipped to customers in the United States and other markets, including Asia. The sale prices of and the demand for recyclable commodities, particularly paper products, are frequently volatile and when they decline, our revenues, operating results and cash flows will be affected. In 2017, the Chinese government announced a ban on certain materials, including mixed waste paper and mixed plastics, effective January 1, 2018, as well as extremely restrictive quality requirements effective March 1, 2018 that are difficult for the industry to achieve. Single stream MRFs process a wide range of commingled materials and tend to receive a higher percentage of non-recyclables, which results in increased processing and residual disposal costs to achieve quality standards. Also in 2017, the Chinese government began to limit the flow of material into the country by restricting the issuance of required import licenses, and this practice continued in 2018.

The new quality standards imposed by China and the restrictions on import licenses have made the sale of recycled commodities more difficult and have resulted in lower prices for such commodities, higher operating costs or additional capital expenditures in order to meet the requirements. As a result, we have increased the fees that we charge customers at our recycling facilities in order to recover the higher processing costs for recyclables. This may result in lower recycled commodity volumes at our MRFs, as customers may elect to pursue cheaper alternatives for processing or disposal. Any such reduction could impact revenues, operating results and cash flow. Some of our recycling operations offer rebates to customers based on the market prices of commodities we buy to process for resale. Therefore, if we recognize increased revenues resulting from higher prices for recyclable commodities, the rebates we pay to suppliers will also increase, which also may impact our operating results.

Our results will be affected by changes in the value of renewable fuels.

Variations in the price of methane gas and other energy-related products that are marketed and sold by our landfill gas recovery operations affect our results. Pursuant to the Energy Independence and Security Act of 2007, the United States EPA has promulgated the Renewable Fuel Standards, or RFS, which require refiners to either blend “renewable fuels,” such as ethanol and biodiesel, into their transportation fuels or to purchase renewable fuel credits, known as renewable identification numbers, or RINs, in lieu of blending. In some cases, landfill gas generated at our landfills qualifies as a renewable fuel for which RINs are available. The price of RINs has been extremely volatile and is dependent upon a variety of factors, including potential legislative changes, the availability of RINs for purchase, the demand for RINs, which is dependent on transportation fuel production levels, the mix of the petroleum business’ petroleum products and fuel blending performed at the refineries and downstream terminals, all of which can vary significantly from period to period. In July 2017, the EPA proposed certain reductions in the statutory volume targets for advanced biofuel and total renewable fuel for 2018, and requested comment on further reductions based on various considerations. On November 30, 2017, the EPA promulgated its 2018 RFS, which included renewable fuel obligations, or RVOs, that were very similar to the Agency’s original proposed mandates released in July 2017. In establishing the 2018 RVOs, the EPA exercised its waiver authority to lower the volume requirements for cellulosic and advanced biofuel below the levels that Congress established when it first enacted the RFS in 2007. On November 30, 2018, the EPA released a final rule to set 2019 RVOs under the RFS, which includes increases to the requirement for biofuels in 2019. Any reductions or limitations on the requirement to blend renewable fuel would likely reduce the volume of RINs.

In Canada, the Renewable Fuels Regulations under the Canadian Environmental Protection Act, 1999 require producers and importers of gasoline, diesel fuel and heating distillate to acquire a certain number of renewable fuel compliance units, or Compliance Units, in connection with the volumes of fuel they produce or import. Compliance Units can be generated in a number of ways, including through the blending of renewable fuel into liquid petroleum fuels. In some cases, landfill gas generated at our landfills in Canada qualifies as a renewable fuel that can be sold by our Company to blenders or refiners for the purpose of creating Compliance Units. Certain provincial jurisdictions in Canada also impose obligations to incorporate renewable fuels into fuels that are distributed within the jurisdiction. The price for our renewable fuel in Canada is dependent on a variety of factors, including demand. The Canadian federal government released details on a proposed new clean fuel regulatory framework at the end of 2017 called the “Clean Fuel Standard.” The proposed framework would impose lifecycle carbon intensity requirements on certain liquid, gaseous and solid fuels that are used in transportation, industry and buildings, and establish rules relating to the trading of compliance credits. The carbon intensity requirements would become more stringent over time. Carbon intensity would be differentiated between different types of renewable fuels to reflect the associated emissions reduction potential. Regulated parties, which may include fuel producers and importers, would have some flexibility with respect to how to achieve lower carbon fuels in Canada. The Canadian federal government has indicated that over time, the new Clean Fuel Standard would replace the current Renewable Fuels Regulations. Since January 2017, the Canadian federal government has been conducting public consultation on the proposed framework with final regulations anticipated in 2020 and 2021. At this time, we do not know how a new clean fuel regulatory framework in Canada could impact demand for our renewable fuel.

A significant reduction in the value of RINs in the United States or the price paid for our renewable fuel in Canada could adversely impact our reported results.

Increases in the price of diesel or compressed natural gas fuel may adversely affect our collection business and reduce our operating margins.

The market price of diesel fuel is volatile. We generally purchase diesel fuel at market prices, and such prices have fluctuated significantly in recent years. A significant increase in market prices for fuel could adversely affect our waste collection business through a combination of higher fuel and disposal-related transportation costs and reduce our operating margins and reported earnings. To manage a portion of this risk, we have entered into fixed-price fuel purchase contracts. During periods of falling diesel fuel prices, it may become more expensive to purchase fuel under fixed-price fuel purchase contracts than at market prices.

We utilize compressed natural gas, or CNG, in a small percentage of our fleet and we may convert more of our fleet from diesel fuel to CNG over time. The market price of CNG is also volatile; a significant increase in such cost could adversely affect our operating margins and reported earnings.

Our financial results are based upon estimates and assumptions that may differ from actual results.

In preparing our consolidated financial statements in accordance with U.S. generally accepted accounting principles, estimates and assumptions are made that affect the accounting for and recognition of assets, liabilities, revenues and expenses. These estimates and assumptions must be made because certain information that is used in the preparation of our financial statements is dependent on future events, cannot be calculated with a high degree of precision from data available or is not capable of being readily calculated based on generally accepted methodologies. In some cases, these estimates are particularly difficult to determine and we must exercise significant judgment. The most difficult, subjective and complex estimates and the assumptions that deal with the greatest amount of uncertainty are related to our accounting for landfills, self-insurance accruals, income taxes, allocation of acquisition purchase price, asset impairments and litigation, claims and assessments. Actual results for all estimates could differ materially from the estimates and assumptions that we use, which could have an adverse effect on our financial condition and results of operations.

Our accruals for our landfill site closure and post-closure costs may be inadequate.

We are required to pay capping, closure and post-closure maintenance costs for landfill sites that we own and operate. We are also required to pay capping, closure and post-closure maintenance costs for operated landfills for which we have life-of-site agreements. Our obligations to pay closure or post-closure costs may exceed the amount we have accrued and reserved and other amounts available from funds or reserves established to pay such costs. In addition, the completion or closure of a landfill site does not end our environmental obligations. After completion or closure of a landfill site, there exists the potential for unforeseen environmental problems to occur that could result in substantial remediation costs or potential litigation. Paying additional amounts for closure or post-closure costs and/or for environmental remediation and/or for litigation could harm our financial condition or operating results.

Increases in insurance costs and the amount that we self-insure for various risks could reduce our operating margins and reported earnings.

We maintain insurance policies for automobile, general, employer's, environmental, cyber, employment practices and directors' and officers' liability as well as for employee group health insurance, property insurance and workers' compensation. We carry umbrella policies for certain types of claims to provide excess coverage over the underlying policies and per incident deductibles or self-insured retentions. The amounts that we effectively self-insure could cause significant volatility in our operating margins and reported earnings based on the event and claim costs of incidents, accidents, injuries and adverse judgments. Our insurance accruals are based on claims filed and estimates of claims incurred but not reported and are developed by our management with assistance from our third-party actuary and our third-party claims administrator. To the extent these estimates are inaccurate, we may recognize substantial additional expenses in future periods that would reduce operating margins and reported earnings. Furthermore, while we maintain liability insurance, our insurance is subject to coverage limitations. If we were to incur substantial liability, our insurance coverage may be inadequate to cover the entirety of such liability. This could have a material adverse effect on our financial position, results of operations and cash flows. One form of coverage limitation concerns claims for punitive damages, which are generally excluded from coverage under all of our liability insurance policies. A punitive damage award could have an adverse effect on our reported earnings in the period in which it occurs. Significant increases in premiums on insurance that we retain also could reduce our margins.

We may be subject in the normal course of business to judicial, administrative or other third-party proceedings that could interrupt or limit our operations, require expensive remediation, result in adverse judgments, settlements or fines and create negative publicity.

Governmental agencies may, among other things, impose fines or penalties on us relating to the conduct of our business, attempt to revoke or deny renewal of our operating permits, franchises or licenses for violations or alleged violations of environmental laws or regulations or as a result of third-party challenges, require us to install additional pollution control equipment or require us to remediate potential environmental problems relating to any real property that we or our predecessors ever owned, leased or operated or any waste that we or our predecessors ever collected, transported, disposed of or stored. Individuals, citizens groups, trade associations or environmental activists may also bring actions against us in connection with our operations that could interrupt or limit the scope of our business. Any adverse outcome in such proceedings could harm our operations and financial results and create negative publicity, which could damage our reputation, competitive position and share price.

Pending or future litigation or governmental proceedings could result in material adverse consequences, including judgments or settlements.

We are, and from time to time become, involved in lawsuits, regulatory inquiries, and governmental and other legal proceedings arising out of the ordinary course of our business. Many of these matters raise complicated factual and legal issues and are subject to uncertainties and complexities, all of which make the matters costly to address. For example, in recent years, wage and employment laws have changed regularly and become increasingly complex, which has fostered litigation, including purported class actions. Similarly, citizen suits brought pursuant to environmental laws, such as those regulating the treatment of storm water runoff, have proliferated. The timing of the final resolutions to lawsuits, regulatory inquiries, and governmental and other legal proceedings is uncertain. Additionally, the possible outcomes or resolutions to these matters could include adverse judgments or settlements, either of which could require substantial payments, adversely affecting our consolidated financial condition, results of operations and cash flows. See discussion in Note 10, "Commitments and Contingencies," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

Our financial results could be adversely affected by impairments of goodwill, indefinite-lived intangibles or property and equipment.

As a result of our acquisition strategy, we have a material amount of goodwill, indefinite-lived intangibles and property and equipment recorded in our financial statements. We do not amortize our existing goodwill or indefinite-lived intangibles and are required to test goodwill and indefinite-lived intangibles for impairment annually in the fourth quarter of the year and whenever events or changes in circumstances indicate that the carrying value of goodwill and/or indefinite-lived intangible assets may not be recoverable using the one-step process prescribed in the new accounting guidance that we early adopted on January 1, 2017. The process screens for and measures the amount of the impairment, if any. The recoverability of property and equipment is tested for impairment whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. Application of the impairment test requires judgment. A significant deterioration in a key estimate or assumption or a less significant deterioration to a combination of assumptions could result in an impairment charge in the future, which could have a significant adverse impact on our reported results. See the section Goodwill and Indefinite-Lived Intangible Assets in Note 1, "Organization, Business and Summary of Significant Accounting Policies" of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

Income taxes may be uncertain.

Our actual effective tax rate may vary from our expectation and that variance may be material. Tax interpretations, regulations and legislation in the various jurisdictions in which we and our affiliates operate are subject to measurement uncertainty and the interpretations can impact net income, income tax expense or recovery, and deferred income tax assets or liabilities. In addition, tax rules and regulations, including those relating to foreign jurisdictions, are subject to interpretation and require judgment by us that may be challenged by the taxation authorities upon audit.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act, or the Tax Act. The Tax Act makes broad and complex changes to the U.S. tax code, including, but not limited to, a reduction of the U.S. federal corporate income tax rate from 35 percent to 21 percent, requiring a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries, the creation of the base erosion anti-abuse tax, a new provision designed to tax global intangible low-taxed income, a new limitation on deductible interest expense, and bonus depreciation that will allow for full expensing of qualified property.

Changes in our tax provision or an increase to our tax liabilities, whether due to the Tax Act or interpretations of the Tax Act, which include, but are not limited to, the potential finalization of proposed regulations released by the U.S. Department of Treasury during 2018 under Internal Revenue Code ("I.R.C.") section 163(j) related to the deductibility of certain interest, I.R.C. section 59A related to a base erosion minimum tax amount, and I.R.C. section 267A related to the deductibility of certain related-party payments, as well as other tax regulations, or a final determination of tax audits, could have a material adverse effect on our financial position, results of operations, and cash flows.

Future changes to U.S., Canadian and foreign tax laws could materially adversely affect us.

We cannot give any assurance as to what our effective tax rate will be in the future, because of, among other things, uncertainty regarding the tax policies of the jurisdictions where we operate.

For example, the U.S. Congress, the Canadian government, the Organisation for Economic Co-operation and Development and other government agencies in jurisdictions where we and our affiliates do business have had an extended focus on issues related to the taxation of multinational corporations. One example is in the area of "base erosion and profit shifting," where payments are made between affiliates from a jurisdiction with high tax rates to a jurisdiction with lower tax rates. The Organisation for Economic Co-operation and Development, or OECD, addressed fifteen specific actions as part of a comprehensive plan to create an agreed set of international rules for fighting base erosion and profit shifting that was presented in a report to the G20 finance ministers in October 2015. In November 2015, the G20 leaders endorsed such report. The Canadian government has acted on certain of the other OECD recommendations and is continuing to examine other recommendations and has reiterated its commitment to implementing the OECD's minimum standards. On June 7, 2017, Canada and other jurisdictions (not including the United States) signed the OECD's Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting. On June 20, 2018, the Canadian government introduced Bill C-82, *An Act to implement a multilateral convention to implement tax treaty related measures to prevent base erosion and profit shifting*. Bill C-82 has had a Second Reading and was referred to the Standing Committee on Finance on October 15, 2018. As a result of this and other changes, the tax laws in the United States, Canada, and other countries in which we and our affiliates do business could change on a prospective or retroactive basis, and any such changes could adversely affect us and our affiliates.

Each business that we acquire or have acquired may have liabilities or risks that we fail or are unable to discover, or that become more adverse to our business than we anticipated at the time of acquisition.

It is possible that the corporate entities or sites we have acquired, or which we may acquire in the future, have liabilities or risks in respect of former or existing operations or properties, or otherwise, which we have not been able to identify and assess through our due diligence investigations. As a successor owner, we may be legally responsible for those liabilities that arise from businesses that we acquire. Even if we obtain legally enforceable representations, warranties and indemnities from the sellers of such businesses, they may not cover the liabilities fully or the sellers may not have sufficient funds to perform their obligations. Some environmental liabilities, even if we do not expressly assume them, may be imposed on us under various regulatory schemes and other applicable laws. In addition, our insurance program may not cover such sites and will not cover liabilities associated with some environmental issues that may have existed prior to attachment of coverage. A successful uninsured claim against us could harm our financial condition or operating results. Additionally, there may be other risks of which we are unaware that could have an adverse effect on businesses that we acquire or have acquired, such as foreign, state and local regulation and administrative risks. Another example of risk is interested parties that may bring actions against us in connection with operations that we acquire or have acquired. Furthermore, risks or liabilities we judge to be not material or remote at the time of acquisition may develop into more serious risks to our business. Any adverse outcome resulting from such risks or liabilities could harm our operations and financial results and create negative publicity, which could damage our reputation, competitive position and share price. For example, see the discussions regarding the Lower Duwamish Waterway Superfund Site Allocation Process and the Florida Default Judgment in Note 10, "Commitments and Contingencies," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

Our indebtedness could adversely affect our financial condition and limit our financial flexibility.

As of December 31, 2018, we had approximately \$4.175 billion of total indebtedness outstanding, and we may incur additional debt in the future. This amount of indebtedness could:

- increase our vulnerability to general adverse economic and industry conditions;
- expose us to interest rate risk since a significant portion of our indebtedness is at variable rates;
- limit our ability to obtain additional financing or refinancing at attractive rates;
- require the dedication of a substantial portion of our cash flow from operations to the payment of principal of, and interest on, our indebtedness, thereby reducing the availability of such cash flow to fund our growth strategy, working capital, capital expenditures, dividends, share repurchases and other general corporate purposes;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry; and
- place us at a competitive disadvantage relative to our competitors with less debt.

Further, our outstanding indebtedness is subject to financial and other covenants, which may be affected by changes in economic or business conditions or other events that are beyond our control. If we fail to comply with the covenants under any of our indebtedness, we may be in default under the indebtedness, which may entitle the lenders or holders of indebtedness to accelerate the debt obligations. A default under one of our loans or debt securities could result in cross-defaults under our other indebtedness. In order to avoid defaulting on our indebtedness, we may be required to take actions such as reducing or delaying capital expenditures, reducing or eliminating dividends or share repurchases, selling assets, restructuring or refinancing all or part of our existing debt, or seeking additional equity capital, any of which may not be available on terms that are favorable to us, if at all.

We may be unable to obtain performance or surety bonds, letters of credit or other financial assurances or to maintain adequate insurance coverage.

If we are unable to obtain performance or surety bonds, letters of credit or insurance, we may not be able to enter into additional solid waste or other collection contracts or retain necessary landfill operating permits. Collection contracts, municipal contracts, transfer station operations and landfill closure and post-closure obligations may require performance or surety bonds, letters of credit or other financial assurance to secure contractual performance or comply with federal, state, provincial or local environmental laws or regulations. We typically satisfy these requirements by posting bonds or letters of credit. As of December 31, 2018, we had approximately \$977.6 million of such surety bonds in place and approximately \$125.1 million of letters of credit issued. Closure bonds are difficult and costly to obtain. If we are unable to obtain performance or surety bonds or additional letters of credit in sufficient amounts or at acceptable rates, we could be precluded from entering into additional collection contracts or obtaining or retaining landfill operating permits. Any future difficulty in obtaining insurance also could impair our ability to secure future contracts that are conditional upon the contractor having adequate insurance coverage. Accordingly, our failure to obtain performance or surety bonds, letters of credit or other financial assurances or to maintain adequate insurance coverage could limit our operations or violate federal, state, provincial, or local requirements, which could have a materially adverse effect on our business, financial condition and results of operations.

Our operations in Canada expose us to exchange rate fluctuations that could adversely affect our financial performance and our reported results of operations.

Our operations in Canada are conducted primarily in Canadian dollars. Our consolidated financial statements are denominated in U.S. dollars, and to prepare those financial statements we must translate the amounts of the assets, liabilities, net sales, other revenues and expenses of our operations in Canada from Canadian dollars into U.S. dollars using exchange rates for the current period. Fluctuations in the exchange rates that are unfavorable to us would have an adverse effect on our financial performance and reported results of operations.

Alternatives to landfill disposal may cause our revenues and operating results to decline.

Counties and municipalities in which we operate landfills may be required to formulate and implement comprehensive plans to reduce the volume of municipal solid waste deposited in landfills through waste planning, composting, recycling or other programs, while working to reduce the amount of waste they generate. Some state, provincial and local governments mandate diversion, recycling and waste reduction at the source and prohibit the disposal of certain types of wastes, such as yard waste, food waste and electronics, at landfills. Even where not prohibited by state, provincial or local law, some grocery stores and restaurants have chosen to divert their organic waste from landfills, while other companies have set zero-waste goals and communicated an intention to cease the disposal of any waste in landfills. Although such actions are useful to protect our environment, these actions, as well as the actions of our customers to reduce waste or seek disposal alternatives, have reduced and may in the future further reduce the volume of waste going to landfills in certain areas, which may affect our ability to operate our landfills at full capacity and could adversely affect our operating results.

Labor union activity could divert management attention and adversely affect our operating results.

From time to time, labor unions attempt to organize our employees, and these efforts are likely to continue in the future. Certain groups of our employees are represented by unions, and we have negotiated collective bargaining agreements with most of these unions. Additional groups of employees may seek union representation in the future. As a result of these activities, we may be subjected to unfair labor practice charges, grievances, complaints and other legal and administrative proceedings initiated against us by unions or federal, state or provincial labor boards, which could negatively impact our operating results. Negotiating collective bargaining agreements with these unions could divert our management's attention, which could also adversely affect our operating results. If we are unable to negotiate acceptable collective bargaining agreements, we might have to wait through "cooling off" periods, which may be followed by work stoppages, including strikes or lock-outs. Depending on the type and duration of any such labor disruptions, our operating expenses could increase significantly, which could adversely affect our financial condition, results of operations and cash flows.

We could face significant withdrawal liability if we withdraw from participation in one or more multiemployer pension plans in which we participate and the accrued pension benefits are not fully funded.

We participate in 11 "multiemployer" pension plans administered by employee and union trustees. We make periodic contributions to these plans to fund pension benefits for our union employees pursuant to our various contractual obligations to do so. In the event that we withdraw from participation in or otherwise cease our contributions to one of these plans, then applicable law regarding withdrawal liability could require us to make additional contributions to the plan if the accrued benefits are not fully funded, and we would have to reflect that "withdrawal liability" as an expense in our consolidated statement of operations and as a liability on our consolidated balance sheet. Our withdrawal liability for any multiemployer plan would depend on the extent to which accrued benefits are funded. In the ordinary course of our renegotiation of collective bargaining agreements with labor unions that participate in these plans, we may decide to discontinue participation in a multiemployer plan, and in that event, we could face withdrawal liability. Some multiemployer plans in which we participate may from time to time have significant accrued benefits that are not funded. The size of our potential withdrawal liability may be affected by the level of unfunded accrued benefits, the actuarial assumptions used by the plan and the investment gains and losses experienced by the plan.

We rely on computer systems to run our business and disruptions or privacy breaches in these systems could impact our ability to service our customers and adversely affect our financial results, damage our reputation, and expose us to litigation risk.

Our businesses rely on computer systems to provide customer information, process customer transactions and provide other general information necessary to manage our businesses. We also rely on a payment card industry-compliant third party to protect our customers' credit card information. We have an active disaster recovery plan in place that we continuously review and test. However, our computer systems are subject to damage or interruption due to cybersecurity threats, system conversions, power outages, computer or telecommunication failures, catastrophic physical events such as fires, tornadoes and hurricanes and usage errors by our employees. Given the unpredictability of the timing, nature and scope of such disruptions, we could be potentially subject to operational delays and interruptions in our ability to provide services to our customers. Any disruption caused by the unavailability of our computer systems could adversely affect our revenues or could require significant investment to fix or replace them, and, therefore, could affect our operating results.

In addition, cybersecurity attacks are evolving and include, but are not limited to, malicious software, attempts to gain unauthorized access to data and other electronic security breaches that could lead to disruptions in systems, unauthorized release of confidential or otherwise protected information and corruption of data. We are regularly the target of attempted cyber and other security threats and must continuously monitor and develop our information technology networks and infrastructure to prevent, detect, address and mitigate the risk of unauthorized access, misuse, computer viruses and other events that could have a security impact.

Further, as we pursue our acquisition growth strategy and pursue new initiatives that improve our operations and reduce our costs, we are also expanding and improving our information technologies, resulting in a larger technological presence and corresponding exposure to cybersecurity risk. If we fail to assess and identify cybersecurity risks associated with acquisitions and new initiatives, we may become increasingly vulnerable to such risks. Additionally, while we have implemented measures to prevent security breaches and cyber incidents, our preventative measures and incident response efforts may not be entirely effective. If our network of security controls, policy enforcement mechanisms or monitoring systems we use to address these threats to technology fail, the theft or compromise of confidential or otherwise protected company, customer or employee information, destruction or corruption of data, security breaches or other manipulation or improper use of our systems and networks could result in financial losses from remedial actions, business disruption, loss of business or potential liability, liabilities due to the violation of privacy laws and other legal actions, and damage to our reputation.

Extensive and evolving environmental, health and safety laws and regulations may restrict our operations and growth and increase our costs.

Existing environmental laws and regulations have become more stringently enforced in recent years. In addition, our industry is subject to regular enactment of new or amended federal, state, provincial and local environmental and health and safety statutes, regulations and ballot initiatives, as well as judicial decisions interpreting these requirements, which have become more stringent over time. Citizen suits brought pursuant to environmental laws have proliferated. We expect these trends to continue, which could lead to material increases in our costs for future environmental, health and safety compliance. These requirements also impose substantial capital and operating costs and operational limitations on us and may adversely affect our business. In addition, federal, state, provincial and local governments may change the rights they grant to, the restrictions they impose on or the laws and regulations they enforce against, solid waste and E&P waste services companies. These changes could adversely affect our operations in various ways, including without limitation, by restricting the way in which we manage storm water runoff, comply with health and safety laws, treat and dispose of E&P or other waste or our ability to operate and expand our business.

Governmental authorities and various interest groups in the United States and Canada have promoted laws and regulations designed to limit greenhouse gas, or GHG, emissions in response to growing concerns regarding climate change. For example, the State of California, the Canadian federal government and several Canadian provinces have enacted climate change laws, and other states and provinces in which we operate are considering similar actions. The US EPA made an endangerment finding in 2009 allowing certain GHGs to be regulated under the CAA. This finding allows the EPA to create regulations that will impact our operations – including imposing emission reporting, permitting, control technology installation and monitoring requirements, although the materiality of the impacts will not be known until all applicable regulations are promulgated and finalized. The Canadian federal government enacted the Greenhouse Gas Pollution Pricing Act in June 2018, which establishes a national carbon-pricing regime for the beginning of 2019 for provinces and territories in Canada where there is no provincial system in place already or where the provincial system does not meet the federal benchmark. Often referred to as the federal backstop, the new federal carbon-pricing regime consists of a carbon levy that will be applied to fossil fuels and an output-based pricing system (“OBPS”) that will be applied to certain industrial facilities with reported emissions of 50,000 tonnes of carbon dioxide equivalent (“CO₂e”) or more per year. The carbon levy will apply to prescribed liquid, gaseous, and solid fuels at a rate that is equivalent to \$10 per tonne of CO₂e in 2018, increasing annually, until it reaches \$50 per tonne of CO₂e by 2022. Several Canadian provinces have promulgated legislation and regulations to limit GHG emissions through requirements of specific controls, carbon levies, cap and trade programs or other measures. Comprehensive GHG legislation or regulation, including carbon pricing, will affect not only our business, but also that of our customers.

Regulation of GHG emissions from oil and natural gas E&P operations may also increase the costs to our customers of developing and producing hydrocarbons, and as a result, may have an indirect and adverse effect on the amount of oilfield waste delivered to our facilities by our customers. These statutes and regulations increase the costs of our operations, and future climate change statutes and regulations may have an impact as well.

Our business is subject to operational and safety risks, including the risk of personal injury to employees and others.

Providing environmental and waste management services, including constructing and operating landfills, involves risks such as truck accidents, equipment defects, malfunctions and failures. Additionally, we closely monitor and manage landfills to minimize the risk of waste mass instability and releases of hazardous materials or odors that could be triggered by weather or natural disasters. There may also be risks presented by the potential for subsurface chemical reactions causing elevated landfill temperatures.

We also build and operate natural gas fueling stations, some of which also serve the public or third parties. Operation of fueling stations and landfill gas collection and control systems involves additional risks of fire and explosion. Any of these risks could potentially result in injury or death of employees and others, a need to shut down or reduce operation of facilities, increased operating expense and exposure to liability for pollution and other environmental damage, and property damage or destruction.

While we seek to minimize our exposure to such risks through comprehensive training, compliance and response and recovery programs, as well as vehicle and equipment maintenance programs, if we were to incur substantial liabilities in excess of any applicable insurance coverage, our business, results of operations and financial condition could be adversely affected. Any such incidents could also tarnish our reputation and reduce the value of our brand. Additionally, a major operational failure, even if suffered by a competitor, may bring enhanced scrutiny and regulation of our industry, with a corresponding increase in operating expense.

Future changes in laws regulating the flow of solid waste in interstate commerce could adversely affect our operating results.

Various state, provincial and local governments and the Canadian federal government have enacted, have the authority to enact or are considering enacting laws and regulations that restrict disposal within the jurisdiction of solid waste generated outside the jurisdiction. In addition, some state, provincial and local governments and the Canadian federal government have promulgated, have the authority to promulgate or are considering promulgating laws and regulations which govern the flow of waste generated within their respective jurisdictions. These “flow control” laws and regulations typically require that waste generated within the jurisdiction be retained within the jurisdiction or be directed to specified facilities for disposal or processing, which could limit or prohibit the disposal or processing of waste in our transfer stations and landfills or require notices be delivered or permits to be obtained prior to transport or final disposal. Certain of these flow control laws and regulations could also require us to deliver waste we collect within a particular jurisdiction to facilities not owned or controlled by us, which could increase our costs and reduce our revenues. In addition, such laws and regulations could require us to obtain additional costly licenses or authorizations in order to be deemed an authorized hauler or disposal facility. All such waste disposal laws and regulations are subject to judicial interpretation and review. Court decisions, legislation and federal, state, provincial and local regulation in the waste disposal area could adversely affect our operations.

Extensive regulations that govern the design, operation, expansion and closure of landfills may restrict our landfill operations or increase our costs of operating landfills.

If we fail to comply with federal, state and provincial regulations, as applicable, governing the design, operation, expansion, closure and financial assurance of MSW, non-MSW and E&P waste landfills, we could be required to undertake investigatory or remedial activities, curtail operations or close such landfills temporarily or permanently. Future changes to these regulations may require us to modify, supplement or replace equipment or facilities at substantial costs. If regulatory agencies fail to enforce these regulations vigorously or consistently, our competitors whose facilities are not forced to comply with the regulations may obtain an advantage over us. Our financial obligations arising from any failure to comply with these regulations could harm our business and operating results.

Our E&P waste business could be adversely affected by changes in laws regulating E&P waste.

We believe that the demand for our E&P waste services is directly related to the regulation of E&P waste. In particular, the U.S. Resource Conservation and Recovery Act, or RCRA, which governs the disposal of solid and hazardous waste, currently exempts certain E&P wastes from classification as hazardous wastes. In recent years, proposals have been made to rescind this exemption from RCRA. If the exemption covering E&P wastes is repealed or modified, or if the regulations interpreting the rules regarding the treatment or disposal of this type of waste were changed, our operations could face significantly more stringent regulations, permitting requirements, and other restrictions, which could have a material adverse effect on our business.

In addition, if new federal, state, provincial or local laws or regulations that significantly restrict hydraulic fracturing are adopted, such legal requirements could result in delays, eliminate certain drilling and injection activities and make it more difficult or costly for our customers to perform fracturing. Any such regulations limiting or prohibiting hydraulic fracturing could reduce our customers' oil and natural gas E&P activities and, therefore, adversely affect our business. Such laws or regulations could also materially increase our costs of compliance and doing business by more strictly regulating how hydraulic fracturing wastes are handled or disposed. Conversely, any loosening of existing federal, state, provincial or local laws or regulations regarding how such wastes are handled or disposed could adversely impact demand for our services.

Liabilities for environmental damage may adversely affect our financial condition, business and earnings.

We may be liable for any environmental damage that our current or former operations cause, including damage to neighboring landowners or residents, particularly as a result of the contamination of soil, groundwater or surface water, and especially drinking water, or to natural resources. We may be liable for damage resulting from conditions existing before we acquired these operations. Even if we obtain legally enforceable representations, warranties and indemnities from the sellers of these operations, they may not cover the liabilities fully or the sellers may not have sufficient funds to perform their obligations.

We may also be liable for any on-site environmental contamination caused by pollutants or hazardous substances whose transportation, treatment or disposal we or our predecessors arranged or conducted. Some environmental laws and regulations may impose strict, joint and several liability in connection with releases of regulated substances into the environment. Therefore, in some situations we could be exposed to liability as a result of our conduct that was lawful at the time it occurred or the conduct of, or conditions caused by, third parties, including our predecessors. If we were to incur liability for environmental damage, environmental clean-ups, corrective action or damage not covered by insurance or in excess of the amount of our coverage, our financial condition or operating results could be materially adversely affected. For example, see the discussion regarding the Lower Duwamish Waterway Superfund Site Allocation Process in Note 10, "Commitments and Contingencies," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

We depend significantly on the services of the members of our senior and regional management team, and the departure of any of those persons could cause our operating results to suffer.

Our success depends significantly on the continued individual and collective contributions of our senior and regional management team. Of particular importance to our success are the services of our founder, Chief Executive Officer and Chairman, Ronald J. Mittelstaedt. Key members of our management, including Mr. Mittelstaedt, have entered into employment agreements, but we may not be able to enforce these agreements. The loss of the services of any member of our senior and regional management or the inability to hire and retain experienced management personnel could harm our operating results.

Our decentralized decision-making structure could allow local managers to make decisions that may adversely affect our operating results.

We manage our operations on a decentralized basis. Local managers have the authority to make many decisions concerning their operations without obtaining prior approval from executive officers, subject to compliance with general company-wide policies. Poor decisions by local managers could result in the loss of customers or increases in costs, in either case adversely affecting operating results.

If we are not able to develop and protect intellectual property, or if a competitor develops or obtains exclusive rights to a breakthrough technology, our financial results may suffer.

Our existing and proposed service offerings to customers may require that we develop or license, and protect, new technologies. We may experience difficulties or delays in the research, development, production and/or marketing of new products and services which may negatively impact our operating results and prevent us from recouping or realizing a return on the investments required to bring new products and services to market. Further, protecting our intellectual property rights and combating unlicensed copying and use of intellectual property is difficult, and any inability to obtain or protect new technologies could impact our services to customers and development of new revenue sources. Additionally, a competitor may develop or obtain exclusive rights to a "breakthrough technology" that claims to provide a revolutionary change in traditional waste management. If we have inferior intellectual property to our competitors, our financial results may suffer.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

As of December 31, 2018, we owned 279 solid waste collection operations, 113 transfer stations, 56 MSW landfills, 11 E&P waste landfills, 14 non-MSW landfills, 64 recycling operations, four intermodal operations, 22 E&P liquid waste injection wells and 19 E&P waste treatment and oil recovery facilities, and operated, but did not own, an additional 49 transfer stations, 12 MSW landfills and two intermodal operations, in 41 states in the U.S. and six provinces in Canada. Non-MSW landfills accept construction and demolition, industrial and other non-putrescible waste. We lease certain of the sites on which these facilities are located. We lease various office facilities, including our combined corporate and regional offices in Ontario, Canada, where we occupy approximately 12,000 square feet of space, and our administrative and regional offices in The Woodlands, Texas, where we occupy approximately 75,000 square feet of space. We also maintain regional administrative offices in each of our segments. We own a variety of equipment, including waste collection and transportation vehicles, related support vehicles, double-stack rail cars, carts, containers, chassis and heavy equipment used in landfill, collection, transfer station, waste treatment and intermodal operations. We believe that our existing facilities and equipment are adequate for our current operations. However, we expect to make additional investments in property and equipment for expansion and replacement of assets in connection with future acquisitions.

ITEM 3. LEGAL PROCEEDINGS

Information regarding our legal proceedings can be found under the "Legal Proceedings" section in Note 10 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10K and is incorporated herein by reference.

ITEM 4. MINE SAFETY DISCLOSURE

None.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED SHAREHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common shares are listed on the New York Stock Exchange, or NYSE, and the Toronto Stock Exchange, or TSX, under the symbol "WCN".

As of February 1, 2019, there were 85 holders of record of our common shares. Because many of our common shares are held by brokers and other institutions on behalf of shareholders, we are unable to estimate the total number of shareholders represented by these record holders.

On February 13, 2019, we announced that our Board of Directors approved a regular quarterly cash dividend of \$0.16 per common share. All dividends paid by the Company on its common shares after June 1, 2016 will be designated as "eligible dividends" for Canadian tax purposes until a notification of change is posted on our website. Our Board of Directors will review the cash dividend periodically, with a long-term objective of increasing the amount of the dividend. We cannot assure you as to the amounts or timing of future dividends. We have the ability under our Credit Agreement (as defined below) and master note purchase agreements to repurchase our common shares and pay dividends provided we maintain specified financial ratios.

On July 24, 2018, our Board of Directors approved, subject to receipt of regulatory approvals, the annual renewal of our normal course issuer bid, or NCIB, to purchase up to 13,174,976 of our common shares during the period of August 8, 2018 to August 7, 2019 or until such earlier time as the NCIB is completed or terminated at our option. The renewal followed the conclusion of our NCIB that expired August 7, 2018. We received TSX approval for our annual renewal of the NCIB on August 2, 2018. Under the NCIB, we may make share repurchases only in the open market, including on the NYSE, the TSX, and/or alternative Canadian trading systems, at the prevailing market price at the time of the transaction. The timing and amounts of any repurchases pursuant to the NCIB will depend on many factors, including our capital structure, the market price of the common shares and overall market conditions. All common shares purchased under the NCIB shall be immediately cancelled following their repurchase. During the year ended December 31, 2018, we repurchased 831,704 common shares pursuant to our NCIB in effect during such period at an aggregate cost of \$58.9 million, or an average price of \$70.85 per share. The table below reflects repurchases we made during the three months ended December 31, 2018 (in thousands of U.S. dollars, except share and per share amounts):

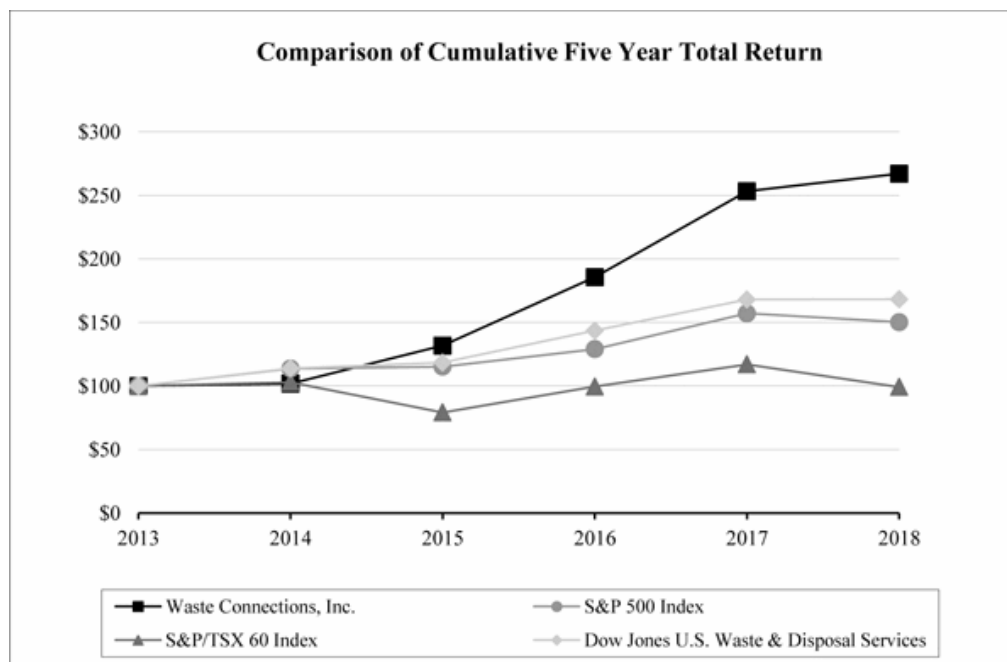
Period	Total Number of Shares Purchased	Average Price Paid Per Share⁽¹⁾	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Number of Shares that May Yet Be Purchased Under the Program
10/1/18 – 10/31/18	-	\$ -	-	13,174,976
11/1/18 – 11/30/18	-	\$ -	-	13,174,976
12/1/18 – 12/31/18	237,230	\$ 71.18	237,230	12,937,746
	<u>237,230</u>	\$ 71.18	<u>237,230</u>	

(1) This amount represents the weighted average price paid per common share. This price includes a per share commission paid for all repurchases.

Performance Graph

The following performance graph compares the total cumulative shareholder returns on our common shares over the past five fiscal years with the total cumulative returns for the S&P 500 Index, the S&P/TSX 60 Index and the Dow Jones U.S. Waste and Disposal Services Index, or DJ Waste Services Index.

The graph depicts a five-year comparison of cumulative total returns for Old Waste Connections common stock for periods prior to the completion of the Progressive Waste acquisition on June 1, 2016, and New Waste Connections common shares for periods following the completion of the Progressive Waste acquisition. The graph assumes an investment of US\$100 in our common shares on December 31, 2013, and the reinvestment of all dividends. This chart has been calculated in compliance with SEC requirements and prepared by Capital IQ[®] using the USD index in the case of the S&P/TSX 60 Index.



This graph and the accompanying text is not “soliciting material,” is not deemed filed with the SEC, and is not to be incorporated by reference in any filing by us under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Company Name / Index	Base Period	Indexed Returns					
		Dec13	Dec14	Dec15	Dec16	Dec17	Dec18
Waste Connections, Inc.	\$ 100	\$ 101.86	\$ 131.84	\$ 185.60	\$ 253.26	\$ 267.10	
S&P 500 Index	\$ 100	\$ 113.69	\$ 115.26	\$ 129.05	\$ 157.22	\$ 150.33	
S&P/TSX 60 Index	\$ 100	\$ 102.99	\$ 79.21	\$ 99.58	\$ 117.01	\$ 99.20	
Dow Jones U.S. Waste & Disposal Services Index	\$ 100	\$ 113.75	\$ 118.52	\$ 143.58	\$ 168.10	\$ 168.29	

THE SHARE PRICE PERFORMANCE INCLUDED IN THIS GRAPH IS NOT NECESSARILY INDICATIVE OF FUTURE SHARE PRICE PERFORMANCE.

ITEM 6. SELECTED FINANCIAL DATA

This table sets forth our selected financial data for the periods indicated. This data should be read in conjunction with, and is qualified by reference to, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in Item 7 of this Annual Report on Form 10-K and our audited consolidated financial statements, including the related notes and our independent registered public accounting firms’ reports and the other financial information included in Item 8 of this Annual Report on Form 10-K. The selected data in this section is not intended to replace the consolidated financial statements included in this Annual Report on Form 10-K.

	YEARS ENDED DECEMBER 31,				
	2018 ^(a)	2017 ^(a)	2016 ^(a)	2015	2014
<i>(in thousands of U.S. dollars, except share and per share data)</i>					
STATEMENT OF OPERATIONS DATA:					
Revenues	\$ 4,922,941	\$ 4,630,488	\$ 3,375,863	\$ 2,117,287	\$ 2,079,166
Operating expenses:					
Cost of operations	2,865,704	2,704,775	1,957,712	1,177,409	1,138,388
Selling, general and administrative	524,388	509,638	474,263	237,484	229,474
Depreciation	572,708	530,187	393,600	240,357	230,944
Amortization of intangibles	107,779	102,297	70,312	29,077	27,000
Impairments and other operating items	20,118	156,493	27,678	494,492	4,091
Operating income (loss)	832,244	627,098	452,298	(61,532)	449,269
Interest expense	(132,104)	(125,297)	(92,709)	(64,236)	(64,674)
Interest income	7,170	5,173	602	487	529
Other income (expense), net	1,263	3,736	53	(1,005)	538
Foreign currency transaction gain (loss)	(1,433)	(2,200)	1,121	-	-
Income (loss) before income tax provision	707,140	508,510	361,365	(126,286)	385,662
Income tax (provision) benefit	(159,986)	68,910	(114,044)	31,592	(152,335)
Net income (loss)	547,154	577,420	247,321	(94,694)	233,327
Less: Net income attributable to noncontrolling interests	(283)	(603)	(781)	(1,070)	(802)
Net income (loss) attributable to Waste Connections	<u>\$ 546,871</u>	<u>\$ 576,817</u>	<u>\$ 246,540</u>	<u>\$ (95,764)</u>	<u>\$ 232,525</u>
Earnings (loss) per common share attributable to Waste Connections’ common shareholders:					
Basic	<u>\$ 2.07</u>	<u>\$ 2.19</u>	<u>\$ 1.07</u>	<u>\$ (0.52)</u>	<u>\$ 1.25</u>
Diluted	<u>\$ 2.07</u>	<u>\$ 2.18</u>	<u>\$ 1.07</u>	<u>\$ (0.52)</u>	<u>\$ 1.24</u>
Shares used in the per share calculations:					
Basic ^(b)	<u>263,650,155</u>	<u>263,682,608</u>	<u>230,325,012</u>	<u>185,237,896</u>	<u>186,323,019</u>
Diluted ^(b)	<u>264,395,618</u>	<u>264,302,411</u>	<u>231,081,496</u>	<u>185,237,896</u>	<u>187,181,131</u>
Cash dividends per common share	<u>\$ 0.580</u>	<u>\$ 0.500</u>	<u>\$ 0.410</u>	<u>\$ 0.357</u>	<u>\$ 0.317</u>
Cash dividends paid	<u>\$ 152,550</u>	<u>\$ 131,975</u>	<u>\$ 92,547</u>	<u>\$ 65,990</u>	<u>\$ 58,906</u>

(a) For more information regarding this selected financial data, see the Management’s Discussion and Analysis of Financial Condition and Results of Operations section included in Item 7 of this Annual Report on Form 10-K.

(b) Share amounts have been retroactively adjusted to reflect the split of our common shares on a three-for-two basis, effective as of June 16, 2017.

DECEMBER 31,

	2018	2017	2016	2015	2014
	<i>(in thousands of U.S. dollars)</i>				
BALANCE SHEET DATA:					
Cash and equivalents	\$ 319,305	\$ 433,815	\$ 154,382	\$ 10,974	\$ 14,353
Working capital surplus (deficit)	232,194	374,269	51,215	(65,575)	(43,675)
Property and equipment, net	5,168,996	4,820,934	4,738,055	2,738,288	2,594,205
Total assets	12,627,329	12,014,681	11,103,925	5,072,071	5,195,759
Long-term debt and notes payable	4,153,465	3,899,572	3,616,760	2,147,127	1,971,152
Total equity	6,460,188	6,274,070	5,654,877	1,991,784	2,233,741

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in conjunction with the "Selected Financial Data" included in Item 6 of this Annual Report on Form 10-K, our consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K.

Industry Overview

The solid waste industry is local and highly competitive in nature, requiring substantial labor and capital resources. The participants compete for collection accounts primarily on the basis of price and, to a lesser extent, the quality of service, and compete for landfill business on the basis of tipping fees, geographic location and quality of operations. The solid waste industry has been consolidating and continues to consolidate as a result of a number of factors, including the increasing costs and complexity associated with waste management operations and regulatory compliance. Many small independent operators and municipalities lack the capital resources, management, operating skills and technical expertise necessary to operate effectively in such an environment. The consolidation trend has caused solid waste companies to operate larger landfills that have complementary collection routes that can use company-owned disposal capacity. Controlling the point of transfer from haulers to landfills has become increasingly important as landfills continue to close and disposal capacity moves farther from the collection markets it serves.

Generally, the most profitable operators within the solid waste industry are those companies that are vertically integrated or enter into long-term collection contracts. A vertically integrated operator will benefit from: (1) the internalization of waste, which is bringing waste to a company-owned landfill; (2) the ability to charge third-party haulers tipping fees either at landfills or at transfer stations; and (3) the efficiencies gained by being able to aggregate and process waste at a transfer station prior to landfilling.

The E&P waste services industry is regional in nature and is also highly fragmented, with acquisition opportunities available in several active natural resource basins. Competition for E&P waste comes primarily from smaller regional companies that utilize a variety of disposal methods and generally serve specific geographic markets, and other solid waste companies. In addition, customers in many markets have the option of using internal disposal methods or outsourcing to another third-party disposal company. The principal competitive factors in this business include: gaining customer approval of treatment and disposal facilities; location of facilities in relation to customer activity; reputation; reliability of services; track record of environmental compliance; ability to accept multiple waste types at a single facility; and price. The demand for our E&P waste services depends on the continued demand for, and production of, oil and natural gas. Crude oil and natural gas prices historically have been volatile and the substantial reductions in crude oil prices that began in October 2014, and continued through early 2016, resulted in a decline in the level of drilling and production activity, reducing the demand for E&P waste services in the basins in which we operate. Upon the adoption in January 2017 of new accounting guidance regarding goodwill impairment, we performed an impairment test for our E&P segment which showed its carrying value exceeded its fair value by an amount in excess of the carrying amount of goodwill, or \$77.3 million. Therefore, during the year ended December 31, 2017, we recorded an impairment charge of \$77.3 million, consisting of the remaining carrying amount of goodwill at our E&P segment. At December 31, 2018, the total carrying value of intangible assets and property and equipment at our E&P segment is \$64.1 million and \$857.3 million, respectively. The prices of crude oil and natural gas have recovered from their low point in February 2016 and the demand for our E&P waste services has improved as a result of increased production of oil and natural gas in the basins in which we operate. If this recovery of the prices of crude oil and natural gas is not sustained, or if a further reduction in crude oil and natural gas prices occurs, it could lead to continued declines in the level of production activity and demand for our E&P waste services, which could result in the recognition of additional impairment charges on our intangible assets and property and equipment associated with our E&P operations.

Executive Overview

We are an integrated solid waste services company that provides non-hazardous waste collection, transfer, disposal and recycling services in mostly exclusive and secondary markets in the U.S. and Canada. Through our R360 Environmental Solutions subsidiary, we are also a leading provider of non-hazardous E&P waste treatment, recovery and disposal services in several of the most active natural resource producing areas in the U.S. We also provide intermodal services for the rail haul movement of cargo and solid waste containers in the Pacific Northwest through a network of intermodal facilities.

We generally seek to avoid highly competitive, large urban markets and instead target markets where we can attain high market share either through exclusive contracts, vertical integration or asset positioning. In markets where waste collection services are provided under exclusive arrangements, or where waste disposal is municipally owned or funded or available at multiple municipal sources, we believe that controlling the waste stream by providing collection services under exclusive arrangements is often more important to our growth and profitability than owning or operating landfills. We also target niche markets, like E&P waste treatment and disposal services.

2018 Financial Performance

The functional currency of the Company, as the parent corporate entity, and its operating subsidiaries in the United States is the U.S. dollar. The functional currency of the Company's Canadian operations is the Canadian dollar. The reporting currency of the Company is the U.S. dollar. The Company's consolidated Canadian dollar financial position is translated to U.S. dollars by applying the foreign currency exchange rate in effect at the consolidated balance sheet date. The Company's consolidated Canadian dollar results of operations and cash flows are translated to U.S. dollars by applying the average foreign currency exchange rate in effect during the reporting period. The resulting translation adjustments are included in other comprehensive income or loss. Gains and losses from foreign currency transactions are included in earnings for the period.

Operating Results

Revenues in 2018 increased 6.3% to \$4.923 billion from \$4.630 billion in 2017, due partly to acquisitions closed during, or subsequent to, the prior year, net of divestitures, which accounted for \$153.1 million in incremental revenues in 2018, with the remainder due primarily to internal growth in solid waste and higher E&P waste activity. Solid waste internal growth was 2.2%, due to price increases and fuel, materials and environmental surcharges, which were partially offset by lower volumes and recycled commodity values. Pricing growth was 4.5%, with core pricing up 4.1% and fuel, materials and environmental surcharges adding another 0.4%. Volumes decreased by 0.7% on increases in landfill and hauling volumes, more than offset by purposeful shedding of poor quality volumes at certain Progressive Waste operations. Decreases in recycled commodity prices resulted in another 1.6% decrease to internal solid waste growth. E&P waste revenues increased to \$244.6 million from \$192.0 million in 2017, due to increased activity at existing facilities.

In 2018, net income attributable to Waste Connections decreased 5.2% to \$546.9 million from \$576.8 million in 2017, due primarily to the impact in 2017 of the income tax benefit primarily associated with an adjustment of our deferred tax liability balance resulting from the enactment of the Tax Act in December 2017, partially offset by the lower tax rate in 2018 resulting from the Tax Act.

In 2018, adjusted earnings before interest, taxes, depreciation and amortization, or adjusted EBITDA, a non-GAAP financial measure (refer to page 71 of this Annual Report on Form 10-K for a definition and reconciliation to Net income attributable to Waste Connections), increased 7.2% to \$1.566 billion, from \$1.461 billion in 2017. As a percentage of revenue, adjusted EBITDA increased from 31.5% in 2017, to 31.8% in 2018. This 0.3% percentage point increase was due to increases in E&P activity and price led organic solid waste growth, partially offset by lower recycled commodity values. Adjusted net income attributable to Waste Connections, a non-GAAP financial measure (refer to page 72 of this Annual Report on Form 10-K for a definition and reconciliation to Net income attributable to Waste Connections), in 2018 increased 16.9% to \$667.3 million from \$570.7 million in 2017.

Adjusted Free Cash Flow

Net cash provided by operating activities increased 18.9% to \$1.411 billion in 2018, from \$1.187 billion in 2017, and capital expenditures increased from \$479.3 million in 2017 to \$546.1 million in 2018, an increase of \$66.8 million, or 13.9%. These increases in capital expenditures were primarily due to acquisitions closed during, or subsequent to, the prior year. Adjusted free cash flow, a non-GAAP financial measure (refer to page 70 of this Annual Report on Form 10-K for a definition and reconciliation to Net cash provided by operating activities), increased by \$116.0 million to \$879.9 million in 2018, from \$763.9 million in 2017. Adjusted free cash flow as a percentage of revenues was 17.9% in 2018, as compared to 16.5% in 2017.

Return of Capital to Shareholders

In 2018, we returned \$211.5 million to shareholders through a combination of cash dividends and share repurchases. Cash dividends increased \$20.6 million, or 15.6%, to \$152.6 million in 2018 from \$132.0 million in 2017, due to a 16.7% increase in the quarterly cash dividend declared by our Board of Directors in October 2017, which was followed by an additional 14.3% increase in October 2018. Our Board of Directors intends to review the quarterly dividend during the fourth quarter of each year, with a long-term objective of increasing the amount of the dividend. In addition, in 2018, we repurchased 831,704 common shares for an aggregate cost of \$58.9 million. We expect the amount of capital we return to shareholders through share repurchases to vary depending on our financial condition and results of operations, capital structure, the amount of cash we deploy on acquisitions, expectations regarding the timing and size of acquisitions, the market price of our common shares, and overall market conditions. We cannot assure you as to the amounts or timing of future share repurchases or dividends. We have the ability under our Credit Agreement and master note purchase agreements to repurchase our common shares and pay dividends provided that we maintain specified financial ratios.

Capital Position

We target a leverage ratio, as defined in our Credit Agreement, of approximately 2.75x – 3.0x total debt to EBITDA. The percentage increase in EBITDA in 2018 more than offset the percentage increase in debt in 2018; therefore, our leverage ratio decreased to 2.45x at December 31, 2018, from 2.53x at December 31, 2017.

Critical Accounting Estimates and Assumptions

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires estimates and assumptions that affect the reported amounts of assets and liabilities, revenues and expenses and related disclosures of contingent assets and liabilities in the consolidated financial statements. As described by the SEC, critical accounting estimates and assumptions are those that may be material due to the levels of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change, and that have a material impact on the financial condition or operating performance of a company. Such critical accounting estimates and assumptions are applicable to our reportable segments. Based on this definition, we believe the following are our critical accounting estimates.

Insurance liabilities. We maintain insurance policies for automobile, general, employer's, environmental, cyber, employment practices and directors' and officers' liability as well as for employee group health insurance, property insurance and workers' compensation. We carry umbrella policies for certain types of claims to provide excess coverage over the underlying policies and per incident deductibles or self-insured retentions. Our insurance accruals are based on claims filed and estimates of claims incurred but not reported and are developed by our management with assistance from our third-party actuary and third-party claims administrator. The insurance accruals are influenced by our past claims experience factors, which have a limited history, and by published industry development factors. If we experience insurance claims or costs above or below our historically evaluated levels, our estimates could be materially affected. The frequency and amount of claims or incidents could vary significantly over time, which could materially affect our self-insurance liabilities. Additionally, the actual costs to settle the self-insurance liabilities could materially differ from the original estimates and cause us to incur additional costs in future periods associated with prior year claims.

Income taxes. Deferred income tax assets and liabilities are determined based on differences between the financial reporting and income tax bases of assets and liabilities and are measured using the enacted tax rates and laws that are expected to be in effect when the differences are expected to reverse. If our judgment and estimates concerning assumptions made in calculating our expected future income tax rates are incorrect, our deferred income tax assets and liabilities would change. Based on our deferred income tax liability balance at December 31, 2018, each 0.1 percentage point change to our expected future income tax rates would change our deferred income tax liability balance and income tax expense by approximately \$2.8 million.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act, or the Tax Act. The Tax Act made broad and complex changes to the U.S. tax code that affected 2017, including, but not limited to, (1) requiring a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries that is payable over eight years and (2) bonus depreciation that will allow for full expensing of qualified property.

The Tax Act also established new tax laws that affected years beginning after December 31, 2017, including, but not limited to, (1) a reduction of the U.S. federal corporate income tax rate from 35 percent to 21 percent; (2) elimination of the corporate alternative minimum tax; (3) the creation of the base erosion anti-abuse tax, which acts similar to a new minimum tax; (4) a general elimination of U.S. federal income taxes on dividends from foreign subsidiaries; (5) a new provision designed to tax global intangible low-taxed income, which allows for the possibility of using foreign tax credits, or FTCs, and a deduction of up to 50 percent to offset the income tax liability (subject to some limitations); (6) a new limitation on deductible interest expense; (7) limitations on the deductibility of certain executive compensation; (8) bonus depreciation that allows for full expensing of qualified property; and (9) limitations on net operating losses.

On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118, or SAB 118, which provides guidance on accounting for the tax effects of the Tax Act. SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting under ASC 740. In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Tax Act for which the accounting under ASC 740 is complete. To the extent that a company's accounting for certain income tax effects of the Tax Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate to be included in the financial statements, it should continue to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act.

In connection with our analysis of the Tax Act, we recorded a discrete net income tax benefit of \$269.8 million in the year ended December 31, 2017. This net income tax benefit was primarily the result of the reduction to the corporate income tax rate. Additionally, the Tax Act's one-time deemed repatriation transition tax, or the Transition Tax, on certain unrepatriated earnings of non-U.S. subsidiaries is a tax on previously untaxed accumulated and current earnings and profits of certain of our non-U.S. subsidiaries. To determine the amount of the Transition Tax, we had to determine, in addition to other factors, the amount of post-1986 earnings and profits of the relevant subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. We were able to make a reasonable estimate of the Transition Tax and recorded a provisional Transition Tax obligation of \$1.0 million for the year ended December 31, 2017. The Transition Tax, which has now been determined to be complete, resulted in a total Transition Tax obligation of \$0.7 million, with a corresponding adjustment of \$0.3 million to income tax expense for the year ended December 31, 2018. Further, as it relates to our policy regarding the accounting for the tax impacts of global intangible low-taxed income, we have elected to record the tax impacts as period costs.

Additionally, in conjunction with the Tax Act, we recorded a provisional deferred income tax expense of \$62.4 million for the year ended December 31, 2017 associated with a portion of our U.S. earnings no longer permanently reinvested. During the year ended December 31, 2018, we recorded a deferred income tax expense of \$6.4 million associated with refinements to the prior year estimate as a measurement period adjustment pursuant to SAB 118. This resulted in total deferred income tax expense of \$68.8 million which has now been determined to be complete.

Accounting for landfills. We recognize landfill depletion expense as airspace of a landfill is consumed. Our landfill depletion rates are based on the remaining disposal capacity at our landfills, considering both permitted and probable expansion airspace. We calculate the net present value of our final capping, closure and post-closure commitments by estimating the total obligation in current dollars, inflating the obligation based upon the expected date of the expenditure and discounting the inflated total to its present value using a credit-adjusted risk-free rate. Any changes in expectations that result in an upward revision to the estimated undiscounted cash flows are treated as a new liability and are inflated and discounted at rates reflecting current market conditions. Any changes in expectations that result in a downward revision (or no revision) to the estimated undiscounted cash flows result in a liability that is inflated and discounted at rates reflecting the market conditions at the time the cash flows were originally estimated. This policy results in our final capping, closure and post-closure liabilities being recorded in "layers." The resulting final capping, closure and post-closure obligations are recorded on the consolidated balance sheet along with an offsetting addition to site costs, which is amortized to depletion expense as the remaining landfill airspace is consumed. Interest is accreted on the recorded liability using the corresponding discount rate. The accounting methods discussed below require us to make certain estimates and assumptions. Changes to these estimates and assumptions could have a material effect on our financial condition and results of operations. Any changes to our estimates are applied prospectively.

Landfill development costs. Landfill development costs include the costs of acquisition, construction associated with excavation, liners, site berms, groundwater monitoring wells, gas recovery systems and leachate collection systems. We estimate the total costs associated with developing each landfill site to its final capacity. Total landfill costs include the development costs associated with expansion airspace. Expansion airspace is described below. Landfill development costs depend on future events and thus actual costs could vary significantly from our estimates. Material differences between estimated and actual development costs may affect our cash flows by increasing our capital expenditures and thus affect our results of operations by increasing our landfill depletion expense.

Final capping, closure and post-closure obligations. We accrue for estimated final capping, closure and post-closure maintenance obligations at the landfills we own, and the landfills that we operate, but do not own, under life-of-site agreements. We could have additional material financial obligations relating to final capping, closure and post-closure costs at other disposal facilities that we currently own or operate or that we may own or operate in the future. Our discount rate assumption for purposes of computing 2018 and 2017 "layers" for final capping, closure and post-closure obligations was 4.75% for both years, which reflects our long-term credit adjusted risk free rate as of the end of both 2017 and 2016. Our inflation rate assumption was 2.5% for the years ended December 31, 2018 and 2017. Significant reductions in our estimates of the remaining lives of our landfills or significant increases in our estimates of the landfill final capping, closure and post-closure maintenance costs could have a material adverse effect on our financial condition and results of operations. Additionally, changes in regulatory or legislative requirements could increase our costs related to our landfills, resulting in a material adverse effect on our financial condition and results of operations.

We own two landfills for which the prior owner is obligated to reimburse us for certain costs we incur for final capping, closure and post-closure activities on the portion of the landfills utilized by the prior owner. We accrue the prior owner's portion of the final capping, closure and post-closure obligation within the balance sheet classification of Other long-term liabilities, and a corresponding receivable from the prior owner in long-term Other assets.

Disposal capacity. Our internal and third-party engineers perform surveys at least annually to estimate the remaining disposal capacity at our landfills. Our landfill depletion rates are based on the remaining disposal capacity, considering both permitted and probable expansion airspace, at the landfills that we own and at landfills that we operate, but do not own, under life-of-site agreements. Our landfill depletion rate is based on the term of the operating agreement at our operated landfill that has capitalized expenditures. Expansion airspace consists of additional disposal capacity being pursued through means of an expansion that has not yet been permitted. Expansion airspace that meets the following criteria is included in our estimate of total landfill airspace:

- 1) whether the land where the expansion is being sought is contiguous to the current disposal site, and we either own the expansion property or have rights to it under an option, purchase, operating or other similar agreement;
- 2) whether total development costs, final capping costs, and closure/post-closure costs have been determined;
- 3) whether internal personnel have performed a financial analysis of the proposed expansion site and have determined that it has a positive financial and operational impact;
- 4) whether internal personnel or external consultants are actively working to obtain the necessary approvals to obtain the landfill expansion permit; and
- 5) whether we consider it probable that we will achieve the expansion (for a pursued expansion to be considered probable, there must be no significant known technical, legal, community, business or political restrictions or similar issues existing that we believe are more likely than not to impair the success of the expansion).

We may be unsuccessful in obtaining permits for expansion disposal capacity at our landfills. In such cases, we will charge the previously capitalized development costs to expense. This will adversely affect our operating results and cash flows and could result in greater landfill depletion expense being recognized on a prospective basis.

We periodically evaluate our landfill sites for potential impairment indicators. Our judgments regarding the existence of impairment indicators are based on regulatory factors, market conditions and operational performance of our landfills. Future events could cause us to conclude that impairment indicators exist and that our landfill carrying costs are impaired. Any resulting impairment loss could have a material adverse effect on our financial condition and results of operations.

Goodwill and indefinite-lived intangible assets testing. Goodwill and indefinite-lived intangible assets are tested for impairment on at least an annual basis in the fourth quarter of the year. In addition, we evaluate our reporting units for impairment if events or circumstances change between annual tests indicating a possible impairment. Examples of such events or circumstances include, but are not limited to, the following:

- a significant adverse change in legal factors or in the business climate;
- an adverse action or assessment by a regulator;
- a more likely than not expectation that a segment or a significant portion thereof will be sold;
- the testing for recoverability of a significant asset group within the segment; or
- current period or expected future operating cash flow losses.

We elected to early adopt the guidance issued by the Financial Accounting Standards Board, or FASB, "Simplifying the Test for Goodwill Impairment" on January 1, 2017. The new guidance removes Step 2 of the goodwill impairment test, which required a hypothetical purchase price allocation. As such, the impairment analysis is only one step. In this step, we estimate the fair value of each of our reporting units, which consisted of testing our five geographic solid waste operating segments and our E&P segment at December 31, 2016 and our five geographic solid waste operating segments at December 31, 2017 and 2018, using discounted cash flow analyses, which require significant assumptions and estimates about the future operations of each reporting unit. We did not test our E&P segment for goodwill impairment at December 31, 2017 and 2018 because the carrying value of its goodwill was \$0. We compare the fair value of each reporting unit to the carrying value of its net assets. If the fair value of a reporting unit is greater than the carrying value of the net assets, including goodwill, assigned to the reporting unit, then no impairment results. If the fair value is less than its carrying value, an impairment charge is recorded for the amount by which the carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. In testing indefinite-lived intangible assets for impairment, we compare the estimated fair value of each indefinite-lived intangible asset to its carrying value. If the fair value of the indefinite-lived intangible asset is less than its carrying value, an impairment charge would be recorded to earnings in our Consolidated Statements of Net Income.

Significant judgments inherent in these analyses include the determination of appropriate discount rates, the amount and timing of expected future cash flows and growth rates. In assessing the reasonableness of our determined fair values of our reporting units, we evaluate our results against our current market capitalization. For our impairment testing of our solid waste geographic operating segments for the year ended December 31, 2018, we determined that the indicated fair value of our reporting units exceeded their carrying value by approximately 85% on average and, therefore, we did not record an impairment charge. The detailed results of our 2016, 2017 and 2018 impairment tests are described in Note 1 of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

For our annual impairment analysis of our E&P segment for the year ended December 31, 2016, we performed our Step 1 assessment of our E&P segment. The Step 1 assessment involved measuring the recoverability of goodwill by comparing the E&P segment's carrying amount, including goodwill, to the fair value of the reporting unit. The fair value was estimated using an income approach employing a discounted cash flow, or DCF, model. The DCF model incorporated projected cash flows over a forecast period based on the remaining estimated lives of the operating locations comprising the E&P segment. This was based on a number of key assumptions, including, but not limited to, a discount rate of 12%, annual revenue projections based on E&P waste resulting from projected levels of oil and natural gas E&P activity during the forecast period, gross margins based on estimated operating expense requirements during the forecast period and estimated capital expenditures over the forecast period, all of which were classified as Level 3 in the fair value hierarchy. As a result of the Step 1 assessment, we determined that the E&P segment did not pass the Step 1 test because the carrying value exceeded the estimated fair value of the reporting unit. We then performed the Step 2 test to determine the fair value of goodwill for our E&P segment. Based on the Step 1 and Step 2 analyses, we did not record an impairment charge to our E&P segment as a result of our goodwill impairment test during the year ended December 31, 2016; however, the results of our annual impairment testing indicated that the carrying value of our E&P segment exceeded its fair value by more than \$77.3 million, which was the carrying value of goodwill at our E&P segment at December 31, 2016. Upon adopting this accounting guidance in the first quarter of 2017, we performed an updated impairment test for our E&P segment. The impairment test involved measuring the recoverability of goodwill by comparing the E&P segment's carrying amount, including goodwill, to the fair value of the reporting unit. The fair value was estimated using an income approach employing a DCF model. The DCF model incorporated projected cash flows over a forecast period based on the remaining estimated lives of the operating locations comprising the E&P segment. This was based on a number of key assumptions, including, but not limited to, a discount rate of 11.7%, annual revenue projections based on E&P waste resulting from projected levels of oil and natural gas exploration and production activity during the forecast period, gross margins based on estimated operating expense requirements during the forecast period and estimated capital expenditures over the forecast period, all of which were classified as Level 3 in the fair value hierarchy. The impairment test showed the carrying value of the E&P segment continued to exceed its fair value by an amount in excess of the carrying amount of goodwill, or \$77.3 million. Therefore, we recorded an impairment charge of \$77.3 million, consisting of the carrying amount of goodwill at our E&P segment at January 1, 2017, to Impairments and other operating charges in the Consolidated Statements of Net Income during the year ended December 31, 2017.

Additionally, we evaluated the recoverability of the E&P segment's indefinite-lived intangible assets (other than goodwill) by comparing the estimated fair value of each indefinite-lived intangible asset to its carrying value. We estimated the fair value of the indefinite-lived intangible assets using an excess earnings approach. Based on the result of the recoverability test during the years ended December 31, 2017 and 2018, we did not record an impairment charge. Based on the results of the recoverability test during the year ended December 31, 2016, we determined that the carrying values of certain indefinite-lived intangible assets within the E&P segment exceeded their fair values and were therefore not recoverable. We recorded an impairment charge to Impairments and other operating items in the Consolidated Statements of Net Income on certain indefinite-lived intangible assets within our E&P segment of \$156,000 during the year ended December 31, 2016.

Business Combination Accounting. We recognize, separately from goodwill, the identifiable assets acquired and liabilities assumed at their estimated acquisition date fair values. We measure and recognize goodwill as of the acquisition date as the excess of: (a) the aggregate of the fair value of consideration transferred, the fair value of any noncontrolling interest in the acquiree (if any) and the acquisition date fair value of our previously held equity interest in the acquiree (if any), over (b) the fair value of net assets acquired and liabilities assumed. At the acquisition date, we measure the fair values of all assets acquired and liabilities assumed that arise from contractual contingencies. We measure the fair values of all noncontractual contingencies if, as of the acquisition date, it is more likely than not that the contingency will give rise to an asset or liability.

General

Our revenues consist mainly of fees we charge customers for collection, transfer, recycling and disposal of non-hazardous solid waste and treatment, recovery and disposal of non-hazardous E&P waste.

Our solid waste collection business involves the collection of waste from residential, commercial and industrial customers for transport to transfer stations, or directly to landfills or recycling centers. Solid waste collection services include both recurring and temporary customer relationships. The services are performed under service agreements, municipal contracts or franchise agreements with governmental entities. Our existing franchise agreements and most of our existing municipal contracts give us the exclusive right to provide specified waste services in the specified territory during the contract term. These exclusive arrangements are awarded, at least initially, on a competitive bid basis and subsequently on a bid or negotiated basis. The standard customer service agreements generally range from one to three years in duration, although some exclusive franchises are for significantly longer periods. Residential collection services are also provided on a subscription basis with individual households.

The fees received for collection services are based primarily on the market, collection frequency and level of service, route density, type and volume; or weight of the waste collected, type of equipment and containers furnished, the distance to the disposal or processing facility, the cost of disposal or processing, and prices charged by competitors for similar services.

The terms of our contracts sometimes limit our ability to pass on price increases. Long-term solid waste collection contracts often contain a formula, generally based on a published price index, that automatically adjusts fees to cover increases in some, but not all, operating costs, or that limit increases to less than 100% of the increase in the applicable price index.

Revenue at landfills is primarily generated by charging tipping fees on a per ton and/or per yard basis to third parties based on the volume disposed and the nature of the waste.

Revenue at transfer stations is primarily generated by charging tipping or disposal fees on a per ton and/or per yard basis. The fees charged to third parties are based primarily on the market, type and volume or weight of the waste accepted, the distance to the disposal facility and the cost of disposal.

Many of our landfill and transfer station customers have entered into one to ten year disposal contracts with us, most of which provide for annual indexed price increases.

Our revenues from E&P waste services are primarily generated through the treatment, recovery and disposal of non-hazardous exploration and production waste from vertical and horizontal drilling, hydraulic fracturing, production and clean-up activity, as well as other services including closed loop collection systems, the transportation of waste to the disposal facility in certain markets and the sale of recovered products. E&P activity varies across market areas that are tied to the natural resource basins in which the drilling activity occurs and reflects the regulatory environment, pricing and disposal alternatives available in any given market.

Our revenues from recycling services are generated by offering residential, commercial, industrial and municipal customers recycling services for a variety of recyclable materials, including compost, cardboard, mixed paper, plastic containers, glass bottles and ferrous and aluminum metals. The Company owns recycling operations and markets collected recyclable materials to third parties for processing before resale. In certain instances, the Company issues recycling rebates to municipal or commercial customers, which can be based on the price it receives upon the sale of recycled commodities, a fixed contractual rate or other measures. The Company also receives rebates when it disposes of recycled commodities at third-party facilities.

Other revenues consist primarily of the sale of gas generated from our MSW landfills and revenues from intermodal services. Intermodal revenue is primarily generated through providing intermodal services for the rail haul movement of cargo and solid waste containers in the Pacific Northwest through a network of intermodal facilities. The fees received for intermodal services are based on negotiated rates and vary depending on volume commitments by the shipper and destination.

No single contract or customer accounted for more than 10% of our total revenues at the consolidated or reportable segment level during the periods presented. The following table disaggregates our revenue by service line for the periods indicated (dollars in thousands of U.S. dollars).

	Years Ended December 31,		
	2018	2017	2016
Commercial	\$ 1,452,831	\$ 1,343,590	\$ 969,619
Residential	1,189,148	1,130,842	874,228
Industrial and construction roll off	768,687	707,015	515,966
Total collection	3,410,666	3,181,447	2,359,813
Landfill	1,063,242	988,092	759,586
Transfer	670,129	589,883	395,824
Recycling	92,634	161,730	92,456
E&P	256,262	203,473	132,286
Intermodal and other	139,896	146,749	106,363
Intercompany	(709,888)	(640,886)	(470,465)
Total	<u>\$ 4,922,941</u>	<u>\$ 4,630,488</u>	<u>\$ 3,375,863</u>

Cost of operations includes labor and benefits, tipping fees paid to third-party disposal facilities, vehicle and equipment maintenance, workers' compensation, vehicle and equipment insurance, insurance and employee group health claims expense, third-party transportation expense, fuel, the cost of materials we purchase for recycling, district and state taxes and host community fees and royalties. Our significant costs of operations in 2018 were labor, third-party disposal and transportation, vehicle and equipment maintenance, taxes and fees, insurance and fuel. We use a number of programs to reduce overall cost of operations, including increasing the use of automated routes to reduce labor and workers' compensation exposure, utilizing comprehensive maintenance and health and safety programs, and increasing the use of transfer stations to further enhance internalization rates. We carry insurance for automobile liability, general liability, employer's liability, environmental liability, cyber liability, employment practices liability and directors' and officers' liability as well as for employee group health claims, property and workers' compensation. If we experience insurance claims or costs above or below our historically evaluated levels, our estimates could be materially affected.

Selling, general and administrative, or SG&A, expense includes management, sales force, clerical and administrative employee compensation and benefits, legal, accounting and other professional services, acquisition expenses, bad debt expense and rent expense for our administrative offices.

Depreciation expense includes depreciation of equipment and fixed assets over their estimated useful lives using the straight-line method. Depletion expense includes depletion of landfill site costs and total future development costs as remaining airspace of the landfill is consumed. Remaining airspace at our landfills includes both permitted and probable expansion airspace. Amortization expense includes the amortization of finite-lived intangible assets, consisting primarily of long-term franchise agreements and contracts, customer lists and non-competition agreements, over their estimated useful lives using the straight-line method. Goodwill and indefinite-lived intangible assets, consisting primarily of certain perpetual rights to provide solid waste collection and transportation services in specified territories, are not amortized.

We capitalize some third-party expenditures related to development projects, such as legal and engineering. We expense all third-party and indirect acquisition costs, including third-party legal and engineering expenses, executive and corporate overhead, public relations and other corporate services, as we incur them. We charge against net income any unamortized capitalized expenditures and advances (net of any portion that we believe we may recover, through sale or otherwise) that may become impaired, such as those that relate to any operation that is permanently shut down and any landfill development project that we believe will not be completed. We routinely evaluate all capitalized costs, and expense those related to projects that we believe are not likely to succeed. For example, if we are unsuccessful in our attempts to obtain or defend permits that we are seeking or have been awarded to operate or expand a landfill, we will no longer generate anticipated income from the landfill and we will be required to expense in a future period up to the carrying value of the landfill or expansion project, less the recoverable value of the property and other amounts recovered.

Results of Operations

The following table sets forth items in our Consolidated Statements of Net Income in thousands of U.S. dollars and as a percentage of revenues for the periods indicated:

	Years Ended December 31,					
	2018	% of Revenues	2017	% of Revenues	2016	% of Revenues
Revenues	\$ 4,922,941	100.0%	\$ 4,630,488	100.0%	\$ 3,375,863	100.0%
Cost of operations	2,865,704	58.2	2,704,775	58.4	1,957,712	58.0
Selling, general and administrative	524,388	10.7	509,638	11.0	474,263	14.0
Depreciation	572,708	11.6	530,187	11.5	393,600	11.7
Amortization of intangibles	107,779	2.2	102,297	2.2	70,312	2.1
Impairments and other operating items	20,118	0.4	156,493	3.4	27,678	0.8
Operating income	832,244	16.9	627,098	13.5	452,298	13.4
Interest expense	(132,104)	(2.7)	(125,297)	(2.7)	(92,709)	(2.7)
Interest income	7,170	0.2	5,173	0.1	602	0.0
Other income, net	1,263	0.0	3,736	0.1	53	0.0
Foreign currency transaction gain (loss)	(1,433)	(0.0)	(2,200)	(0.0)	1,121	0.0
Income tax (provision) benefit	(159,986)	(3.3)	68,910	1.5	(114,044)	(3.4)
Net income	547,154	11.1	577,420	12.5	247,321	7.3
Net loss attributable to noncontrolling interests	(283)	(0.0)	(603)	(0.0)	(781)	(0.0)
Net income attributable to Waste Connections	\$ 546,871	11.1%	\$ 576,817	12.5%	\$ 246,540	7.3%

Years Ended December 31, 2018 and 2017

Revenues. Total revenues increased \$292.4 million, or 6.3%, to \$4.923 billion for the year ended December 31, 2018, from \$4.630 billion for the year ended December 31, 2017.

During the year ended December 31, 2018, incremental revenue from acquisitions closed during, or subsequent to, the year ended December 31, 2017, increased revenues by approximately \$221.5 million.

Operations that were divested in 2018 decreased revenues by approximately \$68.3 million for the year ended December 31, 2018.

During the year ended December 31, 2018, the net increase in prices charged to our customers at our existing operations was \$188.6 million, consisting of \$172.2 million of core price increases and \$16.4 million from surcharges due primarily to an increase in the market price of diesel fuel.

During the year ended December 31, 2018, volume decreases in our existing business decreased solid waste revenues by \$26.7 million as the net impact of lower landfill special waste volumes in certain segments, not renewing certain lower margin municipal contracts and commercial service agreements acquired with the Progressive Waste acquisition and declines in transfer station volumes in our New York City market due to reduced inbound waste from the New York Department of Sanitation exceeded increased collection volumes and increased landfill municipal solid waste volumes in our Western segment and increased roll off volumes and landfill special waste volumes in our Central segment.

E&P revenues at facilities owned and fully-operated during the year ended December 31, 2018 increased by \$52.6 million, due to higher average crude oil and natural gas prices during the current year increasing drilling activity and E&P disposal volumes at the majority of our sites.

An increase in the average Canadian dollar to U.S. dollar currency exchange rate resulted in an increase in revenues of \$0.2 million for the year ended December 31, 2018. The average Canadian dollar to U.S. dollar exchange rates on our Canadian revenues were 0.7714 and 0.7713 in the years ended December 31, 2018 and 2017, respectively.

Revenues from sales of recyclable commodities at facilities owned during the years ended December 31, 2018 and 2017 decreased \$66.3 million, due primarily to decreased prices for old corrugated cardboard and other fiber products resulting from a reduction in overseas demand.

Other revenues decreased by \$9.2 million during the year ended December 31, 2018 due primarily to a decrease in intermodal revenues resulting from customer losses causing a reduction in cargo volume, partially offset by an increase in landfill gas sales at our Canada and Southern segments.

Cost of Operations. Total cost of operations increased \$160.9 million, or 5.9%, to \$2.866 billion for the year ended December 31, 2018, from \$2.705 billion for the year ended December 31, 2017. The increase was primarily the result of \$139.5 million of operating costs from acquisitions closed during, or subsequent to, the year ended December 31, 2017, an increase in operating costs at our existing operations of \$69.5 million, assuming foreign currency parity, and an increase of \$0.2 million resulting from an increase in the average foreign currency exchange rate in effect during the comparable reporting periods, partially offset by a decrease in operating costs of \$48.3 million at operations divested during, or subsequent to, the year ended December 31, 2017.

The increase in operating costs at our existing operations of \$69.5 million for the year ended December 31, 2018, assuming foreign currency parity, was comprised of an increase in taxes on revenues of \$27.5 million due primarily to higher tax rates under our new operating permit at Chiquita Canyon Landfill and increased revenues in our E&P and solid waste markets, an increase in labor expenses of \$25.5 million due primarily to employee pay rate increases, an increase in diesel fuel expense of \$12.3 million due to increases in the market price of diesel fuel, an increase in third-party trucking and transportation expenses of \$9.6 million due primarily to higher internalized disposal of collected waste volumes at our Eastern segment and increased rates charged by third parties to provide trucking and transportation services for all of our segments, increased leachate disposal expenses of \$6.3 million due to increased precipitation generating higher leachate volumes in our Eastern segment, an increase in subcontracted operating expenses of \$5.3 million due primarily to subcontracting certain operating activities at our E&P segment and a landfill operating contract, an increase in property taxes of \$2.8 million due primarily to the reassessment of certain property acquired in the Progressive Waste acquisition and the recognition of tax credits in the prior year that did not recur in the current year, an increase in employee benefits expenses of \$2.4 million due primarily to transferring retained Progressive Waste employees onto the Waste Connections benefits program, which provides increased benefits to the employees, an increase in cell processing expenses at our E&P segment of \$1.8 million due primarily to increased disposal volumes and \$0.2 million of other net expense increases, partially offset by a \$7.8 million decrease in third party disposal expenses due to improved internalization of waste collected in certain markets acquired in the Progressive Waste and Groot acquisitions, a decrease in expenses associated with the purchase of recyclable commodities of \$5.7 million due to decreased recyclable commodity values, a decrease in insurance premium expense of \$3.9 million due primarily to transferring the operating locations acquired in the acquisition of Groot onto our insurance program and changes to the insurance program at our Canada segment, a decrease of \$3.5 million from nonrecurring prior year incremental labor and repair expenses resulting from hurricanes impacting our Texas, Louisiana and Florida operations in 2017 and the recognition during the year ended December 31, 2018 of \$3.3 million in retroactive tax credits associated with 2017 purchases of compressed natural gas fuel.

Cost of operations as a percentage of revenues decreased 0.2 percentage points to 58.2% for the year ended December 31, 2018, from 58.4% for the year ended December 31, 2017. The components of the decrease consisted of a 0.5 percentage point decrease from increased internalization of collected waste volumes and a 0.2 percentage point decrease from lower expenses associated with the purchase of recyclable commodities, partially offset by a 0.5 percentage point increase from higher taxes on revenues.

SG&A. SG&A expenses increased \$14.8 million, or 2.9%, to \$524.4 million for the year ended December 31, 2018, from \$509.6 million for the year ended December 31, 2017. The increase was comprised of \$15.3 million of additional SG&A expenses from operating locations at acquisitions closed during, or subsequent to, the year ended December 31, 2017 and a \$4.7 million increase in SG&A expenses at our existing operations, partially offset by a decrease of \$5.2 million consisting of SG&A expenses from operations divested during, or subsequent to, the year ended December 31, 2017.

The increase in SG&A expenses at our existing operations of \$4.7 million for the year ended December 31, 2018 was comprised of an increase of \$16.6 million in professional fees expense resulting primarily from higher legal expenses, an increase in equity-based compensation expenses of \$6.2 million associated with our annual recurring grant of restricted share units to our personnel, an increase of \$5.0 million in equity-based compensation expenses associated with adjusting common shares of Waste Connections, Inc. held in our deferred compensation plan by certain key executives to fair value as a result of the shares being exchanged for other investment options and an increase in direct acquisition expenses of \$2.9 million due to increased acquisition activity, partially offset by a decrease of \$10.7 million in integration-related professional fees and severance-related expenses incurred in the prior year period for Progressive Waste personnel who were not permanently retained as employees of the Company following the close of the Progressive Waste acquisition, a decrease in share-based compensation expenses of \$9.3 million due primarily to less share price volatility and fewer outstanding shares in the current period for equity awards accounted for as liabilities that were granted to employees of Progressive Waste prior to June 1, 2016 which are subject to valuation adjustments each period based on changes in fair value, a decrease in deferred compensation expenses of \$4.3 million as a result of decreases in the market value of investments to which employee deferred compensation liability balances are tracked, a decrease in accrued recurring cash incentive compensation expense to our management of \$1.1 million due to decreased solid waste volumes and reduced revenue for recyclable commodities resulting in a lower achievement of interim financial targets during the year ended December 31, 2018 and \$0.6 million of other net expense decreases.

SG&A expenses as a percentage of revenues decreased 0.3 percentage points to 10.7% for the year ended December 31, 2018, from 11.0% for the year ended December 31, 2017. The decrease as a percentage of revenues consisted of a 0.2 percentage point decrease due to reduced share-based compensation expense from the continuation of awards granted to Progressive Waste employees prior to the completion of the Progressive Waste acquisition, a 0.2 percentage point decrease from integration-related professional fees and severance-related expenses resulting from the acquisition of Progressive Waste, a 0.1 percentage point decrease due to reductions in employee deferred compensation liability obligations, a 0.1 percentage point decrease due to reduced accrued recurring cash incentive compensation expense to our management and a 0.1 percentage point decrease in all other net changes, partially offset by a 0.3 percentage point increase from higher professional fees expenses and a 0.1 percentage point increase from equity-based compensation expenses associated with the exchange of shares held in our deferred compensation plan.

Depreciation. Depreciation expense increased \$42.5 million, or 8.0%, to \$572.7 million for the year ended December 31, 2018, from \$530.2 million for the year ended December 31, 2017. The increase was primarily the result of additional depreciation and depletion expense of \$28.2 million from acquisitions closed during, or subsequent to, the year ended December 31, 2017 and an increase in depreciation expense of \$17.7 million associated with additions to our fleet and equipment purchased to support our existing operations, partially offset by a decrease of \$2.9 million resulting from the disposal of property and equipment associated with operations divested during, or subsequent to, the year ended December 31, 2017 and a decrease in depletion expense of \$0.5 million at our existing landfills due primarily to declines in special waste volumes.

Depreciation expense as a percentage of revenues increased 0.1 percentage points to 11.6% for the year ended December 31, 2018, from 11.5% for the year ended December 31, 2017. The increase as a percentage of revenues was due primarily to the impact of depreciation expense associated with acquisitions and additions to our fleet and equipment purchased to support our existing operations.

Amortization of Intangibles. Amortization of intangibles expense increased \$5.5 million, or 5.4% to \$107.8 million for the year ended December 31, 2018, from \$102.3 million for the year ended December 31, 2017. The increase was the result of \$10.7 million from intangible assets acquired in acquisitions closed during, or subsequent to, the year ended December 31, 2017, partially offset by a decrease of \$4.8 million from certain intangible assets becoming fully amortized subsequent to December 31, 2017 and a decrease of \$0.4 million resulting from the disposal of intangible assets with operations divested during, or subsequent to, the year ended December 31, 2017.

Amortization expense as a percentage of revenues was 2.2% for the years ended December 31, 2018 and 2017.

Impairments and Other Operating Items. Impairments and other operating items decreased \$136.4 million, to net losses totaling \$20.1 million for the year ended December 31, 2018, from net losses totaling \$156.5 million for the year ended December 31, 2017.

The net losses of \$20.1 million recorded during the year ended December 31, 2018 consisted of an \$11.0 million charge recorded for the potential settlement of a final judgment obtained against Progressive Waste Solutions of FL, Inc., now known as Waste Connections of Florida, Inc., \$8.5 million of losses on trucks and equipment that were scrapped, disposed of through sales or disposed of as a result of being damaged in operations, \$3.8 million of charges to write off the carrying cost of certain contracts that were not expected to be renewed prior to their original estimated termination date and \$2.8 million of other net charges, partially offset by the reversal of \$6.0 million of expenses recognized in prior periods to adjust the carrying cost of assets held for disposal to fair market value due to modifications to our divestiture plan and changes in the fair market value of the divested operations.

The net losses of \$156.5 million recorded during the year ended December 31, 2017 consisted of a goodwill impairment charge of \$77.3 million at our E&P segment resulting from our early adoption of a new accounting standard on January 1, 2017 which required the recognition of goodwill impairment by the amount which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill, \$34.5 million of net expense charges to adjust the carrying cost of assets held for disposal to fair market value, an \$18.0 million expense charge to increase the fair value of amounts payable under liability-classified contingent consideration arrangements from acquisitions closed in periods prior to 2016, an \$11.0 million charge associated with the impairment of costs capitalized in prior periods associated with a project to develop a new landfill in our Central segment that we are no longer pursuing, \$11.0 million of charges to terminate or write off the carrying cost of certain contracts, primarily acquired from the Progressive Waste acquisition, that were not, or are not expected to be, renewed prior to their original estimated termination date and \$7.8 million of losses on property and equipment that were disposed of through sales or as a result of being damaged in operations, partially offset by net gains of \$3.1 million from the divestiture of operations not classified as held for disposal in prior periods.

Operating Income. Operating income increased \$205.1 million, or 32.7%, to \$832.2 million for the year ended December 31, 2018, from \$627.1 million for the year ended December 31, 2017. The increase was primarily attributable to operating income generated from acquisitions, gross margins recognized on E&P volume growth and a decrease in impairments and other operating charges.

Operating income as a percentage of revenues increased 3.4 percentage points to 16.9% for the year ended December 31, 2018, from 13.5% for the year ended December 31, 2017. The increase as a percentage of revenues was comprised of a 3.0 percentage point decrease in impairments and other operating items, a 0.2 percentage point decrease in cost of operations and a 0.3 percentage point decrease in SG&A expense, partially offset by a 0.1 percentage point increase in depreciation expense.

Interest Expense. Interest expense increased \$6.8 million, or 5.4%, to \$132.1 million for the year ended December 31, 2018, from \$125.3 million for the year ended December 31, 2017. The increase was primarily attributable to an increase of \$6.6 million due to higher interest rates on outstanding borrowings under our Credit Agreement, an increase of \$4.2 million from the April 2017 issuance of our 2017A Senior Notes and an increase of \$2.6 million from the November 2018 issuance of our 2028 Senior Notes, partially offset by a decrease of \$3.7 million due to a decrease in the average borrowings outstanding under our Credit Agreement, a decrease of \$1.5 million from the redemption of our 2018 Senior Notes using proceeds from our Credit Agreement and \$1.4 million of other net decreases.

Interest Income. Interest income increased \$2.0 million, to \$7.2 million for the year ended December 31, 2018, from \$5.2 million for the year ended December 31, 2017. The increase was primarily attributable to higher reinvestment rates in the current period, partially offset by lower average cash balances.

Other Income. Other income decreased \$2.4 million, to \$1.3 million for the year ended December 31, 2018, from \$3.7 million for the year ended December 31, 2017. The decrease was due primarily to a \$4.5 million decrease in income earned on investments purchased to fund our employee deferred compensation obligations and \$0.2 million of other net losses, partially offset by \$2.3 million of current year adjustments to reduce the balances of certain accrued liabilities acquired in prior year acquisitions.

Foreign currency transaction gain (loss). Foreign currency transaction gain (loss) decreased \$0.8 million to a loss of \$1.4 million for the year ended December 31, 2018, from a loss of \$2.2 million for the year ended December 31, 2017. The decrease was attributable to changes in the average foreign currency exchange rate in effect during the comparable reporting periods impacting our third party debt denominated in Canadian dollars and our inter-entity financing arrangements.

Income Tax (Provision) Benefit. Income taxes increased \$228.9 million, to an expense total of \$160.0 million for the year ended December 31, 2018, from a benefit total of \$68.9 million for the year ended December 31, 2017. Our effective tax expense rate for the year ended December 31, 2018 was 22.6%. Our effective tax benefit rate for the year ended December 31, 2017 was 13.6%.

The income tax provision for the year ended December 31, 2018 included a \$6.4 million expense primarily associated with refinements to the estimates, as provided by Staff Accounting Bulletin No. 118, of the impact of a portion of the Company's U.S. earnings no longer permanently reinvested in conjunction with the Tax Act. Additionally, the income tax provision for the year ended December 31, 2018 included a \$5.6 million expense associated with the restructuring of our internal refinancing in conjunction with the Tax Act, as well as a \$3.1 million benefit related to a reduction in our deferred income tax liabilities resulting from state legislation enacted in the current year and changes in our geographical apportionment due to acquisition activity. Additionally, the income tax provision for the year ended December 31, 2018 included a benefit of \$5.0 million from share-based payment awards being recognized in the income statement when settled.

During the year ended December 31, 2017, we recorded a \$269.8 million income tax benefit primarily resulting from the reduction to the corporate income tax rate due to the enactment of the Tax Act. Additionally, we recorded income tax expense of \$62.4 million during the year ended December 31, 2017 due to a portion of our U.S. earnings no longer permanently reinvested. Our adoption of a new accounting standard in January 2017, which requires the excess tax benefits associated with equity-based compensation arrangements to be recognized in the income statement when the awards are settled, whereas previously the tax benefits in excess of compensation cost were recorded in equity, resulted in recording a \$6.9 million income tax benefit during the year ended December 31, 2017. Further, the impairment of goodwill within our E&P segment and disposal of goodwill from the divestitures of certain operations resulted in the write off of goodwill that was not deductible for tax purposes totaling \$30.8 million during the year ended December 31, 2017, increasing our income tax expense by \$11.8 million. During the year ended December 31, 2017, income tax expense was increased by \$3.8 million primarily as a result of an increase in the state income tax rate in Illinois.

Our effective tax rate is dependent upon the proportion of pre-tax income among the jurisdictions where we do business. As such, our effective tax rate will be subject to some variability depending upon the proportional contribution of pre-tax income across jurisdictions in any period.

Years Ended December 31, 2017 and 2016

Revenues. Total revenues increased \$1.255 billion, or 37.2%, to \$4.630 billion for the year ended December 31, 2017, from \$3.376 billion for the year ended December 31, 2016.

During the year ended December 31, 2017, incremental revenue from acquisitions closed during, or subsequent to, the year ended December 31, 2016, increased revenues by approximately \$1.059 billion, of which the Progressive Waste acquisition contributed \$826.9 million.

Operations that were divested in 2017 decreased revenues by approximately \$55.8 million for the year ended December 31, 2017.

During the year ended December 31, 2017, the net increase in prices charged to our customers at our existing operations was \$100.0 million, consisting of \$98.2 million of core price increases and \$1.8 million from fuel, materials and environmental surcharges due primarily to an increase in the market price of diesel fuel.

During the year ended December 31, 2017, volume increases in our existing business increased solid waste revenues by \$35.7 million from increases in roll off collection, transfer station volumes and landfill volumes resulting from increased construction and general economic activity in our markets, partially offset by declines in residential volumes resulting from certain contracts acquired with the Progressive Waste acquisition that were terminated subsequent to June 30, 2016 and declines in commercial volumes due to intentional losses of certain low margin commercial collection customers. E&P revenues at facilities owned and fully-operated during the year ended December 31, 2017 increased by \$71.8 million, due to a partial recovery in crude oil prices increasing drilling activity and E&P disposal volumes at the majority of our sites, with the most significant increases in the Permian Basin and Louisiana.

An increase in the average Canadian dollar to U.S. dollar currency exchange rate resulted in an increase in revenues of \$14.2 million for the year ended December 31, 2017. Our Canada segment was formed in conjunction with the Progressive Waste acquisition on June 1, 2016; therefore, Canadian dollar to U.S. dollar exchange rate changes did not impact our revenues or results of operations prior to June 1, 2016. The average Canadian dollar to U.S. dollar exchange rates were 0.7868 in the seven-month period from June to December 2017 and 0.7605 in the seven-month period from June to December 2016.

Revenues from sales of recyclable commodities at facilities owned during the year ended December 31, 2017 and 2016 increased \$19.5 million, due primarily to the net impact of increased prices for recyclable commodities realized from January to August of 2017 overcoming the net impact of decreased prices for recyclable commodities realized from September to December of 2017. In September 2017, prices for recyclable commodities, primarily old corrugated cardboard, began to decline due to a reduction in overseas demand.

Other revenues increased by \$10.4 million during the year ended December 31, 2017, due primarily to an increase in landfill gas sales at our Canada segment of \$9.5 million during the year ended December 31, 2017.

Cost of Operations. Total cost of operations increased \$747.1 million, or 38.2%, to \$2.705 billion for the year ended December 31, 2017, from \$1.958 billion for the year ended December 31, 2016. The increase was primarily the result of \$503.7 million of operating costs from the Progressive Waste acquisition, \$152.3 million of additional operating costs from all other acquisitions closed during, or subsequent to, the year ended December 31, 2016, an increase in operating costs at our existing operations of \$125.3 million, assuming foreign currency parity, and an increase of \$7.5 million resulting from an increase in the average foreign currency exchange rate in effect during the comparable reporting periods, partially offset by a decrease in operating costs of \$41.7 million at operations divested in 2017.

The increase in operating costs at our existing operations of \$125.3 million for the year ended December 31, 2017, assuming foreign currency parity, was comprised of an increase in labor expenses of \$26.0 million due primarily to employee pay rate increases, an increase in taxes on revenues of \$22.5 million due to increased revenues in our solid waste markets, an increase in truck, container, equipment and facility maintenance and repair expenses of \$21.2 million due to variability in the timing and severity of major repairs, an increase in third-party trucking and transportation expenses of \$19.8 million due to increased transfer station and landfill volumes that require us to transport the waste to our disposal sites, an increase in fuel expense of \$10.3 million due to increases in the market price of diesel fuel, an increase in employee benefits expenses of \$7.7 million due to increased severity of medical claims, an increase in expenses associated with the purchase of recyclable commodities of \$4.8 million due to increased recyclable commodity values, an increase in expenses for auto and workers' compensation claims of \$4.0 million due to actuarial driven average claim rate increases resulting from the inclusion of historical Progressive Waste claim experience into rates for current year claims, an increase of \$3.6 million from incremental labor and repair expenses resulting from hurricanes impacting our Texas, Louisiana and Florida operations, an increase in subcontracted operating expenses of \$2.9 million due primarily to subcontracting certain operations in our E&P segment and increased subcontractor support for large solid waste projects, an increase in equipment rental expenses of \$1.5 million primarily at our E&P segment to comply with regulatory requirements and \$1.0 million of other net expense increases.

Cost of operations as a percentage of revenues increased 0.4 percentage points to 58.4% for the year ended December 31, 2017, from 58.0% for the year ended December 31, 2016. The increase as a percentage of revenues consisted of a 0.9 percentage point increase from acquisitions closed during, or subsequent to, the year ended December 31, 2016 having operating margins lower than our company average, a 0.3 percentage point increase from higher taxes on revenues, a 0.2 percentage point increase from higher third party trucking and transportation expenses and a 0.2 percentage point increase from all other net changes, partially offset by a 0.6 percentage point decrease from increased internalization of collected waste volumes, primarily in our New York markets and a 0.6 percentage point decrease from leveraging existing personnel to support increases in solid waste and E&P volumes and the benefit of improved commodity prices.

SG&A. SG&A expenses increased \$35.3 million, or 7.5%, to \$509.6 million for the year ended December 31, 2017, from \$474.3 million for the year ended December 31, 2016. The increase was comprised of \$61.2 million of SG&A expenses from operating locations acquired in the Progressive Waste acquisition, \$16.9 million of additional SG&A expenses from operating locations at all other acquisitions closed during, or subsequent to, the year ended December 31, 2016 and an increase of \$1.5 million resulting from an increase in the average foreign currency exchange rate in effect during the comparable reporting periods, partially offset by a \$39.9 million decrease in SG&A expenses at our existing operations, assuming foreign currency parity, and a decrease of \$4.4 million consisting of SG&A expenses from operations divested in 2017.

The decrease in SG&A expenses at our existing operations of \$39.9 million for the year ended December 31, 2017, assuming foreign currency parity, was comprised of a decrease in direct acquisition costs of \$27.7 million resulting from amounts incurred in the prior year period related to the Progressive Waste acquisition, a decrease of \$21.3 million in integration-related professional fees and severance-related expenses incurred in the prior year period for Progressive Waste personnel who were not permanently retained as employees of New Waste Connections following the close of the Progressive Waste acquisition, a decrease of \$14.5 million from New Waste Connections paying excise taxes in the prior year period on the unvested or vested and undistributed equity-compensation holdings of our corporate officers and members of our Board of Directors resulting from the Progressive Waste acquisition, a decrease of \$11.8 million resulting from the nonrecurring prior year accrual of incentive compensation expenses to certain of our executive officers and key employees related to the achievement of defined synergy goals realized by New Waste Connections from the Progressive Waste acquisition, a decrease in share-based compensation expenses of \$8.8 million related to awards granted to employees of Progressive Waste prior to June 1, 2016 for which vesting was accelerated in the prior year period due to plan provisions regarding a change in control followed by termination of employment and resulting from less outstanding shares in the current period which are subject to valuation adjustments each period based on changes in fair value and a decrease in equity-based compensation expenses of \$2.3 million resulting from the acceleration of vesting in the prior year period of performance share units granted to Old Waste Connections' management in 2014 and 2015, partially offset by an increase in payroll expenses of \$10.5 million due to increased corporate headcount to support the operations of Progressive Waste and annual compensation increases, an increase in accrued recurring cash incentive compensation expense to our management of \$7.5 million due to the achievement of interim financial targets during the year ended December 31, 2017 and the addition of accrued cash incentive compensation expense for the retained Progressive Waste employees, an increase in corporate travel, meetings and training expenses of \$5.4 million resulting from the integration of employees of Progressive Waste into New Waste Connections, an increase in equity-based compensation expenses of \$5.2 million associated with our annual recurring grant of restricted share units to our personnel, an increase in expenses for uncollectible accounts receivable of \$3.9 million due primarily to the collection in 2016 of several large receivable balances that were written off as a doubtful account in a prior year and a contract dispute with an individual customer in the current year, an increase in employee benefits expenses of \$3.1 million due to increased severity of medical claims, an increase in donations and community support expenses of \$2.9 million primarily associated with financial support we have provided to individuals that were impacted by hurricanes in 2017, an increase in software license fees of \$2.7 million to support our new payroll processing application and computer applications acquired in the Progressive Waste acquisition, an increase in deferred compensation expense of \$2.1 million resulting from deferred compensation liabilities to employees increasing as a result of increases in the market value of investments to which employee deferred compensation balances are tracked, an increase in accounting and information technology professional fee expenses of \$1.8 million due to increased support required as a result of growth from the Progressive Waste acquisition and an increase in employee relocation expenses of \$1.4 million associated with corporate personnel added to support the additional administrative oversight resulting from the Progressive Waste acquisition.

SG&A expenses as a percentage of revenues decreased 3.0 percentage points to 11.0% for the year ended December 31, 2017, from 14.0% for the year ended December 31, 2016. The decrease as a percentage of revenues consisted of a 0.9 percentage point decrease from the decrease in direct acquisition costs, a 0.7 percentage point decrease from integration-related professional fees and severance-related expenses related to Progressive Waste, a 0.6 percentage point decrease from the net impact of SG&A expenses from operating locations acquired in the Progressive Waste acquisition and all other acquisitions closed during, or subsequent to, the year ended December 31, 2016, a 0.4 percentage point decrease from excise taxes paid in the prior year period, a 0.4 percentage point decrease from the nonrecurring prior year accrual of incentive compensation expenses to certain of our executive officers and key employees related to the achievement of defined synergy goals realized by New Waste Connections from the Progressive Waste acquisition and a 0.3 percentage point decrease from share-based compensation expenses associated with awards granted to employees of Progressive Waste prior to June 1, 2016, partially offset by a net 0.3 percentage point increase from other changes.

Depreciation. Depreciation expense increased \$136.6 million, or 34.7%, to \$530.2 million for the year ended December 31, 2017, from \$393.6 million for the year ended December 31, 2016. The increase was primarily the result of additional depreciation and depletion expense of \$93.6 million from assets acquired in the Progressive Waste acquisition, additional depreciation and depletion expense of \$18.8 million from all other acquisitions closed during, or subsequent to, the year ended December 31, 2016, an increase in depreciation expense of \$13.4 million, assuming foreign currency parity, associated with additions to our fleet and equipment purchased to support our existing operations, an increase in depletion expense of \$14.1 million, assuming foreign currency parity, at our existing landfills due primarily to an increase in volumes and an increase of \$1.7 million resulting from an increase in the average foreign currency exchange rate in effect during the comparable reporting periods, partially offset by a decrease of \$5.0 million resulting from the disposal of property and equipment associated with operations divested in 2017.

Depreciation expense as a percentage of revenues decreased 0.2 percentage points to 11.5% for the year ended December 31, 2017, from 11.7% for the year ended December 31, 2016. The decrease as a percentage of revenues was due primarily to the impact of leveraging existing property and equipment to support increases in our E&P revenue and revenue from the sale of recyclable commodities.

Amortization of Intangibles. Amortization of intangibles expense increased \$32.0 million, or 45.5% to \$102.3 million for the year ended December 31, 2017, from \$70.3 million for the year ended December 31, 2016. The increase was the result of \$27.7 million recorded on contracts, customer lists and transfer station permits acquired in the Progressive Waste acquisition, a net increase of \$8.8 million from other acquisitions closed in 2016 and 2017 and an increase of \$0.6 million resulting from an increase in the average foreign currency exchange rate in effect during the comparable reporting periods, partially offset by a decrease of \$3.8 million from certain intangible assets becoming fully amortized subsequent to December 31, 2016 and adjustments to the fair market values of intangible assets acquired in the Progressive Waste acquisition, which were recorded in the fourth quarter of 2016, resulting in a reduction to amortization expense subsequent to December 31, 2016 and a decrease of \$1.3 million resulting from the disposal of intangible assets with operations divested in 2017.

Amortization expense as a percentage of revenues increased 0.1 percentage points to 2.2% for the year ended December 31, 2017, from 2.1% for the year ended December 31, 2016. The increase as a percentage of revenues was the result of the net impact of the aforementioned intangible assets acquired in the Progressive Waste acquisition and other acquisitions closed subsequent to December 31, 2016.

Impairments and Other Operating Items. Impairments and other operating items increased \$128.8 million, to net losses totaling \$156.5 million for the year ended December 31, 2017, from net losses totaling \$27.7 million for the year ended December 31, 2016.

The net losses of \$156.5 million recorded during the year ended December 31, 2017 consisted of a goodwill impairment charge of \$77.3 million at our E&P segment resulting from our early adoption of a new accounting standard on January 1, 2017 which required the recognition of goodwill impairment by the amount which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill, \$34.5 million of net expense charges to adjust the carrying cost of assets held for disposal to fair market value, an \$18.0 million expense charge to increase the fair value of amounts payable under liability-classified contingent consideration arrangements from acquisitions closed in periods prior to 2016, an \$11.0 million charge associated with the impairment of costs capitalized in prior periods associated with a project to develop a new landfill in our Central segment that we are no longer pursuing, \$11.0 million of charges to terminate or write off the carrying cost of certain contracts, primarily acquired from the Progressive Waste acquisition, that were not, or are not expected to be, renewed prior to their original estimated termination date and \$7.8 million of losses on property and equipment that were disposed of through sales or as a result of being damaged in operations, partially offset by net gains of \$3.1 million from the divestiture of operations not classified as held for disposal in prior periods.

The net losses of \$27.7 million recorded during the year ended December 31, 2016 consisted of a \$15.0 million charge to adjust the carrying cost of assets held for disposal to fair market value, a \$4.6 million charge to terminate an operating lease for our corporate aircraft, \$3.3 million of losses on trucks and equipment that were disposed of through sales or as a result of being damaged in operations, impairment charges totaling \$2.7 million related to four operating locations in our E&P segment which were permanently closed in 2016, a \$2.5 million charge to write off the carrying cost of a tradename acquired from the Progressive Waste acquisition that will not provide future financial benefit, a \$2.1 million charge to write off the carrying cost of certain contracts acquired from the Progressive Waste acquisition that were not renewed prior to their original estimated termination date and \$1.1 million of other net charges, partially offset by a gain of \$2.4 million resulting from the decrease to the fair value of an amount payable under a liability-classified contingent consideration arrangement from a prior year acquisition and a gain of \$1.2 million from the favorable settlement of a legal matter.

Operating Income (Loss). Operating income (loss) increased \$174.8 million, or 38.6%, to income of \$627.1 million for the year ended December 31, 2017, from income of \$452.3 million for the year ended December 31, 2016. The increase was primarily attributable to a full year of operating income contributed from the June 2016 Progressive Waste acquisition, operating income from other acquisitions closed in 2017 and a decrease in certain SG&A expenses for direct acquisition costs, employee severance, excise taxes and share-based compensation resulting from the Progressive Waste acquisition, partially offset by an increase in impairments and other operating items resulting primarily from a goodwill impairment charge at our E&P segment, charges to adjust the carrying cost of assets held for disposal to fair market value and charges to increase the fair value of amounts payable under liability-classified contingent consideration arrangements.

Operating income (loss) as a percentage of revenues increased 0.1 percentage points to income of 13.5% for the year ended December 31, 2017, from income of 13.4% for the year ended December 31, 2016. The increase as a percentage of revenues was comprised of a 3.0 percentage point decrease in SG&A expense and a 0.2 percentage point decrease in depreciation expense, partially offset by a 2.6 percentage point increase in impairments and other operating items, a 0.4 percentage point increase in cost of operations and a 0.1 percentage point increase in amortization expense.

Interest Expense. Interest expense increased \$32.6 million, or 35.2%, to \$125.3 million for the year ended December 31, 2017, from \$92.7 million for the year ended December 31, 2016. The increase was primarily attributable to an increase of \$9.4 million from the April 2017 issuance of our 2017A Senior Notes, an increase of \$8.8 million from the June 2016 issuance of our New 2021 Senior Notes, 2023 Senior Notes and 2026 Senior Notes, an increase of \$8.4 million due to higher interest rates on outstanding borrowings under our Credit Agreement, an increase of \$5.2 million due to an increase in the average borrowings outstanding under our Credit Agreement, a combined increase in fees associated with our Credit Agreement of \$1.8 million due to increases in outstanding letters of credit and commitment fees on unused borrowings and \$0.9 million of other net increases, partially offset by a decrease of \$1.1 million resulting from a \$175 million principal interest rate swap agreement expiring in February 2017 and being replaced with two new interest rate swap agreements, totaling \$175 million, at a lower fixed interest rate and a decrease of \$0.8 million for the redemption of our 2016 Notes using proceeds from the 2015 Old Waste Connections Credit Agreement which had a lower interest rate relative to the fixed interest rate in effect when the 2016 Notes were outstanding.

Interest Income. Interest income increased \$4.6 million, to \$5.2 million for the year ended December 31, 2017, from \$0.6 million for the year ended December 31, 2016. The increase was attributable to higher average outstanding cash balances during the year ended December 31, 2017, as compared to the cash balances on hand during the comparable prior year period, and higher reinvestment rates in the current period.

Other Income (Expense), Net. Other income (expense), net, increased \$3.6 million to an income total of \$3.7 million for the year ended December 31, 2017, from an income total of \$0.1 million for the year ended December 31, 2016. The increase was primarily attributable to the non recurrence of a prior year charge of \$1.4 million resulting from the write off of unamortized debt issuance costs, \$1.0 million from the receipt of insurance proceeds in excess of the carrying value of certain property and equipment damaged in accidents and an increase of \$1.8 million of income from investments purchased to fund our employee deferred compensation obligations, partially offset by \$0.6 million of additional other net expenses.

Foreign currency transaction gain (loss). Foreign currency transaction gain (loss) increased \$3.3 million to a loss of \$2.2 million for the year ended December 31, 2017, from a gain of \$1.1 million for the year ended December 31, 2016. The increase was attributable to changes in the average foreign currency exchange rate in effect during the comparable reporting periods impacting the reported value of certain debt denominated in Canadian dollars. Decreases in the average foreign currency exchange rates from June 2016 to December 2016 reduced the reported value of our debt denominated in Canadian dollars and resulted in the recognition of foreign currency transaction gains during the year ended December 31, 2016, whereas increases in the average foreign currency exchange rates in 2017 increased the reported value of our debt denominated in Canadian dollars and resulted in the recognition of foreign currency transaction losses during the year ended December 31, 2017.

Income Tax (Provision) Benefit. Income taxes decreased \$182.9 million, to a benefit total of \$68.9 million for the year ended December 31, 2017, from an expense total of \$114.0 million for the year ended December 31, 2016.

Our effective tax benefit rate for the year ended December 31, 2017 was 13.6%. During the year ended December 31, 2017, we recorded a \$269.8 million income tax benefit primarily resulting from the reduction to the corporate income tax rate due to the enactment of the Tax Act. Additionally, we recorded income tax expense of \$62.4 million during the year ended December 31, 2017 due to a portion of our U.S. earnings no longer permanently reinvested. Our adoption of a new accounting standard in January 2017, which requires the excess tax benefits associated with equity-based compensation arrangements to be recognized in the income statement when the awards are settled, whereas previously the tax benefits in excess of compensation cost were recorded in equity, resulted in recording a \$6.9 million income tax benefit during the year ended December 31, 2017. Further, the impairment of goodwill within our E&P segment and disposal of goodwill from the divestitures of certain operations resulted in the write off of goodwill that was not deductible for tax purposes totaling \$30.8 million during the year ended December 31, 2017, increasing our income tax expense by \$11.8 million. During the year ended December 31, 2017, income tax expense was increased by \$3.8 million primarily as a result of an increase in the state income tax rate in Illinois.

Our effective tax expense rate for the year ended December 31, 2016 was 31.6%. Our effective tax expense rate was reduced as a result of the impact of the Progressive Waste acquisition, which resulted in changes to the jurisdictions where we do business, including some jurisdictions with tax rates less than the U.S. federal statutory rate, partially offset by non-deductible expenses incurred in connection with the Progressive Waste acquisition.

Segment Reporting

Our Chief Operating Decision Maker evaluates operating segment profitability and determines resource allocations based on several factors, of which the primary financial measure is segment EBITDA. We define segment EBITDA as earnings before interest, taxes, depreciation, amortization, impairments and other operating items, other income (expense) and foreign currency transaction gain (loss). Segment EBITDA is not a measure of operating income, operating performance or liquidity under GAAP and may not be comparable to similarly titled measures reported by other companies. Our management uses segment EBITDA in the evaluation of segment operating performance as it is a profit measure that is generally within the control of the operating segments.

We manage our operations through five geographic operating segments and our E&P segment, which includes the majority of our E&P waste treatment and disposal operations. Our five geographic operating segments and our E&P segment comprise our reportable segments. Each operating segment is responsible for managing several vertically integrated operations, which are comprised of districts. In the third quarter of 2017, we moved a district from our Eastern segment to our Canada segment as a significant amount of its revenues are received from Canadian-based customers. The segment information presented herein reflects the realignment of this district.

Under the current orientation at December 31, 2018, our Southern segment services customers located in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, southern Oklahoma, western Tennessee and Texas; our Eastern segment services customers located in Illinois, Iowa, Kentucky, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, eastern Tennessee, Vermont, Virginia and Wisconsin; our Western segment services customers located in Alaska, California, Idaho, Montana, Nevada, Oregon, Washington and western Wyoming; our Canada segment services customers located in the state of Michigan and in the provinces of Alberta, British Columbia, Manitoba, Ontario, Québec and Saskatchewan; and our Central segment services customers located in Arizona, Colorado, Kansas, Minnesota, Missouri, Nebraska, New Mexico, Oklahoma, South Dakota, western Texas, Utah and eastern Wyoming. The E&P segment services E&P customers located in Arkansas, Louisiana, New Mexico, North Dakota, Oklahoma, Texas, Wyoming and along the Gulf of Mexico.

Revenues, net of intercompany eliminations, for our reportable segments are shown in the following table in thousands of U.S. dollars and as a percentage of total revenues for the periods indicated:

	Years Ended December 31,					
	2018	% of Revenues	2017	% of Revenues	2016	% of Revenues
Southern	\$ 1,122,548	22.8%	\$ 1,115,864	24.1%	\$ 713,381	21.1%
Eastern	1,090,019	22.1	959,214	20.7	626,644	18.6
Western	1,043,928	21.2	1,007,230	21.8	935,319	27.7
Canada	727,213	14.8	728,777	15.7	417,869	12.4
Central	693,525	14.1	628,167	13.6	561,541	16.6
E&P	245,708	5.0	191,236	4.1	121,109	3.6
	<u>\$ 4,922,941</u>	<u>100.0%</u>	<u>\$ 4,630,488</u>	<u>100.0%</u>	<u>\$ 3,375,863</u>	<u>100.0%</u>

Segment EBITDA for our reportable segments is shown in the following table in thousands of U.S. dollars and as a percentage of segment revenues for the periods indicated:

	Years Ended December 31,					
	2018	% of Revenues	2017	% of Revenues	2016	% of Revenues
Western	\$ 318,401	30.5%	\$ 323,648	32.1%	\$ 315,708	33.8%
Eastern	299,162	27.4%	273,942	28.6%	189,220	30.2%
Southern	276,791	24.7%	258,560	23.2%	163,320	22.9%
Canada	261,233	35.9%	264,693	36.3%	153,446	36.7%
Central	255,648	36.9%	237,136	37.8%	208,930	37.2%
E&P	129,825	52.8%	90,597	47.4%	32,479	26.8%
Corporate ^(a)	(8,211)	-	(32,501)	-	(119,215)	-
	<u>\$ 1,532,849</u>	<u>31.1%</u>	<u>\$ 1,416,075</u>	<u>30.6%</u>	<u>\$ 943,888</u>	<u>28.0%</u>

(a) Corporate functions include accounting, legal, tax, treasury, information technology, risk management, human resources, training and other administrative functions. Amounts reflected are net of allocations to the six operating segments. For the year ended December 31, 2016, amounts also include costs associated with the Progressive Waste acquisition, including direct acquisition expenses, severance-related expenses, excise taxes, share-based compensation expenses associated with Progressive Waste share-based grants existing at June 1, 2016 and incentive compensation expenses based on the achievement of acquisition synergy goals. For the years ended December 31, 2017 and 2018, amounts also include Progressive Waste integration-related expenses, direct acquisition expenses and share-based compensation expenses associated with Progressive Waste share-based grants existing at June 1, 2016.

A reconciliation of segment EBITDA to Income before income tax provision is included in Note 14 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

Significant changes in revenue and segment EBITDA for our reportable segments for the year ended December 31, 2018, compared to the year ended December 31, 2017, and for the year ended December 31, 2017, compared to the year ended December 31, 2016, are discussed below.

Segment Revenue

Revenue in our Southern segment increased \$6.6 million, or 0.6%, to \$1.123 billion for the year ended December 31, 2018, from \$1.116 billion for the year ended December 31, 2017. The components of the increase consisted of net price increases of \$51.2 million, net revenue growth from acquisitions closed during, or subsequent to, the year ended December 31, 2017, of \$19.5 million and other revenue increases of \$2.4 million, partially offset by net revenue reductions from divestitures closed in 2017 and 2018 of \$43.2 million, decreased recyclable commodity sales of \$11.9 million resulting from the impact of declines in prices for old corrugated cardboard and other fiber products and solid waste volume decreases of \$11.4 million primarily from the net impact of declines in residential customers resulting from certain contracts acquired with the Progressive Waste acquisition that were terminated subsequent to December 31, 2017 and declines in commercial volumes due to intentional losses of certain low margin customers exceeding increases in transfer station volumes.

Revenue in our Southern segment increased \$402.5 million, or 56.4%, to \$1.116 billion for the year ended December 31, 2017, from \$713.4 million for the year ended December 31, 2016. The components of the increase consisted of net revenue growth from acquisitions closed during, or subsequent to, the year ended December 31, 2016, of \$409.0 million, net price increases of \$26.7 million and other revenue increases of \$0.3 million, partially offset by net revenue reductions from divestitures closed in 2017 of \$24.1 million and solid waste volume decreases of \$9.4 million primarily from the declines in residential volumes resulting from certain contracts acquired with the Progressive Waste acquisition that were terminated subsequent to December 31, 2016 and declines in commercial volumes due to intentional losses of certain low margin customers.

Revenue in our Eastern segment increased \$130.8 million, or 13.6%, to \$1.090 billion for the year ended December 31, 2018, from \$959.2 million for the year ended December 31, 2017. The components of the increase consisted of net revenue growth from acquisitions closed during, or subsequent to, the year ended December 31, 2017, of \$142.0 million and net price increases of \$43.6 million, partially offset by net revenue reductions from divestitures closed in 2017 of \$22.0 million, solid waste volume decreases of \$17.0 million due primarily to decreased residential collection, declines in transfer station volumes in our New York City market due to reduced inbound waste from the New York Department of Sanitation and lower landfill special waste volumes, decreased recyclable commodity sales of \$15.1 million resulting from the impact of declines in prices for old corrugated cardboard and other fiber products and other net revenue decreases of \$0.7 million.

Revenue in our Eastern segment increased \$332.6 million, or 53.1%, to \$959.2 million for the year ended December 31, 2017, from \$626.6 million for the year ended December 31, 2016. The components of the increase consisted of net revenue growth from acquisitions closed during, or subsequent to, the year ended December 31, 2016, of \$327.7 million, solid waste volume increases of \$9.4 million as increased roll off collection, transfer station, landfill municipal solid waste and landfill special waste offset decreased residential collection, net price increases of \$18.9 million and increased recyclable commodity sales of \$5.1 million resulting from the impact of higher prices for recyclable commodities through August 2017, partially offset by net revenue reductions from divestitures closed in 2017 of \$28.5 million.

Revenue in our Western segment increased \$36.7 million, or 3.6%, to \$1.044 billion for the year ended December 31, 2018, from \$1.007 billion for the year ended December 31, 2017. The components of the increase consisted of net price increases of \$30.6 million, solid waste volume increases of \$17.5 million due to the net impact of increases associated with landfill municipal solid waste, residential collection, commercial collection and roll off collection exceeding declines in landfill special waste volumes and net revenue growth from acquisitions closed during, or subsequent to, the year ended December 31, 2017, of \$11.1 million, partially offset by decreased recyclable commodity sales of \$12.0 million resulting from the impact of declines in prices for old corrugated cardboard and other fiber products and decreased intermodal revenue of \$10.5 million resulting from customer losses causing a reduction in cargo volume.

Revenue in our Western segment increased \$71.9 million, or 7.7%, to \$1.007 billion for the year ended December 31, 2017, from \$935.3 million for the year ended December 31, 2016. The components of the increase consisted of solid waste volume increases of \$38.2 million associated with residential collection, commercial collection, roll off collection, landfill municipal solid waste and landfill special waste, net price increases of \$18.4 million, increased recyclable commodity sales of \$7.2 million resulting from the impact of higher prices for recyclable commodities through August 2017, net revenue growth from acquisitions and divestitures closed during, or subsequent to, the year ended December 31, 2016, of \$6.2 million and increased intermodal revenues of \$2.0 million resulting from higher intermodal cargo volume, partially offset by other revenue decreases of \$0.1 million.

Revenue in our Canada segment decreased \$1.6 million, or 0.2%, to \$727.2 million for the year ended December 31, 2018, from \$728.8 million for the year ended December 31, 2017. The components of the decrease consisted of decreased recyclable commodity sales of \$22.7 million resulting from the impact of declines in prices for old corrugated cardboard and other fiber products and solid waste volume decreases of \$19.8 million associated with decreased roll off collection volumes, residential revenue resulting from the non-renewal of certain contracts acquired in the Progressive Waste acquisition, intentional losses of certain low margin commercial collection customers and reduced landfill municipal solid waste revenue, partially offset by net price increases of \$38.1 million, revenue growth from acquisitions closed in 2018 of \$2.5 million, an increase of \$0.2 million resulting from a higher average foreign currency exchange rate in effect during the comparable reporting periods and \$0.1 million of other revenue increases.

Revenue in our Canada segment increased \$310.9 million, or 74.4%, to \$728.8 million for the year ended December 31, 2017, from \$417.9 million for the year ended December 31, 2016. The components of the increase consisted of revenue growth from the Progressive Waste acquisition of \$279.8 million for the year ended December 31, 2017, net price increases of \$15.9 million, an increase of \$14.2 million resulting from an increase in the average foreign currency exchange rate in effect during the comparable reporting periods, increased landfill gas sales of \$9.5 million resulting from higher pricing and increased recyclable commodity sales of \$4.3 million resulting from the impact of higher prices for recyclable commodities through August 2017, partially offset by solid waste volume decreases of \$11.1 million associated with decreased landfill special waste volumes and intentional losses of certain low margin commercial collection customers and \$1.7 million of other revenue decreases.

Revenue in our Central segment increased \$65.3 million, or 10.4%, to \$693.5 million for the year ended December 31, 2018, from \$628.2 million for the year ended December 31, 2017. The components of the increase consisted of revenue growth from acquisitions closed during, or subsequent to, the year ended December 31, 2017, of \$46.3 million, net price increases of \$25.1 million and solid waste volume increases of \$3.9 million from increased roll off collection and landfill special waste, partially offset by net revenue reductions from divestitures closed during, or subsequent to, the year ended December 31, 2017, of \$3.1 million, decreased recyclable commodity sales of \$4.6 million resulting from the impact of declines in prices for old corrugated cardboard and other fiber products and other revenue decreases of \$2.3 million.

Revenue in our Central segment increased \$66.7 million, or 11.9%, to \$628.2 million for the year ended December 31, 2017, from \$561.5 million for the year ended December 31, 2016. The components of the increase consisted of net revenue growth from acquisitions closed during, or subsequent to, the year ended December 31, 2016, of \$36.1 million, net price increases of \$20.1 million, increased recyclable commodity sales of \$3.2 million resulting from the impact of higher prices for recyclable commodities through August 2017, solid waste volume increases of \$8.9 million as increased roll off collection, transfer station and landfill special waste offset decreased residential and commercial collection and other revenue increases of \$1.5 million, partially offset by net revenue reductions from divestitures closed in 2016 and 2017 of \$3.1 million.

Revenue in our E&P segment increased \$54.5 million, or 28.5%, to \$245.7 million for the year ended December 31, 2018, from \$191.2 million for the year ended December 31, 2017 due to higher average crude oil and natural gas prices during the current year increasing drilling activity and E&P disposal volumes at the majority of our sites.

Revenue in our E&P segment increased \$70.1 million, or 57.9%, to \$191.2 million for the year ended December 31, 2017, from \$121.1 million for the year ended December 31, 2016. The components of the increase consisted of higher E&P volumes, primarily in our E&P disposal operations in the Permian Basin and Louisiana.

Segment EBITDA

Segment EBITDA in our Western segment decreased \$5.2 million, or 1.6%, to \$318.4 million for the year ended December 31, 2018, from \$323.6 million for the year ended December 31, 2017. The decrease was due primarily to an increase in taxes on revenues of \$20.4 million due primarily to higher tax rates under our new operating permit at Chiquita Canyon Landfill, a net \$8.5 million increase in cost of operations and SG&A expenses attributable to acquired operations, an increase in corporate overhead expense allocations of \$6.7 million due to higher revenues for which overhead allocations are based and a higher overhead allocation rate, an increase in diesel fuel expense of \$3.4 million due to increases in the market price of diesel fuel, an increase in direct and administrative labor expenses of \$4.1 million due primarily to employee pay rate increases, an increase in disposal expenses of \$3.4 million due primarily to increased collection volumes, an increase in professional fees expense of \$2.3 million resulting primarily from higher legal expenses, an increase in expenses associated with recyclable commodities of \$1.9 million due to increased costs charged by third party processors for recyclable commodities we collect and \$1.5 million of other net expense increases, partially offset by an increase in revenues of \$36.7 million, a decrease in third party trucking and transportation expenses of \$9.9 million due to the mix of landfill special waste volumes requiring transportation to our disposal sites and a decrease in compressed natural gas fuel expense of \$0.4 million due to the recognition during the year ended December 31, 2018 of retroactive tax credits associated with fuel purchases in 2017.

Segment EBITDA in our Western segment increased \$7.9 million, or 2.5%, to \$323.6 million for the year ended December 31, 2017, from \$315.7 million for the year ended December 31, 2016. The increase was due primarily to an increase in revenues of \$71.9 million from organic growth and acquisitions, partially offset by an increase in taxes on revenues of \$12.6 million due to the aforementioned increase in revenues, an increase in direct and administrative labor expenses of \$12.1 million due primarily to employee pay rate increases, an increase in third-party disposal expense of \$5.5 million due to increased collection volumes and disposal rate increases, an increase in third-party trucking and transportation expenses of \$4.9 million due to increased disposal volumes that require transportation to our landfills, an increase in employee benefits expenses of \$4.3 million due to increased severity of medical claims, a net \$3.6 million increase in cost of operations and SG&A expenses attributable to acquired operations, an increase in fuel expense of \$3.4 million due to increases in the market price of diesel fuel, an increase in expenses associated with the purchase of recyclable commodities of \$3.2 million due to increased recyclable commodity values, an increase in truck, container, equipment and facility maintenance and repair expenses of \$2.7 million due to variability in the timing and severity of major repairs, an increase in expenses for auto and workers' compensation claims of \$2.2 million due to increased claims and higher average rates per claim, an increase in professional fees of \$1.7 million due primarily to higher engineering and legal expenses at our landfills, an increase in landfill permitting and monitoring expenses of \$1.7 million resulting primarily from requirements of our new operating permit at Chiquita Canyon landfill, an increase in equipment and facility rental expenses of \$1.1 million resulting from new property leases and equipment rented to support growth in our intermodal operations, an increase in intermodal expenses of \$1.1 million resulting from an increase in intermodal cargo volume, an increase in leachate disposal expenses at our landfills of \$0.6 million due to heavy precipitation experienced in the first quarter of 2017 and \$3.3 million of other net expense increases.

Segment EBITDA in our Eastern segment increased \$25.3 million, or 9.2%, to \$299.2 million for the year ended December 31, 2018, from \$273.9 million for the year ended December 31, 2017. The increase was due primarily to an increase in revenues of \$152.8 million from organic growth and acquisitions, a \$6.1 million decrease in third party disposal expenses due to improved internalization of waste collected at operating locations acquired in 2017, a decrease in truck, container, equipment and facility maintenance and repair expenses of \$2.8 million due to higher prior year expenses incurred to bring acquired equipment to our operating and safety standards, a decrease in insurance premium expense of \$2.6 million due primarily to transferring the operating locations acquired in the Groot acquisition onto our insurance program and a decrease in compressed natural gas fuel expense of \$0.8 million due to the recognition during the year ended December 31, 2018 of retroactive tax credits associated with fuel purchases in 2017, partially offset by a net \$98.4 million increase in cost of operations and SG&A expenses attributable to acquired operations, a decrease to EBITDA of \$6.5 million from the impact of operations disposed of during, or subsequent to, the year ended December 31, 2017, an increase in corporate overhead expense allocations of \$7.8 million due to higher revenues for which overhead allocations are based and a higher overhead allocation rate, an increase in third-party trucking and transportation expenses of \$7.6 million due primarily to higher internalized disposal of collected waste volumes and increased rates charged by third parties to provide trucking and transportation services, increased leachate disposal expenses of \$5.6 million due to increased precipitation generating higher leachate volumes, an increase in direct labor expenses of \$4.2 million due primarily to employee pay rate increases, an increase in diesel fuel expense of \$3.7 million due to increases in the market price of diesel fuel, an increase in taxes on revenues of \$1.6 million due primarily to internalizing additional disposal volumes at our landfills that are assessed taxes based on total inbound tonnage, an increase in property tax expenses of \$1.5 million due primarily to credits recognized in the prior year period and \$2.9 million of other net expense increases.

Segment EBITDA in our Eastern segment increased \$84.7 million, or 44.8%, to \$273.9 million for the year ended December 31, 2017, from \$189.2 million for the year ended December 31, 2016. The increase was due primarily to an increase in revenues of \$361.1 million from organic growth and acquisitions and a decrease in third party disposal expenses of \$4.1 million due primarily to increased internal disposal of waste at our transfer stations and landfills in our New York markets, partially offset by a net \$245.9 million increase in cost of operations and SG&A expenses attributable to acquired operations, an increase in third-party trucking and transportation expenses of \$6.4 million due to increased disposal volumes that require transportation to our landfills, an increase in direct and administrative labor expenses of \$5.8 million due primarily to employee pay rate increases, an increase in corporate overhead expense allocations of \$4.2 million due primarily to an increase in budgeted revenues, which is the basis upon which overhead allocations are calculated, a decrease of \$3.9 million from the impact of operations disposed of in 2017, an increase in taxes on revenues of \$3.8 million resulting from the aforementioned increase in revenues, an increase in truck, container, equipment and facility maintenance and repair expenses of \$3.4 million due to variability in the timing and severity of major repairs, an increase in employee benefits expenses of \$2.4 million due to increased severity of medical claims, an increase in fuel expense of \$1.6 million due to increases in the market price of diesel fuel, an increase in expenses for uncollectible accounts receivable of \$1.5 million due primarily to the collection in 2016 of several large receivable balances that were written off as a doubtful account in a prior year and \$1.6 million of other net expense increases.

Segment EBITDA in our Southern segment increased \$18.2 million, or 7.0%, to \$276.8 million for the year ended December 31, 2018, from \$258.6 million for the year ended December 31, 2017. The increase was due to an increase in revenues of \$49.8 million from organic growth and acquisitions, a decrease in third party disposal expenses of \$6.5 million due to decreases in collection volumes requiring disposal at a third party location and improved internalization of waste collected at operating locations acquired in the Progressive Waste acquisition, a decrease in compressed natural gas fuel expense of \$1.5 million due to the recognition during the year ended December 31, 2018 of retroactive tax credits associated with fuel purchases in 2017, a decrease in expenses associated with the purchase of recyclable commodities of \$0.9 million due to decreased recyclable commodity values, a decrease in insurance claims and premiums expense of \$0.7 million due to improved safety results at operating locations acquired in the Progressive Waste acquisition, a decrease in truck, container, equipment and facility maintenance and repair expenses of \$0.8 million due to higher prior year expenses incurred to bring acquired equipment to our operating and safety standards and \$1.4 million of other net decreases, partially offset by a net \$11.5 million increase in cost of operations and SG&A expenses attributable to acquired operations, a decrease to EBITDA of \$10.4 million from the impact of operations disposed of during, or subsequent to, the year ended December 31, 2017, an increase in third-party trucking and transportation expenses of \$7.6 million due to increased disposal volumes at our transfer station and landfill operations and increased rates charged by third parties to provide trucking and transportation services, an increase in labor expenses of \$5.6 million due primarily to employee pay rate increases, an increase in taxes on revenues of \$2.8 million due primarily to an adjustment recorded in the current period for taxes incurred in the prior year, an increase in employee benefits expenses of \$1.9 million due to transferring retained Progressive Waste employees onto the Waste Connections benefits program, which provides increased benefits to the employees, an increase in subcontracted expenses of \$1.5 million due to contracting certain low margin services to third parties, an increase in corporate overhead expense allocations of \$1.1 million due to a higher overhead allocation rate and an increase in diesel fuel expense of \$1.0 million due to increases in the market price of diesel fuel.

Segment EBITDA in our Southern segment increased \$95.3 million, or 58.3%, to \$258.6 million for the year ended December 31, 2017, from \$163.3 million for the year ended December 31, 2016. The increase was due primarily to an increase in revenues of \$426.6 million from organic growth and acquisitions, decreases in insurance expense of \$2.9 million due to improved incident rates at operations acquired from Progressive Waste and decreases in equipment rental expense of \$1.5 million due to the termination of certain short-term equipment leases assumed in the Progressive Waste acquisition, partially offset by a net \$310.6 million increase in cost of operations and SG&A expenses attributable to acquired operations, an increase in direct and administrative labor expenses of \$8.4 million due primarily to employee pay rate increases, an increase of \$3.5 million from incremental labor and repair expenses resulting from hurricanes impacting our Texas, Louisiana and Florida operations, an increase in truck, container, equipment and facility maintenance and repair expenses of \$3.5 million due to variability in the timing and severity of major repairs, an increase in fuel expense of \$2.4 million due to increases in the market price of diesel fuel, a decrease of \$1.8 million from the impact of operations disposed of in 2017, an increase in corporate overhead expense allocations of \$1.4 million due to a higher overhead allocation rate, an increase in third-party trucking and transportation expenses of \$1.3 million due to increased disposal volumes that require transportation to our landfills, an increase in employee benefits expenses of \$0.8 million due to increased severity of medical claims, an increase in third-party disposal expense of \$0.7 million due primarily to increased roll off collection volumes and disposal rate increases and \$1.3 million of other net expense increases.

Segment EBITDA in our Canada segment decreased \$3.5 million, or 1.3%, to \$261.2 million for the year ended December 31, 2018, from \$264.7 million for the year ended December 31, 2017. The decrease was comprised of a decrease in revenues of \$1.6 million, an increase in diesel fuel expense of \$3.9 million due to increases in the market price of diesel fuel, an increase in direct labor expenses of \$2.6 million due primarily to employee pay rate increases, an increase in corporate overhead expense allocations of \$1.6 million due to a higher overhead allocation rate, an increase in employee benefits expenses of \$1.6 million due primarily to higher medical expenses and \$1.4 million of other net expense increases, partially offset by a decrease in expenses associated with the purchase of recyclable commodities of \$7.5 million due to decreased recyclable commodity values and a decrease in insurance premium expense of \$1.7 million due primarily to increasing the deductible limits under our insurance program.

Segment EBITDA in our Canada segment increased \$111.3 million, or 72.5%, to \$264.7 million for the year ended December 31, 2017, from \$153.4 million for the year ended December 31, 2016. The \$111.3 million increase was comprised of an increase of \$5.2 million resulting from an increase in the average foreign currency exchange rate in effect during the comparable reporting periods and a \$106.1 million increase assuming foreign currency parity during the comparable reporting periods. The \$106.1 million increase was due primarily to EBITDA contribution from the Progressive Waste acquisition of \$99.3 million for the five month period of January to May 2017, an increase in revenues from organic growth of \$17.0 million and \$0.8 million other net expense decreases, partially offset by an increase in corporate overhead charges of \$3.3 million due to the Canada segment not receiving an allocation of corporate overhead for the month of June 2016, an increase in truck, container, equipment and facility maintenance and repair expenses of \$2.2 million due to variability in the timing and severity of major repairs, an increase in direct and administrative labor expenses of \$1.9 million due primarily to employee pay rate increases, an increase in fuel expense of \$1.3 million due to increases in the market price of diesel fuel, an increase in taxes on revenues of \$1.2 million due to an increase in revenues and an increase in expenses associated with the purchase of recyclable commodities of \$1.1 million due to increased recyclable commodity values.

Segment EBITDA in our Central segment increased \$18.5 million, or 7.8%, to \$255.6 million for the year ended December 31, 2018, from \$237.1 million for the year ended December 31, 2017. The increase was due primarily to an increase in revenues of \$65.3 million, a decrease in fuel expense of \$1.7 million due primarily to purchasing fuel in 2018 under favorable fixed price fuel purchase contracts entered into in 2017 and the recognition during the year ended December 31, 2018 of retroactive tax credits associated with fuel purchases in 2017 and \$0.7 million of other net expense decreases, partially offset by a net \$36.4 million increase in cost of operations and SG&A expenses attributable to acquired operations, an increase in direct and administrative labor expenses of \$5.5 million due primarily to employee pay rate increases, an increase in corporate overhead expense allocations of \$3.6 million due to higher revenues for which overhead allocations are based and a higher overhead allocation rate, an increase in third party trucking and transportation expenses of \$2.7 million due to an increase in landfill special waste volumes requiring transportation to our disposal sites and an increase in legal expenses of \$1.0 million.

Segment EBITDA in our Central segment increased \$28.2 million, or 13.5%, to \$237.1 million for the year ended December 31, 2017, from \$208.9 million for the year ended December 31, 2016. The increase was due primarily to an increase in revenues of \$66.7 million and a decrease in third party disposal expenses of \$1.9 million due primarily to increased internal disposal of waste at our transfer stations and landfills in our Nebraska markets and \$0.2 million of other net expense decreases, partially offset by a net \$19.6 million increase in cost of operations and SG&A expenses attributable to acquired operations, an increase in direct and administrative labor expenses of \$5.2 million due primarily to employee pay rate increases and a decrease in unfilled positions, an increase in third-party trucking and transportation expenses of \$4.0 million due to increased disposal volumes that require transportation to our landfills, an increase in taxes on revenues of \$3.9 million resulting from the aforementioned increase in revenues, an increase in truck, container, equipment and facility maintenance and repair expenses of \$3.7 million due to variability in the timing and severity of major repairs, an increase in employee benefits expenses of \$2.0 million due to increased severity of medical claims, an increase in expenses for uncollectible accounts receivable of \$1.4 million associated with a contract dispute with an individual customer and an increase in fuel expense of \$0.8 million due to increases in the market price of diesel fuel.

Segment EBITDA in our E&P segment increased \$39.2 million, or 43.3%, to \$129.8 million for the year ended December 31, 2018, from \$90.6 million for the year ended December 31, 2017. The increase was due primarily to an increase in revenues of \$54.5 million, partially offset by an increase in subcontracted operating expenses of \$3.9 million due primarily to subcontracting certain operating activities to third parties, an increase in corporate overhead expense allocations of \$2.7 million due to higher revenues for which overhead allocations are based and a higher overhead allocation rate, an increase in equipment and facility repair and maintenance expenses of \$2.0 million due to increased equipment hour usage resulting from higher disposal volumes processed at our sites, an increase in cell processing expenses of \$1.8 million due primarily to increased disposal volumes, an increase in labor expenses of \$1.3 million due to increased headcount to support higher disposal volumes, an increase in diesel fuel expense of \$1.1 million due to increases in the market price of diesel fuel, an increase in royalties of \$1.1 million due to increased disposal volumes, an increase in third-party trucking and transportation expenses of \$1.1 million due to increased E&P volumes that require us to transport the waste to our disposal sites and \$0.3 million of other expense increases.

Segment EBITDA in our E&P segment increased \$58.1 million, or 178.9%, to \$90.6 million for the year ended December 31, 2017, from \$32.5 million for the year ended December 31, 2016. The increase was due primarily to an increase in revenues of \$70.1 million and a decrease in corporate overhead expense allocations of \$2.0 million due primarily to a decrease in budgeted revenues, which is the basis upon which overhead allocations are calculated, partially offset by an increase in subcontracted operating expenses of \$1.9 million due primarily to subcontracting the operations of a disposal site in North Dakota to a third party, an increase in fuel expense of \$0.7 million due to increases in the market price of diesel fuel and the following increases attributable to higher disposal volumes in the current period: an increase in equipment and facility maintenance and repair expenses of \$4.4 million; an increase in equipment rental expenses of \$1.7 million; an increase in taxes on revenues of \$1.9 million; an increase in third party trucking expenses of \$2.2 million; an increase in processing cell remediation expenses of \$0.5 million and \$0.7 million of other expense increases.

Segment EBITDA at Corporate increased \$24.3 million, to a loss of \$8.2 million for the year ended December 31, 2018, from a loss of \$32.5 million for the year ended December 31, 2017. The increase was due to an increase in corporate overhead allocated to our segments of \$20.6 million due to an increase in total corporate expenses to support acquired operations, a decrease of \$10.6 million in integration-related professional fees and severance-related expenses incurred in the prior year period for Progressive Waste personnel who were not permanently retained as employees of the Company following the close of the Progressive Waste acquisition, a decrease in share-based compensation expenses of \$9.3 million due primarily to less share price volatility and less outstanding shares in the current period for equity awards accounted for as liabilities that were granted to employees of Progressive Waste prior to June 1, 2016 which are subject to valuation adjustments each period based on changes in fair value, a decrease in deferred compensation expense of \$4.3 million resulting from less increases to deferred compensation liabilities to employees as a result of lower current period increases in the market value of investments to which employee deferred compensation balances are tracked, a decrease in accrued recurring cash incentive compensation expense to our management of \$2.4 million due to decreased solid waste volumes and reduced revenue for recyclable commodities resulting in a lower achievement of interim financial targets during the year ended December 31, 2018 and \$2.8 million of other net expense decreases, partially offset by an increase of \$11.6 million in professional fees expense resulting primarily from higher legal expenses, an increase in equity-based compensation expenses of \$6.2 million associated with our annual recurring grant of restricted share units to our personnel, an increase of \$5.0 million in equity-based compensation expenses associated with adjusting common shares of Waste Connections, Inc. held in our deferred compensation plan by certain key executives to fair value as a result of the shares being exchanged for other investment options and an increase in direct acquisition expenses of \$2.9 million due to increased acquisition activity.

Segment EBITDA at Corporate increased \$86.7 million, to a loss of \$32.5 million for the year ended December 31, 2017, from a loss of \$119.2 million for the year ended December 31, 2016. The increase was due to an increase in corporate overhead allocated to our segments of \$34.9 million due to an increase in total corporate expenses to support the operations acquired in the Progressive Waste acquisition, a decrease in direct acquisition costs of \$27.7 million resulting from amounts incurred in the prior year period related to the Progressive Waste acquisition, a decrease of \$20.7 million in integration-related professional fees and severance-related expenses incurred in the prior year period for Progressive Waste personnel who were not permanently retained as employees of New Waste Connections following the close of the Progressive Waste acquisition, a decrease of \$14.5 million from New Waste Connections paying excise taxes in the prior year period on the unvested or vested and undistributed equity-compensation holdings of our corporate officers and members of our Board of Directors resulting from the Progressive Waste acquisition, a decrease of \$11.8 million resulting from the nonrecurring prior year accrual of incentive compensation expenses to certain of our executive officers and key employees related to the achievement of defined synergy goals realized by New Waste Connections from the Progressive Waste acquisition, a decrease in share-based compensation expenses of \$8.8 million related to awards granted to employees of Progressive Waste prior to June 1, 2016 for which vesting was accelerated in the prior year period due to plan provisions regarding a change in control followed by termination of employment and resulting from less outstanding shares in the current period which are subject to valuation adjustments each period based on changes in fair value and a decrease in equity-based compensation expenses of \$2.3 million resulting from the acceleration of vesting in the prior year period of performance share units granted to Old Waste Connections' management in 2014 and 2015, partially offset by an increase in accrued recurring cash incentive compensation expense to our management of \$6.7 million due to the achievement of interim financial targets during the year ended December 31, 2017 and the addition of accrued cash incentive compensation expense for the retained Progressive Waste employees, an increase in equity-based compensation expenses of \$5.1 million associated with our annual recurring grant of restricted share units to our personnel, an increase in payroll and employee benefits expenses of \$4.7 million due to increased corporate headcount to support the operations of Progressive Waste and annual compensation increases, an increase in software license fees of \$3.7 million to support our new payroll processing application and computer applications acquired in the Progressive Waste acquisition, an increase in corporate travel, meetings and training expenses of \$3.6 million resulting primarily from the integration of employees of Progressive Waste into New Waste Connections, an increase in accounting and information technology professional fee expenses of \$2.7 million due to increased support required as a result of growth from the Progressive Waste acquisition, an increase in employee relocation expenses of \$2.2 million primarily associated with corporate personnel added to support the additional administrative oversight resulting from the Progressive Waste acquisition, an increase in deferred compensation expense of \$2.2 million resulting from deferred compensation liabilities to employees increasing as a result of increases in the market value of investments to which employee deferred compensation balances are tracked and \$3.1 million of other net expense increases.

Liquidity and Capital Resources

The following table sets forth certain cash flow information for the years ended December 31, 2018, 2017 and 2016 (in thousands of U.S. dollars):

	2018	2017	2016
Net cash provided by operating activities	\$ 1,411,235	\$ 1,187,260	\$ 795,312
Net cash used in investing activities	(1,371,820)	(860,914)	(292,581)
Net cash provided by (used in) financing activities	(187,578)	56,760	(354,869)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1,290)	1,795	(598)
Net increase (decrease) in cash, cash equivalents and restricted cash	(149,453)	384,901	147,264
Cash, cash equivalents and restricted cash at beginning of year	553,227	168,476	21,254
Plus (less): change in cash held for sale	192	(150)	(42)
Cash, cash equivalents and restricted cash at end of year	<u>\$ 403,966</u>	<u>\$ 553,227</u>	<u>\$ 168,476</u>

Operating Activities Cash Flows

For the year ended December 31, 2018, net cash provided by operating activities was \$1.411 billion. For the year ended December 31, 2017, net cash provided by operating activities was \$1.187 billion. The \$224.0 million increase was due primarily to the following:

- 1) *Increase in earnings* — Our increase in net cash provided by operating activities was favorably impacted by \$117.2 million from an increase in net income, excluding depreciation, amortization, deferred taxes, adjustments to and payments of contingent consideration recorded in earnings and impairments and other operating items, due primarily to the impact of acquisitions closed in 2017 and the year ended December 31, 2018, volume driven earnings growth at our E&P segment, price-led earnings growth at certain solid waste segments and benefits resulting from the enactment of the Tax Act in 2017.
- 2) *Prepaid expenses* — Our increase in net cash provided by operating activities was favorably impacted by \$91.2 million from prepaid expenses and other current assets (prepaid expenses and other current assets provided a cash inflow of \$39.8 million in 2018, compared to a cash outflow of \$51.4 million in 2017) due primarily to changes in prepaid income taxes.
- 3) *Deferred revenue* — Our increase in net cash provided by operating activities was favorably impacted by \$13.7 million from deferred revenue due primarily to a price-driven increase in solid waste collection revenues and the timing of the billing for those services.
- 4) *Other long-term liabilities* — Our increase in net cash provided by operating activities was favorably impacted by \$7.5 million from other long-term liabilities due primarily to decreased cash settlements of share-based compensation awards granted to Progressive Waste employees prior to the date of the Progressive Waste acquisition that continued to remain outstanding following the closing of the acquisition.
- 5) *Capping, closure and post-closure expenditures* — Our increase in net cash provided by operating activities was favorably impacted by \$6.1 million due to decreased capping expenditures at our landfills.
- 6) *Accounts payable and accrued liabilities* — Our increase in net cash provided by operating activities was unfavorably impacted by \$17.6 million from accounts payable and accrued liabilities due primarily to the timing of payments of trade payables.

For the year ended December 31, 2017, net cash provided by operating activities was \$1.187 billion. For the year ended December 31, 2016, net cash provided by operating activities was \$795.3 million. The \$392.0 million increase was due primarily to the following:

- 1) *Increase in earnings* — Our increase in net cash provided by operating activities was favorably impacted by \$410.8 million from an increase in net income, excluding depreciation, amortization, deferred taxes and impairments and other operating items, due primarily to the full year contribution from the Progressive Waste acquisition completed on June 1, 2016, the impact of other acquisitions closed in 2017 and of the income tax benefit primarily associated with an adjustment of our deferred income tax liability balance resulting from the enactment of the Tax Act in 2017.
- 2) *Accounts payable and accrued liabilities* — Our increase in net cash provided by operating activities was favorably impacted by \$50.8 million from accounts payable and accrued liabilities due primarily to an increase in accrued interest expense due to the timing of interest payments for our long-term notes, increased trade payables based on the timing of year end disbursements and increased accrued payroll and payroll related expenses due to the timing of pay cycles, partially offset by the payment in 2017 of the prior year accrual of incentive compensation expenses to certain of our executive officers and key employees related to the achievement of defined synergy goals realized by New Waste Connections from the Progressive Waste acquisition.

- 3) *Prepaid expenses* – Our increase in net cash provided by operating activities was unfavorably impacted by \$29.8 million from prepaid expenses and other current assets due primarily to increased prepaid income taxes for our US entities.
- 4) *Accounts receivable* – Our increase in net cash provided by operating activities was unfavorably impacted by \$33.7 million from accounts receivable due to increased revenues, with less favorable collection results, contributing to an increased amount of revenues remaining uncollected at the end of the current period.
- 5) *Other long-term liabilities* – Our increase in net cash provided by operating activities was unfavorably impacted \$14.9 million from other long-term liabilities due primarily to increased cash settlements of share-based compensation awards granted to Progressive Waste employees prior to the June 1, 2016 acquisition date that continued to remain outstanding following the close of the Progressive Waste acquisition.

As of December 31, 2018, we had a working capital surplus of \$232.2 million, including cash and equivalents of \$319.3 million. Our working capital surplus decreased \$142.1 million from a working capital surplus of \$374.3 million at December 31, 2017, including cash and equivalents of \$433.8 million, due primarily to decreased cash balances. To date, we have experienced no loss or lack of access to our cash or cash equivalents; however, we can provide no assurances that access to our cash and cash equivalents will not be impacted by adverse conditions in the financial markets. Our strategy in managing our working capital is generally to apply the cash generated from our operations that remains after satisfying our working capital and capital expenditure requirements, along with share repurchase and dividend programs, to reduce the unhedged portion of our indebtedness under our Credit Agreement and to minimize our cash balances.

Investing Activities Cash Flows

Net cash used in investing activities increased \$510.9 million to \$1.372 billion for the year ended December 31, 2018, from \$860.9 million for the year ended December 31, 2017. The significant components of the increase included the following:

- 1) An increase in cash paid for acquisitions of \$419.4 million due primarily to an increase in acquisition activity in 2018;
- 2) An increase in capital expenditures of \$66.9 million due to higher landfill site development costs and trucks and containers purchased for operations acquired subsequent to December 31, 2017; less
- 3) A decrease in cash proceeds from the disposal of assets of \$23.0 million due primarily to a higher number of divestitures of operating locations completed during the year ended December 31, 2017.

Net cash used in investing activities increased \$568.3 million to \$860.9 million for the year ended December 31, 2017, from \$292.6 million for the year ended December 31, 2016. The significant components of the increase included the following:

- 1) An increase in cash paid for acquisitions of \$393.6 million due primarily to the January 2017 acquisition of Groot;
- 2) An increase in capital expenditures for property and equipment of \$134.6 million; and
- 3) A decrease in cash and restricted cash acquired in the prior year period from the Progressive Waste acquisition of \$70.8 million; less
- 4) An increase in cash proceeds from the disposal of assets of \$23.8 million due primarily to the divestiture of certain operations in 2017.

Total consideration for the June 2016 Progressive Waste acquisition consisted of the issuance of common shares and assumption of Progressive Waste's debt and other liabilities. We did not transfer cash consideration to the former shareholders of Progressive Waste. Progressive Waste had cash and restricted cash balances totaling \$70.8 million, which we acquired upon the close of the Progressive Waste acquisition.

The increase in capital expenditures for property and equipment was due primarily to increases in expenditures resulting from the January 2017 acquisition of Groot, the June 2016 Progressive Waste acquisition, increases in expenditures for trucks to support our collection operations, additional heavy equipment purchased to support volume increases in our landfill operations and increased spending on information technology to support new applications as well as applications acquired in the Progressive Waste acquisition.

Financing Activities Cash Flows

Net cash from financing activities decreased \$244.4 million to net cash used in financing activities of \$187.6 million for the year ended December 31, 2018, from net cash provided by financing activities of \$56.8 million for the year ended December 31, 2017. The significant components of the decrease included the following:

- 1) A decrease from the net change in long-term borrowings of \$151.7 million (long-term borrowings increased \$203.6 million during the year ended December 31, 2017 and increased \$51.9 million during the year ended December 31, 2018) due primarily to prior year borrowings to fund payments for acquisitions;
- 2) An increase in payments to repurchase our common shares of \$58.9 million due to no shares being repurchased during the year ended December 31, 2017;
- 3) A decrease of \$9.1 million from changes in book overdraft due to the variability of outstanding cash balances to which outstanding checks are applied;
- 4) An increase in cash dividends paid of \$20.6 million due primarily to an increase in our average quarterly dividend rate for the year ended December 31, 2018 to \$0.145 per share, from \$0.125 per share for the year ended December 31, 2017; and
- 5) A decrease of \$8.1 million from a reduction in the sale of common shares held in trust; and
- 6) A decrease of \$5.0 million from increased debt issuance costs due primarily to the issuance of our 2028 Senior Notes in 2018; less
- 7) An increase of \$11.0 million from a reduction in contingent consideration payments.

Net cash from financing activities increased \$411.7 million to net cash provided by financing activities of \$56.8 million for the year ended December 31, 2017, from net cash used in financing activities of \$354.9 million for the year ended December 31, 2016. The significant components of the increase included the following:

- 1) An increase in the net change in long-term borrowings of \$448.4 million (long-term borrowings decreased \$244.8 million during the year ended December 31, 2016 and increased \$203.6 million during the year ended December 31, 2017) due primarily to increased payments for acquisitions;
- 2) An increase of \$9.5 million from an increase in book overdraft due to a higher volume of outstanding checks resulting from the Progressive Waste acquisition; and
- 3) An increase of \$9.8 million from reduced debt issuance costs resulting primarily from our Credit Agreement that we entered into in June 2016 in conjunction with the Progressive Waste acquisition; less
- 4) An increase in cash dividends paid of \$39.4 million due primarily to an increase in our average quarterly dividend rate for the year ended December 31, 2017 to \$0.125 per share, from \$0.103 per share for the year ended December 31, 2016, and an increase in common shares outstanding resulting from the Progressive Waste acquisition; and
- 5) A decrease of \$9.1 million from a reduction in the sale of common shares held in trust.

Our business is capital intensive. Our capital requirements include acquisitions and capital expenditures for landfill cell construction, landfill development, landfill closure activities and intermodal facility construction in the future.

On July 24, 2018, our Board of Directors approved, subject to receipt of regulatory approvals, the annual renewal of our normal course issuer bid, or the NCIB, to purchase up to 13,174,976 of our common shares during the period of August 8, 2018 to August 7, 2019 or until such earlier time as the NCIB is completed or terminated at our option. The timing and amounts of any repurchases pursuant to the NCIB will depend on many factors, including our capital structure, the market price of our common shares and overall market conditions. All common shares purchased under the NCIB shall be immediately cancelled following their repurchase. Information regarding our NCIB plan can be found under the "Shareholders' Equity" section in Note 11 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10K and is incorporated herein by reference.

The Board of Directors of Old Waste Connections authorized the initiation of a quarterly cash dividend in October 2010 and has increased it on an annual basis. In October 2018, our Board of Directors authorized an increase to our regular quarterly cash dividend of \$0.02, from \$0.14 to \$0.16 per share. Cash dividends of \$152.6 million and \$132.0 million were paid during the years ended December 31, 2018 and 2017, respectively. We cannot assure you as to the amounts or timing of future dividends.

We made \$546.1 million in capital expenditures during the year ended December 31, 2018. We expect to make capital expenditures of approximately \$575 million in 2019 in connection with our existing business. We intend to fund our planned 2019 capital expenditures principally through cash on hand, internally generated funds and borrowings under our Credit Agreement. In addition, we may make substantial additional capital expenditures in acquiring MSW and E&P waste businesses. If we acquire additional landfill disposal facilities, we may also have to make significant expenditures to bring them into compliance with applicable regulatory requirements, obtain permits or expand our available disposal capacity. We cannot currently determine the amount of these expenditures because they will depend on the number, nature, condition and permitted status of any acquired landfill disposal facilities. We believe that our cash and equivalents, Credit Agreement and the funds we expect to generate from operations will provide adequate cash to fund our working capital and other cash needs for the foreseeable future. However, disruptions in the capital and credit markets could adversely affect our ability to draw on our Credit Agreement or raise other capital. Our access to funds under the Credit Agreement is dependent on the ability of the banks that are parties to the agreement to meet their funding commitments. Those banks may not be able to meet their funding commitments if they experience shortages of capital and liquidity or if they experience excessive volumes of borrowing requests within a short period of time.

On June 1, 2016, we assumed \$1.729 billion of debt in the Progressive Waste acquisition consisting of \$1.659 billion of amounts outstanding under Progressive Waste's prior Amended and Restated Credit Agreement, dated as of June 30, 2015, among Progressive Waste, Bank of America, N.A., acting through its Canada branch, as global agent, Bank of America, N.A., as the U.S. agent, and the other lenders and financial institutions party thereto (the "2015 Progressive Waste Credit Agreement"), \$64.0 million of tax-exempt bonds and \$5.8 million of other long-term debt.

On June 1, 2016, we terminated the 2015 Progressive Waste Credit Agreement. Also on June 1, 2016, Old Waste Connections terminated a Revolving Credit and Term Loan Agreement, dated as of January 26, 2015, by and among Old Waste Connections, Bank of America, N.A., as the administrative agent and swing line lender and letter of credit issuer, and certain lenders and other financial institutions party thereto (the "2015 Old Waste Connections Credit Agreement," and together with the 2015 Progressive Waste Credit Agreement, the "Prior Credit Agreements").

On June 1, 2016, we also entered into several financing agreements, including that certain Revolving Credit and Term Loan Agreement (the "2016 Credit Agreement") with Bank of America, N.A., acting through its Canada Branch, as global agent, the swing line lender and letter of credit issuer, Bank of America, N.A., as the U.S. Agent and a letter of credit issuer, the lenders thereunder and any other financial institutions from time to time party thereto. Proceeds from the borrowings under the 2016 Credit Agreement were used initially to refinance our indebtedness under the Prior Credit Agreements and for the payment of transaction fees and expenses related to the Progressive Waste acquisition.

On March 21, 2018, the 2016 Credit Agreement was amended and restated in its entirety pursuant to an Amended and Restated Revolving Credit and Term Loan Agreement (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement") entered into by the Company, Bank of America, N.A., acting through its Canada Branch, as global agent, the swing line lender and letter of credit issuer, Bank of America, N.A., as the U.S. Agent and a letter of credit issuer, the lenders (the "Lenders") and any other financial institutions from time to time party thereto. Entry into the Credit Agreement, among other things, extended the scheduled maturity of the relevant indebtedness and facilitated the release of each of our subsidiaries guaranteeing the obligations under the 2016 Credit Agreement. There are no subsidiary guarantors under the Credit Agreement. The Credit Agreement has a scheduled maturity date of March 21, 2023.

As of December 31, 2018, \$1.238 billion under the term loan and \$481.6 million under the revolving credit facility were outstanding under our Credit Agreement, exclusive of outstanding standby letters of credit of \$125.1 million.

On June 1, 2016, we also entered a Master Note Purchase Agreement (as supplemented by the First Supplement dated as of February 13, 2017 (the "2016 First Supplement") and as amended, restated, amended and restated, assumed, supplemented or modified from time to time, the "2016 NPA") with certain accredited institutional investors. We used proceeds from the sale of the New 2021 Senior Notes, 2023 Senior Notes, and the 2026 Senior Notes (defined below) to refinance existing indebtedness and for general corporate purposes.

On April 20, 2017, pursuant to the 2016 NPA, and the 2016 First Supplement, we issued and sold to certain accredited institutional investors \$400.0 million aggregate principal amount of senior unsecured notes consisting of \$150.0 million aggregate principal amount, which will mature on April 20, 2024, with an annual interest rate of 3.24% (the "2024 Senior Notes") and \$250.0 million aggregate principal amount, which will mature on April 20, 2027, with an annual interest rate of 3.49% (the "2027 Senior Notes" and collectively with the 2024 Senior Notes, the "2017A Senior Notes") in a private placement.

On March 21, 2018, we entered into that certain Amendment No. 1 to Master Note Purchase Agreement (the "2016 NPA First Amendment"), with each of the holders party thereto, which amended the 2016 NPA.

The 2016 NPA First Amendment, among other things, provided for certain amendments to the 2016 NPA to facilitate (i) certain conforming changes to align certain provisions of the 2016 NPA, the Assumed 2008 NPA (as defined below) and the Credit Agreement and (ii) the release of all subsidiary guarantors in relation to obligations under the 2016 NPA and the 2016 Senior Notes (as defined below) (the "2016 Release").

Pursuant to the terms and conditions of the 2016 NPA, we have outstanding senior unsecured notes (the "2016 Senior Notes") at December 31, 2018 consisting of (i) \$150.0 million of 2.39% senior notes due June 1, 2021 (the "New 2021 Senior Notes"), (ii) \$200.0 million of 2.75% senior notes due June 1, 2023 (the "2023 Senior Notes"), (iii) \$400.0 million of 3.03% senior notes due June 1, 2026 (the "2026 Senior Notes") and (iv) \$400.0 million of the 2017A Senior Notes.

The New 2021 Senior Notes, the 2023 Senior Notes, the 2026 Senior Notes and the 2017A Senior Notes bear interest at fixed rates with interest payable in arrears semi-annually, and on the respective maturity dates, until the principal thereunder becomes due and payable.

On June 1, 2016, prior to the closing of the Progressive Waste acquisition, Old Waste Connections, certain subsidiaries of Old Waste Connections (together with Old Waste Connections, the "Obligors") and certain holders of the 2008 Senior Notes (defined below) entered into that certain Amendment No. 6 to that certain Master Note Purchase Agreement, dated July 15, 2008 (as amended, restated, amended and restated, supplemented or otherwise modified prior to the Assumption Agreement (as defined below), the "2008 NPA"). Following the closing of the Progressive Waste acquisition, we entered into that certain Assumption and Exchange Agreement (as amended, restated, amended and restated, supplemented or modified from time to time, the "Assumption Agreement") with Old Waste Connections, to and in favor of the holders of the notes issued from time to time under the 2008 NPA (the 2008 NPA, as assumed and modified by the Assumption Agreement, and as further amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Assumed 2008 NPA").

On March 21, 2018, we entered into that certain Amendment No. 7 to the Assumed 2008 NPA (the "2008 NPA Seventh Amendment"), with each of the holders party thereto, which amended the Assumed 2008 NPA. The 2008 NPA Seventh Amendment, among other things, provides certain amendments to the Assumed 2008 NPA to facilitate (i) certain conforming changes to align the provisions of the Assumed 2008 NPA, the 2016 NPA and the Credit Agreement and (ii) the release of all subsidiary guarantors in relation to obligations under the Assumed 2008 NPA and the 2008 Senior Notes (the "2008 Release").

Pursuant to the terms and conditions of the Assumed 2008 NPA, we have outstanding senior unsecured notes (the "2008 Senior Notes") at December 31, 2018 consisting of \$175.0 million of 5.25% senior notes due 2019 (the "2019 Senior Notes"), \$100.0 million of 4.64% senior notes due 2021 (the "2021 Senior Notes"), \$125.0 million of 3.09% senior notes due 2022 (the "2022 Senior Notes") and \$375.0 million of 3.41% senior notes due 2025 (the "2025 Senior Notes"). We redeemed at maturity our \$50.0 million of 4.00% senior notes due April 2018 (the "2018 Senior Notes") on April 2, 2018.

On November 16, 2018, we completed an underwritten public offering of \$500.0 million aggregate principal amount of our 4.250% Senior Notes due 2028 (the "2028 Senior Notes"). The 2028 Senior Notes were issued under the Indenture, dated as of November 16, 2018 (the "Base Indenture"), by and between the Company and U.S. Bank National Association, as trustee (the "Trustee"), as supplemented by the First Supplemental Indenture, dated as of November 16, 2018 (the Base Indenture as so supplemented, the "Indenture").

We will pay interest on the 2028 Senior Notes semi-annually, commencing on June 1, 2019, and the 2028 Senior Notes will mature on December 1, 2028. The 2028 Senior Notes are our senior unsecured obligations, ranking equally in right of payment with our other existing and future unsubordinated debt and senior to any of our future subordinated debt. The 2028 Senior Notes are not guaranteed by any of our subsidiaries.

See Note 8 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K for further details on the debt agreements.

Contractual Obligations

As of December 31, 2018, we had the following contractual obligations:

Recorded Obligations	Payments Due by Period				
	(amounts in thousands of U.S. dollars)				
	Total	Less Than 1 Year	1 to 3 Years	3 to 5 Years	Over 5 Years
Long-term debt	\$ 4,174,693	\$ 1,786	\$ 256,473	\$ 2,221,221	\$ 1,695,213
Cash interest payments	771,991	133,305	265,967	199,059	173,660
Contingent consideration	75,507	13,020	19,950	7,072	35,465
Final capping, closure and post-closure	1,405,838	26,126	26,656	11,783	1,341,273

Long-term debt payments include:

- 1) \$481.6 million in principal payments due March 2023 related to our revolving credit facility under our Credit Agreement. Advances are available under the Credit Agreement in U.S. dollars and Canadian dollars and bear interest at fluctuating rates (See Note 8). At December 31, 2018, \$357.0 million of the outstanding borrowings drawn under the revolving credit facility were in U.S. LIBOR rate loans, bearing interest at a total rate of 3.62% on such date. At December 31, 2018, \$124.6 million of the outstanding borrowings drawn under the revolving credit facility were in Canadian-based bankers' acceptances, bearing interest at a total rate of 3.40% on such date.
- 2) \$1.238 billion in principal payments due March 2023 related to our term loan under our Credit Agreement. Outstanding amounts on the term loan can be either base rate loans or LIBOR loans. At December 31, 2018, all amounts outstanding under the term loan were in LIBOR loans which bear interest at the LIBOR rate plus the applicable margin (for a total rate of 3.62% on such date).
- 3) \$175.0 million in principal payments due 2019 related to our 2019 Senior Notes. The 2019 Senior Notes bear interest at a rate of 5.25%. We have recorded this obligation in the payments due in 3 to 5 years category in the table above as we have the intent and ability to redeem the 2019 Senior Notes on November 1, 2019 using borrowings under our Credit Agreement.
- 4) \$100.0 million in principal payments due 2021 related to our 2021 Senior Notes. The 2021 Senior Notes bear interest at a rate of 4.64%.
- 5) \$150.0 million in principal payments due 2021 related to our New 2021 Senior Notes. The New 2021 Senior Notes bear interest at a rate of 2.39%.
- 6) \$125.0 million in principal payments due 2022 related to our 2022 Senior Notes. The 2022 Senior Notes bear interest at a rate of 3.09%.
- 7) \$200.0 million in principal payments due 2023 related to our 2023 Senior Notes. The 2023 Senior Notes bear interest at a rate of 2.75%.
- 8) \$150.0 million in principal payments due 2024 related to our 2024 Senior Notes. The 2024 Senior Notes bear interest at a rate of 3.24%.
- 9) \$375.0 million in principal payments due 2025 related to our 2025 Senior Notes. The 2025 Senior Notes bear interest at a rate of 3.41%.
- 10) \$400.0 million in principal payments due 2026 related to our 2026 Senior Notes. The 2026 Senior Notes bear interest at a rate of 3.03%.
- 11) \$250.0 million in principal payments due 2027 related to our 2027 Senior Notes. The 2027 Senior Notes bear interest at a rate of 3.49%.
- 12) \$500.0 million in principal payments due 2028 related to our 2028 Senior Notes. The 2028 Senior Notes bear interest at a rate of 4.250%.
- 13) \$15.9 million in principal payments related to our tax-exempt bond, which bears interest at a variable rate (1.79% at December 31, 2018). The tax-exempt bond matures in 2033.
- 14) \$14.7 million in principal payments related to our notes payable to sellers and other third parties. Our notes payable to sellers and other third parties bear interest at rates between 2.75% and 24.81% at December 31, 2018, and have maturity dates ranging from 2019 to 2036.

The following assumptions were made in calculating cash interest payments:

- 1) We calculated cash interest payments on the Credit Agreement using the LIBOR rate plus the applicable LIBOR margin, the Canadian Dollar Offered Rate plus the applicable acceptance fee at December 31, 2018. We assumed the Credit Agreement is paid off when it matures in March 2023.
- 2) We calculated cash interest payments on our interest rate swaps using the stated interest rate in the swap agreement less the LIBOR rate through the earlier expiration of the term of the swaps or the term of the credit facility.

Contingent consideration payments include \$54.6 million recorded as liabilities in our consolidated financial statements at December 31, 2018, and \$20.9 million of future interest accretion on the recorded obligations.

The estimated final capping, closure and post-closure expenditures presented above are in current dollars.

	Amount of Commitment Expiration Per Period				
	(amounts in thousands of U.S. dollars)				
Unrecorded Obligations ⁽¹⁾	Total	Less Than 1 Year	1 to 3 Years	3 to 5 Years	Over 5 Years
Operating leases	\$ 258,426	\$ 37,902	\$ 67,463	\$ 58,856	\$ 94,205
Unconditional purchase obligations	96,397	66,774	29,623	-	-

- (1) We are party to operating lease agreements and unconditional purchase obligations as discussed in Note 10 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K. These lease agreements and purchase obligations are established in the ordinary course of our business and are designed to provide us with access to facilities and products at competitive, market-driven prices. At December 31, 2018, our unconditional purchase obligations consisted of multiple fixed-price fuel purchase contracts under which we have 37.0 million gallons remaining to be purchased for a total of \$96.4 million. The current fuel purchase contracts expire on or before February 28, 2021. These arrangements have not materially affected our financial position, results of operations or liquidity during the year ended December 31, 2018, nor are they expected to have a material impact on our future financial position, results of operations or liquidity.

We have obtained standby letters of credit as discussed in Note 8 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K and financial surety bonds as discussed in Note 10 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K. These standby letters of credit and financial surety bonds are generally obtained to support our financial assurance needs and landfill and E&P operations. These arrangements have not materially affected our financial position, results of operations or liquidity during the year ended December 31, 2018, nor are they expected to have a material impact on our future financial position, results of operations or liquidity.

From time to time, we evaluate our existing operations and their strategic importance to us. If we determine that a given operating unit does not have future strategic importance, we may sell or otherwise dispose of those operations. Although we believe our reporting units would not be impaired by such dispositions, we could incur losses on them.

New Accounting Pronouncements

See Note 1 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K for a description of the new accounting standards that are applicable to us.

Non-GAAP Financial Measures

Adjusted Free Cash Flow

We present adjusted free cash flow, a non-GAAP financial measure, supplementally because it is widely used by investors as a valuation and liquidity measure in the solid waste industry. Management uses adjusted free cash flow as one of the principal measures to evaluate and monitor the ongoing financial performance of our operations. We define adjusted free cash flow as net cash provided by operating activities, plus or minus change in book overdraft, plus proceeds from disposal of assets, plus excess tax benefit associated with equity-based compensation, less capital expenditures for property and equipment and distributions to noncontrolling interests. We further adjust this calculation to exclude the effects of items management believes impact the ability to assess the operating performance of our business. This measure is not a substitute for, and should be used in conjunction with, GAAP liquidity or financial measures. Other companies may calculate adjusted free cash flow differently. Our adjusted free cash flow for the years ended December 31, 2018, 2017 and 2016, are calculated as follows (amounts in thousands of U.S. dollars):

	Years Ended December 31,		
	2018	2017	2016
Net cash provided by operating activities	\$ 1,411,235	\$ 1,187,260	\$ 795,312
Plus (less): Change in book overdraft	(839)	8,241	(1,305)
Plus: Proceeds from disposal of assets	5,385	28,432	4,604
Plus: Excess tax benefit associated with equity-based compensation	-	-	5,196
Less: Capital expenditures for property and equipment	(546,145)	(479,287)	(344,723)
Less: Distributions to noncontrolling interests	(103)	-	(3)
Adjustments:			
Payment of contingent consideration recorded in earnings ^(a)	11	10,012	493
Cash received for divestitures ^(b)	(2,030)	(21,100)	-
Transaction-related items ^(c)	8,607	5,700	45,228
Integration-related and other expenses ^(d)	2,760	10,602	82,526
Pre-existing Progressive Waste share-based grants ^(e)	5,772	17,037	-
Synergy bonus ^(f)	-	11,798	-
Tax effect ^(g)	(4,752)	(14,804)	(36,384)
Adjusted free cash flow	\$ 879,901	\$ 763,891	\$ 550,944

- (a) Reflects the addback of acquisition-related payments for contingent consideration that were recorded as expenses in earnings and as a component of cash flows from operating activities as the amounts paid exceeded the fair value of the contingent consideration recorded at the acquisition date.
- (b) Reflects the elimination of cash received in conjunction with the divestiture of certain Progressive Waste operations.
- (c) Reflects the addback of acquisition-related items, including transaction costs, which for 2016 primarily related to the Progressive Waste acquisition.
- (d) Reflects the addback of integration-related items, including rebranding costs, associated with the Progressive Waste acquisition.
- (e) Reflects the cash settlement of pre-existing Progressive Waste share-based awards during the period.
- (f) Reflects the addback of cash bonuses paid pursuant to our Synergy Bonus Program in conjunction with the Progressive Waste acquisition.
- (g) The aggregate tax effect of footnotes (a) through (f) is calculated based on the applied tax rates for the respective periods.

Adjusted EBITDA

We present adjusted EBITDA, a non-GAAP financial measure, supplementally because it is widely used by investors as a performance and valuation measure in the solid waste industry. Management uses adjusted EBITDA as one of the principal measures to evaluate and monitor the ongoing financial performance of our operations. We define adjusted EBITDA as net income attributable to Waste Connections, plus net income attributable to noncontrolling interests, plus or minus income tax provision (benefit), plus interest expense, less interest income, plus depreciation and amortization expense, plus closure and post-closure accretion expense, plus or minus any loss or gain on impairments and other operating items, plus other expense, less other income, plus foreign currency transaction loss, less foreign currency transaction gain. We further adjust this calculation to exclude the effects of other items management believes impact the ability to assess the operating performance of our business. This measure is not a substitute for, and should be used in conjunction with, GAAP financial measures. Other companies may calculate adjusted EBITDA differently. Our adjusted EBITDA for the years ended December 31, 2018, 2017 and 2016, are calculated as follows (amounts in thousands of U.S. dollars):

	Years Ended December 31,		
	2018	2017	2016
Net income attributable to Waste Connections	\$ 546,871	\$ 576,817	\$ 246,540
Plus: Net income attributable to noncontrolling interests	283	603	781
Plus (less): Income tax provision (benefit)	159,986	(68,910)	114,044
Plus: Interest expense	132,104	125,297	92,709
Less: Interest income	(7,170)	(5,173)	(602)
Plus: Depreciation and amortization	680,487	632,484	463,912
Plus: Closure and post-closure accretion	12,997	11,781	8,936
Plus: Impairments and other operating items	20,118	156,493	27,678
Less: Other income, net	(1,263)	(3,736)	(53)
Plus (less): Foreign currency transaction loss (gain)	1,433	2,200	(1,121)
Adjustments:			
Plus: Transaction-related expenses ^(a)	8,607	5,700	47,842
Plus: Fair value changes to certain equity awards ^(b)	9,205	16,357	14,289
Plus: Integration-related and other expenses ^(c)	2,760	10,612	44,336
Plus: Synergy bonus ^(d)	-	-	11,798
Adjusted EBITDA	<u>\$ 1,566,418</u>	<u>\$ 1,460,525</u>	<u>\$ 1,071,089</u>

(a) Reflects the addback of acquisition-related transaction costs, which for 2016 primarily related to the Progressive Waste acquisition.

(b) Reflects fair value accounting changes associated with certain equity awards.

(c) Reflects the addback of integration-related items, including rebranding costs, associated with the Progressive Waste acquisition.

(d) Reflects the addback of bonuses accrued pursuant to our Synergy Bonus Program in connection with the Progressive Waste acquisition.

Adjusted Net Income and Adjusted Net Income per Diluted Share

We present adjusted net income attributable to Waste Connections and adjusted net income per diluted share attributable to Waste Connections, both non-GAAP financial measures, supplementally because they are widely used by investors as a valuation measure in the solid waste industry. Management uses adjusted net income attributable to Waste Connections and adjusted net income per diluted share attributable to Waste Connections as one of the principal measures to evaluate and monitor the ongoing financial performance of our operations. We provide adjusted net income attributable to Waste Connections to exclude the effects of items management believes impact the comparability of operating results between periods. Adjusted net income attributable to Waste Connections has limitations due to the fact that it excludes items that have an impact on our financial condition and results of operations. Adjusted net income attributable to Waste Connections and adjusted net income per diluted share attributable to Waste Connections are not a substitute for, and should be used in conjunction with, GAAP financial measures. Other companies may calculate these non-GAAP financial measures differently. Our adjusted net income attributable to Waste Connections and adjusted net income per diluted share attributable to Waste Connections for the years ended December 31, 2018, 2017 and 2016, are calculated as follows (amounts in thousands of U.S. dollars, except per share amounts):

	Years Ended December 31,		
	2018	2017	2016
Reported net income attributable to Waste Connections	\$ 546,871	\$ 576,817	\$ 246,540
Adjustments:			
Amortization of intangibles ^(a)	107,779	102,297	70,312
Impairments and other operating items ^(b)	20,118	156,493	27,678
Transaction-related expenses ^(c)	8,607	5,700	47,842
Fair value changes to certain equity awards ^(d)	9,205	16,357	14,289
Integration-related and other expenses ^(e)	2,760	10,612	44,336
Synergy bonus ^(f)	-	-	11,798
Tax effect ^(g)	(37,165)	(91,979)	(69,581)
Tax items ^(h)	9,093	(205,631)	1,964
Adjusted net income attributable to Waste Connections	<u>\$ 667,268</u>	<u>\$ 570,666</u>	<u>\$ 395,178</u>
Diluted earnings per common share attributable to Waste Connections' common shareholders:			
Reported net income	\$ 2.07	\$ 2.18	\$ 1.07
Adjusted net income	<u>\$ 2.52</u>	<u>\$ 2.16</u>	<u>\$ 1.71</u>

- (a) Reflects the elimination of the non-cash amortization of acquisition-related intangible assets.
- (b) Reflects the addback of impairments and other operating items.
- (c) Reflects the addback of acquisition-related transaction costs, which for 2016 primarily related to the Progressive Waste acquisition.
- (d) Reflects fair value accounting changes associated with certain equity awards.
- (e) Reflects the addback of integration-related items, including rebranding costs, associated with the Progressive Waste acquisition.
- (f) Reflects the addback of bonuses accrued pursuant to our Synergy Bonus Program in connection with the Progressive Waste acquisition.
- (g) The aggregate tax effect of the adjustments in footnotes (a) through (f) is calculated based on the applied tax rates for the respective periods.
- (h) In 2018, primarily reflects refinements to the estimates, as provided by Staff Accounting Bulletin No. 118, of the impact of a portion of our U.S. earnings no longer permanently reinvested in conjunction with the Tax Act. In 2017, reflects income tax benefit primarily resulting from a reduction of deferred tax liabilities due to enactment of the Tax Act, partially offset by deferred income tax expense due to a portion of our U.S. earnings no longer permanently reinvested, also related to the Tax Act. In 2016, reflects a change in the geographical apportionment of our deferred tax liabilities resulting from the Progressive Waste acquisition.

Inflation

Other than volatility in fuel prices, third party brokerage and labor costs in certain markets, inflation has not materially affected our operations in recent years. Consistent with industry practice, many of our contracts allow us to pass through certain costs to our customers, including increases in landfill tipping fees and, in some cases, fuel costs. Therefore, we believe that we should be able to increase prices to offset many cost increases that result from inflation in the ordinary course of business. However, competitive pressures or delays in the timing of rate increases under our contracts may require us to absorb at least part of these cost increases, especially if cost increases exceed the average rate of inflation. Management's estimates associated with inflation have an impact on our accounting for landfill liabilities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

In the normal course of business, we are exposed to market risk, including changes in interest rates and prices of certain commodities. We use hedge agreements to manage a portion of our risks related to interest rates and fuel prices. While we are exposed to credit risk in the event of non-performance by counterparties to our hedge agreements, in all cases such counterparties are highly rated financial institutions and we do not anticipate non-performance. We do not hold or issue derivative financial instruments for trading purposes. We monitor our hedge positions by regularly evaluating the positions at market and by performing sensitivity analyses over the unhedged fuel and variable rate debt positions.

At December 31, 2018, our derivative instruments included 17 interest rate swap agreements that effectively fix the interest rate on the applicable notional amounts of our variable rate debt as follows (dollars in thousands of U.S. dollars):

Date Entered	Notional Amount	Fixed Interest Rate Paid*	Variable Interest Rate Received	Effective Date	Expiration Date
April 2014	\$ 100,000	1.800%	1-month LIBOR	July 2014	July 2019
May 2014	\$ 50,000	2.344%	1-month LIBOR	October 2015	October 2020
May 2014	\$ 25,000	2.326%	1-month LIBOR	October 2015	October 2020
May 2014	\$ 50,000	2.350%	1-month LIBOR	October 2015	October 2020
May 2014	\$ 50,000	2.350%	1-month LIBOR	October 2015	October 2020
April 2016	\$ 100,000	1.000%	1-month LIBOR	February 2017	February 2020
June 2016	\$ 75,000	0.850%	1-month LIBOR	February 2017	February 2020
June 2016	\$ 150,000	0.950%	1-month LIBOR	January 2018	January 2021
June 2016	\$ 150,000	0.950%	1-month LIBOR	January 2018	January 2021
July 2016	\$ 50,000	0.900%	1-month LIBOR	January 2018	January 2021
July 2016	\$ 50,000	0.890%	1-month LIBOR	January 2018	January 2021
August 2017	\$ 100,000	1.900%	1-month LIBOR	July 2019	July 2022
August 2017	\$ 200,000	2.200%	1-month LIBOR	October 2020	October 2025
August 2017	\$ 150,000	1.950%	1-month LIBOR	February 2020	February 2023
June 2018	\$ 200,000	2.925%	1-month LIBOR	October 2020	October 2025
June 2018	\$ 200,000	2.925%	1-month LIBOR	October 2020	October 2025
December 2018	\$ 200,000	2.850%	1-month LIBOR	July 2022	July 2027

* Plus applicable margin.

Under derivatives and hedging guidance, the interest rate swap agreements are considered cash flow hedges for a portion of our variable rate debt, and we apply hedge accounting to account for these instruments. The notional amounts and all other significant terms of the swap agreements are matched to the provisions and terms of the variable rate debt being hedged.

We have performed sensitivity analyses to determine how market rate changes will affect the fair value of our unhedged floating rate debt. Such an analysis is inherently limited in that it reflects a singular, hypothetical set of assumptions. Actual market movements may vary significantly from our assumptions. Fair value sensitivity is not necessarily indicative of the ultimate cash flow or earnings effect we would recognize from the assumed market rate movements. We are exposed to cash flow risk due to changes in interest rates with respect to the unhedged floating rate balances owed at December 31, 2018 and 2017, of \$885.0 million and \$1.475 billion, respectively, including floating rate debt under our Credit Agreement and floating rate tax-exempt bond obligations. A one percentage point increase in interest rates on our variable-rate debt as of December 31, 2018 and 2017, would decrease our annual pre-tax income by approximately \$8.9 million and \$14.8 million, respectively. All of our remaining debt instruments are at fixed rates, or effectively fixed under the interest rate swap agreements described above; therefore, changes in market interest rates under these instruments would not significantly impact our cash flows or results of operations, subject to counterparty default risk.

The market price of diesel fuel is unpredictable and can fluctuate significantly. Because of the volume of fuel we purchase each year, a significant increase in the price of fuel could adversely affect our business and reduce our operating margins. To manage a portion of this risk, we periodically enter into fuel hedge agreements related to forecasted diesel fuel purchases, and we also enter into fixed price fuel purchase contracts. At December 31, 2018, we had no fuel hedge agreements in place; however, we have entered into fixed price fuel purchase contracts for 2019 as described below.

For the year ending December 31, 2019, we expect to purchase approximately 71.3 million gallons of fuel, of which 45.1 million gallons will be purchased at market prices and 26.2 million gallons will be purchased under our fixed price fuel purchase contracts. We have performed sensitivity analyses to determine how market rate changes will affect the fair value of our unhedged, market rate diesel fuel purchases. Such an analysis is inherently limited in that it reflects a singular, hypothetical set of assumptions. Actual market movements may vary significantly from our assumptions. Fair value sensitivity is not necessarily indicative of the ultimate cash flow or earnings effect we would recognize from the assumed market rate movements. With respect to the approximately 45.1 million gallons of unhedged fuel we expect to purchase in 2019 at market prices, a \$0.10 per gallon increase in the price of fuel over the year would decrease our pre-tax income during this period by approximately \$4.5 million.

We market a variety of recyclable materials, including cardboard, mixed paper, plastic containers, glass bottles and ferrous and aluminum metals. We own and operate recycling operations and sell other collected recyclable materials to third parties for processing before resale. To reduce our exposure to commodity price risk with respect to recycled materials, we have adopted a pricing strategy of charging collection and processing fees for recycling volume collected from third parties. In the event of a decline in recycled commodity prices, a 10% decrease in average recycled commodity prices from the average prices that were in effect during the year ended December 31, 2018 and 2017, would have had a \$8.9 million and \$15.3 million impact on revenues for the year ended December 31, 2018 and 2017, respectively.

We have operations in Canada and, where significant, we have quantified and described the impact of foreign currency translation on components of income, including operating revenue and operating costs. However, the impact of foreign currency has not materially affected our results of operations in 2017 or 2018. A \$0.01 change in the Canadian dollar to U.S. dollar exchange rate would impact our annual revenue and EBITDA by approximately \$9.8 million and \$3.6 million, respectively.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

WASTE CONNECTIONS, INC.

	Page
Reports of Independent Registered Public Accounting Firms	76
Consolidated Balance Sheets as of December 31, 2018 and 2017	79
Consolidated Statements of Net Income for the years ended December 31, 2018, 2017 and 2016	80
Consolidated Statements of Comprehensive Income for the years ended December 31, 2018, 2017 and 2016	81
Consolidated Statements of Equity for the years ended December 31, 2018, 2017 and 2016	82
Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016	84
Notes to Consolidated Financial Statements	86
Financial Statement Schedule	152

Report of Independent Registered Public Accounting Firm

Board of Directors and Shareholders
Waste Connections, Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of Waste Connections, Inc. (an Ontario, Canada corporation) and subsidiaries (the “Company”) as of December 31, 2018 and 2017, the related consolidated statements of net income, comprehensive income, equity, and cash flows for each of the two years in the period ended December 31, 2018, and the related notes and financial statement schedule included under Item 15(a) (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the Company’s internal control over financial reporting as of December 31, 2018, based on criteria established in the 2013 Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”), and our report dated February 14, 2019 expressed “an unqualified opinion”.

Basis for opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Adoption of New Accounting Guidance

As discussed in Note 1 to the consolidated financial statements, the Company adopted new accounting guidance on January 1, 2018 on a retrospective basis related to the presentation of cash, cash equivalents and amounts generally described as restricted cash or restricted cash equivalents in its consolidated statements of cash flows.

/s/ GRANT THORNTON LLP

We have served as the Company’s auditor since 2017.

Houston, TX
February 14, 2019

Report of Independent Registered Public Accounting Firm

Board of Directors and Shareholders
Waste Connections, Inc.

Opinion on internal control over financial reporting

We have audited the internal control over financial reporting of Waste Connections, Inc. (an Ontario, Canada corporation) and subsidiaries (the “Company”) as of December 31, 2018, based on criteria established in the 2013 Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in the 2013 Internal Control—Integrated Framework issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the consolidated financial statements of the Company as of and for the year ended December 31, 2018, and our report dated February 14, 2019 expressed an unqualified opinion on those financial statements.

Basis for opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and limitations of internal control over financial reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ GRANT THORNTON LLP

Houston, Texas
February 14, 2019

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of
Waste Connections, Inc.

In our opinion, the consolidated statements of net income, comprehensive income, equity and cash flows for the year ended December 31, 2016 present fairly, in all material respects, the results of operations and cash flows of Waste Connections, Inc. and its subsidiaries for the year ended December 31, 2016, in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule for the year ended December 31, 2016 presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audit. We conducted our audit of these financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

Houston, Texas

February 27, 2017, except for the effects of the share split and the change in composition of reportable segments discussed in Notes 11 and 14 to the consolidated financial statements, respectively, and the manner in which the Company accounts for deferred income taxes discussed in Note 1 (not presented herein) to the consolidated financial statements appearing under Item 8 of the Company's 2017 annual report on form 10-K, as to which the date is February 15, 2018 and except for the change in the manner in which the Company accounts for restricted cash discussed in Note 1 to the consolidated financial statements, as to which the date is February 14, 2019

WASTE CONNECTIONS, INC.
CONSOLIDATED BALANCE SHEETS
(IN THOUSANDS OF U.S. DOLLARS, EXCEPT SHARE AND PER SHARE AMOUNTS)

	December 31,	
	2018	2017
ASSETS		
Current assets:		
Cash and equivalents	\$ 319,305	\$ 433,815
Accounts receivable, net of allowance for doubtful accounts of \$16,760 and \$17,154 at December 31, 2018 and 2017, respectively	609,545	554,458
Current assets held for sale	-	1,596
Prepaid expenses and other current assets	164,053	186,999
Total current assets	<u>1,092,903</u>	<u>1,176,868</u>
Restricted cash	84,661	119,412
Restricted investments	47,486	47,600
Property and equipment, net	5,168,996	4,820,934
Goodwill	5,031,685	4,681,774
Intangible assets, net	1,128,628	1,087,436
Long-term assets held for sale	-	12,625
Other assets, net	72,970	68,032
	<u>\$ 12,627,329</u>	<u>\$ 12,014,681</u>
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 359,967	\$ 330,523
Book overdraft	18,518	19,223
Accrued liabilities	289,544	278,039
Deferred revenue	179,282	145,197
Current portion of contingent consideration	11,612	15,803
Current liabilities held for sale	-	2,155
Current portion of long-term debt and notes payable	1,786	11,659
Total current liabilities	<u>860,709</u>	<u>802,599</u>
Long-term debt and notes payable	4,153,465	3,899,572
Long-term portion of contingent consideration	43,003	31,482
Other long-term liabilities	349,931	316,191
Deferred income taxes	760,033	690,767
Total liabilities	<u>6,167,141</u>	<u>5,740,611</u>
Commitments and contingencies (Note 10)		
Equity:		
Common shares: 263,271,302 shares issued and 263,141,413 shares outstanding at December 31, 2018; 263,660,803 shares issued and 263,494,670 shares outstanding at December 31, 2017	4,131,307	4,187,568
Additional paid-in capital	133,577	115,743
Accumulated other comprehensive income (loss)	(74,786)	108,413
Treasury shares: 129,889 and 166,133 shares at December 31, 2018 and 2017, respectively	-	-
Retained earnings	2,264,510	1,856,946
Total Waste Connections' equity	<u>6,454,608</u>	<u>6,268,670</u>
Noncontrolling interest in subsidiaries	5,580	5,400
Total equity	<u>6,460,188</u>	<u>6,274,070</u>
	<u>\$ 12,627,329</u>	<u>\$ 12,014,681</u>

The accompanying notes are an integral part of these consolidated financial statements.

WASTE CONNECTIONS, INC.
CONSOLIDATED STATEMENTS OF NET INCOME
(IN THOUSANDS OF U.S. DOLLARS, EXCEPT SHARE AND PER SHARE AMOUNTS)

	Years Ended December 31,		
	2018	2017	2016
Revenues	\$ 4,922,941	\$ 4,630,488	\$ 3,375,863
Operating expenses:			
Cost of operations	2,865,704	2,704,775	1,957,712
Selling, general and administrative	524,388	509,638	474,263
Depreciation	572,708	530,187	393,600
Amortization of intangibles	107,779	102,297	70,312
Impairments and other operating items	20,118	156,493	27,678
Operating income	832,244	627,098	452,298
Interest expense	(132,104)	(125,297)	(92,709)
Interest income	7,170	5,173	602
Other income, net	1,263	3,736	53
Foreign currency transaction gain (loss)	(1,433)	(2,200)	1,121
Income before income tax provision	707,140	508,510	361,365
Income tax (provision) benefit	(159,986)	68,910	(114,044)
Net income	547,154	577,420	247,321
Less: Net income attributable to noncontrolling interests	(283)	(603)	(781)
Net income attributable to Waste Connections	\$ 546,871	\$ 576,817	\$ 246,540
Earnings per common share attributable to Waste Connections' common shareholders:			
Basic	\$ 2.07	\$ 2.19	\$ 1.07
Diluted	\$ 2.07	\$ 2.18	\$ 1.07
Shares used in the per share calculations:			
Basic	263,650,155	263,682,608	230,325,012
Diluted	264,395,618	264,302,411	231,081,496
Cash dividends per common share	\$ 0.58	\$ 0.50	\$ 0.41

The accompanying notes are an integral part of these consolidated financial statements.

WASTE CONNECTIONS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(IN THOUSANDS OF U.S. DOLLARS)

	Years Ended December 31,		
	2018	2017	2016
Net income	\$ 547,154	\$ 577,420	\$ 247,321
Other comprehensive income (loss), before tax:			
Interest rate swap amounts reclassified into interest expense	(5,669)	2,805	6,654
Fuel hedge amounts reclassified into cost of operations	(6,531)	2,818	5,832
Changes in fair value of interest rate swaps	(1,213)	7,835	11,431
Changes in fair value of fuel hedges	2,651	1,326	3,804
Foreign currency translation adjustment	(175,233)	142,486	(50,931)
Other comprehensive income (loss), before tax	(185,995)	157,270	(23,210)
Income tax (expense) benefit related to items of other comprehensive income (loss)	2,796	(5,856)	(7,620)
Other comprehensive income (loss), net of tax	(183,199)	151,414	(30,830)
Comprehensive income	363,955	728,834	216,491
Less: Comprehensive income attributable to noncontrolling interests	(283)	(603)	(781)
Comprehensive income attributable to Waste Connections	<u>\$ 363,672</u>	<u>\$ 728,231</u>	<u>\$ 215,710</u>

The accompanying notes are an integral part of these consolidated financial statements.

WASTE CONNECTIONS, INC.
CONSOLIDATED STATEMENTS OF EQUITY
YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018
(IN THOUSANDS OF U.S. DOLLARS, EXCEPT SHARE AMOUNTS)

	WASTE CONNECTIONS' EQUITY								
	COMMON SHARES		ADDITIONAL	ACCUMULATED	TREASURY SHARES		RETAINED	NONCONTROLLING	
	SHARES	AMOUNT	PAID-IN CAPITAL	OTHER COMPREHENSIVE INCOME (LOSS)	SHARES	AMOUNT	EARNINGS	INTERESTS	TOTAL
Balances at December 31, 2015	183,564,362	\$ 1,224	\$ 736,652	\$ (12,171)	-	\$ -	\$ 1,259,495	\$ 6,584	\$ 1,991,784
Conversion of Old Waste Connections' shares of common stock into common shares of New Waste Connections	-	650,552	(650,552)	-	-	-	-	-	-
Issuance of common shares to acquire Progressive Waste	78,218,878	3,503,162	-	-	-	-	-	-	3,503,162
Acquired common shares held in trust	-	-	-	-	735,171	-	-	-	-
Sale of common shares held in trust	397,774	19,870	-	-	(397,774)	-	-	-	19,870
Vesting of restricted share units	605,718	-	-	-	-	-	-	-	-
Vesting of performance-based restricted share units	184,440	-	-	-	-	-	-	-	-
Restricted share units released from deferred compensation plan	59,635	-	-	-	-	-	-	-	-
Tax withholdings related to net share settlements of equity-based compensation	(279,772)	-	(11,497)	-	-	-	-	-	(11,497)
Equity-based compensation	-	-	22,421	-	-	-	-	-	22,421
Exercise of warrants	52,236	-	-	-	-	-	-	-	-
Excess tax benefit associated with equity-based compensation	-	-	5,196	-	-	-	-	-	5,196
Cash dividends on common shares	-	-	-	-	-	-	(92,547)	-	(92,547)
Amounts reclassified into earnings, net of taxes	-	-	-	8,546	-	-	-	-	8,546
Changes in fair value of cash flow hedges, net of taxes	-	-	-	11,555	-	-	-	-	11,555
Foreign currency translation adjustment	-	-	-	(50,931)	-	-	-	-	(50,931)
Distributions to noncontrolling interests	-	-	-	-	-	-	-	(3)	(3)
Net income	-	-	-	-	-	-	246,540	781	247,321
Balances at December 31, 2016	262,803,271	4,174,808	102,220	(43,001)	337,397	-	1,413,488	7,362	5,654,877
Sale of common shares held in trust	171,264	10,814	-	-	(171,264)	-	-	-	10,814
Vesting of restricted share units	545,238	-	-	-	-	-	-	-	-
Vesting of performance-based restricted share units	122,786	-	-	-	-	-	-	-	-
Restricted share units released from deferred compensation plan	37,263	-	-	-	-	-	-	-	-
Tax withholdings related to net share settlements of equity-based compensation	(251,738)	-	(13,994)	-	-	-	-	-	(13,994)
Equity-based compensation	-	-	25,435	-	-	-	-	-	25,435
Exercise of options and warrants	66,586	1,946	-	-	-	-	-	-	1,946
Cash dividends on common shares	-	-	-	-	-	-	(131,975)	-	(131,975)
Amounts reclassified into earnings, net of taxes	-	-	-	4,174	-	-	-	-	4,174
Changes in fair value of cash flow hedges, net of taxes	-	-	-	4,754	-	-	-	-	4,754
Foreign currency translation adjustment	-	-	-	142,486	-	-	-	-	142,486

Cumulative effect adjustment from adoption of new accounting pronouncement	-	-	1,384	-	-	-	(1,384)	-	-
Acquisition of noncontrolling interest	-	-	698	-	-	-	-	(2,565)	(1,867)
Net income	-	-	-	-	-	-	576,817	603	577,420
Balances at December 31, 2017	263,494,670	\$4,187,568	\$ 115,743	\$ 108,413	166,133	\$ -	\$ 1,856,946	\$ 5,400	\$6,274,070

The accompanying notes are an integral part of these consolidated financial statements.

WASTE CONNECTIONS, INC.
CONSOLIDATED STATEMENTS OF EQUITY
YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018
(IN THOUSANDS OF U.S. DOLLARS, EXCEPT SHARE AMOUNTS)

	WASTE CONNECTIONS' EQUITY								
	COMMON SHARES		ADDITIONAL PAID-IN CAPITAL	ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)	TREASURY SHARES		RETAINED EARNINGS	NONCONTROLLING INTERESTS	TOTAL
	SHARES	AMOUNT			SHARES	AMOUNT			
Balances at December 31, 2017	263,494,670	\$ 4,187,568	\$ 115,743	\$ 108,413	166,133	\$ -	\$ 1,856,946	\$ 5,400	\$ 6,274,070
Sale of common shares held in trust	36,244	2,667	-	-	(36,244)	-	-	-	2,667
Vesting of restricted share units	483,232	-	-	-	-	-	-	-	-
Vesting of performance-based restricted share units	154,181	-	-	-	-	-	-	-	-
Restricted share units released from deferred compensation plan	5,069	-	-	-	-	-	-	-	-
Fair value adjustment for common shares in deferred compensation plan exchanged for other investment options	-	-	(1,734)	-	-	-	-	-	(1,734)
Tax withholdings related to net share settlements of equity-based compensation	(217,850)	-	(15,032)	-	-	-	-	-	(15,032)
Equity-based compensation	-	-	34,600	-	-	-	-	-	34,600
Exercise of warrants	17,571	-	-	-	-	-	-	-	-
Repurchase of common shares	(831,704)	(58,928)	-	-	-	-	-	-	(58,928)
Cash dividends on common shares	-	-	-	-	-	-	(152,550)	-	(152,550)
Amounts reclassified into earnings, net of taxes	-	-	-	(9,071)	-	-	-	-	(9,071)
Changes in fair value of cash flow hedges, net of taxes	-	-	-	1,105	-	-	-	-	1,105
Foreign currency translation adjustment	-	-	-	(175,233)	-	-	-	-	(175,233)
Cumulative effect adjustment from adoption of new accounting pronouncement	-	-	-	-	-	-	13,243	-	13,243
Distributions to noncontrolling interests	-	-	-	-	-	-	-	(103)	(103)
Net income	-	-	-	-	-	-	546,871	283	547,154
Balances at December 31, 2018	<u>263,141,413</u>	<u>\$ 4,131,307</u>	<u>\$ 133,577</u>	<u>\$ (74,786)</u>	<u>129,889</u>	<u>\$ -</u>	<u>\$ 2,264,510</u>	<u>\$ 5,580</u>	<u>\$ 6,460,188</u>

The accompanying notes are an integral part of these consolidated financial statements.

WASTE CONNECTIONS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(IN THOUSANDS OF U.S. DOLLARS)

	Years Ended December 31,		
	2018	2017	2016
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	\$ 547,154	\$ 577,420	\$ 247,321
Adjustments to reconcile net income to net cash provided by operating activities:			
Loss on disposal of assets and impairments	10,193	134,491	26,741
Depreciation	572,708	530,187	393,600
Amortization of intangibles	107,779	102,297	70,312
Deferred income taxes, net of acquisitions	77,859	(153,283)	42,298
Amortization of debt issuance costs	4,158	4,341	4,847
Share-based compensation	43,803	39,361	44,772
Interest accretion	14,861	13,822	10,505
Excess tax benefit associated with equity-based compensation	-	-	(5,196)
Payment of contingent consideration recorded in earnings	(11)	(10,012)	(493)
Adjustments to contingent consideration	349	17,754	(2,623)
Other	943	1,611	(1,598)
Changes in operating assets and liabilities, net of effects from acquisitions:			
Accounts receivable, net	(37,724)	(38,934)	(5,252)
Prepaid expenses and other current assets	39,758	(51,457)	(21,650)
Accounts payable	16,135	50,012	54,219
Deferred revenue	17,916	4,205	8,016
Accrued liabilities	1,314	(15,002)	(70,041)
Capping, closure and post-closure expenditures	(2,702)	(8,845)	(4,609)
Other long-term liabilities	(3,258)	(10,708)	4,143
Net cash provided by operating activities	<u>1,411,235</u>	<u>1,187,260</u>	<u>795,312</u>
CASH FLOWS FROM INVESTING ACTIVITIES:			
Payments for acquisitions, net of cash acquired	(830,091)	(410,695)	(17,131)
Cash and restricted cash acquired in the Progressive Waste acquisition	-	-	70,769
Capital expenditures for property and equipment	(546,145)	(479,287)	(344,723)
Proceeds from disposal of assets	5,385	28,432	4,604
Other	(969)	636	(6,100)
Net cash used in investing activities	<u>(1,371,820)</u>	<u>(860,914)</u>	<u>(292,581)</u>
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from long-term debt	1,022,737	973,754	3,469,289
Principal payments on notes payable and long-term debt	(970,773)	(770,106)	(3,714,044)
Payment of contingent consideration recorded at acquisition date	(6,127)	(17,158)	(16,322)
Change in book overdraft	(839)	8,241	(1,305)
Excess tax benefit associated with equity-based compensation	-	-	5,196
Payments for repurchase of common shares	(58,928)	-	-
Payments for cash dividends	(152,550)	(131,975)	(92,547)
Tax withholdings related to net share settlements of equity-based compensation	(15,032)	(13,994)	(11,497)
Debt issuance costs	(8,630)	(3,667)	(13,506)
Proceeds from sale of common shares held in trust	2,667	10,814	19,870
Other	(103)	851	(3)
Net cash provided by (used in) financing activities	<u>(187,578)</u>	<u>56,760</u>	<u>(354,869)</u>
Effect of exchange rate changes on cash, cash equivalents and restricted cash	<u>(1,290)</u>	<u>1,795</u>	<u>(598)</u>
Net increase (decrease) in cash, cash equivalents and restricted cash	(149,453)	384,901	147,264
Cash, cash equivalents and restricted cash at beginning of year	553,227	168,476	21,254
Plus (less): change in cash held for sale	192	(150)	(42)
Cash, cash equivalents and restricted cash at end of year	<u>\$ 403,966</u>	<u>\$ 553,227</u>	<u>\$ 168,476</u>

The accompanying notes are an integral part of these consolidated financial statements.

WASTE CONNECTIONS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(IN THOUSANDS OF U.S. DOLLARS)

SUPPLEMENTARY DISCLOSURES OF CASH FLOW INFORMATION AND NON-CASH TRANSACTIONS:

	Years Ended December 31,		
	2018	2017	2016
Cash paid for income taxes	\$ 52,464	\$ 155,532	\$ 69,589
Cash paid for interest	\$ 124,338	\$ 115,645	\$ 87,654
Accrued capital expenditures for property and equipment	\$ 1,825	\$ 10,447	\$ 24,871
In connection with its acquisitions, the Company assumed liabilities as follows:			
Fair value of assets acquired	\$ 1,100,880	\$ 635,361	\$ 6,018,666
Cash and restricted cash acquired	-	-	70,769
Fair value of operations exchanged	-	(81,097)	-
Cash paid and common shares issued for acquisition	(830,091)	(410,695)	(3,520,293)
Working capital settlements receivable	8,507	-	-
Liabilities assumed and notes payable issued to sellers of businesses acquired	\$ 279,296	\$ 143,569	\$ 2,569,142
Non-cash consideration received for asset sales	\$ -	\$ 12,573	\$ -

The accompanying notes are an integral part of these consolidated financial statements.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

1. ORGANIZATION, BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization and Business

On June 1, 2016, pursuant to the terms of the Agreement and Plan of Merger dated as of January 18, 2016 (the “Merger Agreement”), Water Merger Sub LLC (“Merger Sub”), a Delaware limited liability company and a wholly-owned subsidiary of Progressive Waste Solutions Ltd., merged with and into Waste Connections US, Inc. (f/k/a Waste Connections, Inc.), a Delaware corporation (“Old Waste Connections”) with Old Waste Connections continuing as the surviving corporation and an indirect wholly-owned subsidiary of Waste Connections, Inc. (f/k/a Progressive Waste Solutions Ltd.), a corporation organized under the laws of Ontario, Canada (the “Progressive Waste acquisition”). Following the closing of the transaction, Old Waste Connections’ common stock was delisted from the New York Stock Exchange (“NYSE”) and deregistered under the U.S. Securities Exchange Act of 1934, as amended (the “Exchange Act”). Pursuant to the Merger Agreement, Old Waste Connections’ stockholders received common shares of Waste Connections, Inc. (f/k/a Progressive Waste Solutions Ltd.) in exchange for their shares of common stock of Old Waste Connections.

Old Waste Connections was incorporated in Delaware on September 9, 1997, and commenced its operations on October 1, 1997, through the purchase of certain solid waste operations in the state of Washington. The Company (as defined below) is an integrated solid waste services company that provides non-hazardous waste collection, transfer, disposal and recycling services in mostly exclusive and secondary markets in the U.S. and Canada. Through its R360 Environmental Solutions subsidiary, the Company is also a leading provider of non-hazardous exploration and production (“E&P”) waste treatment, recovery and disposal services in several of the most active natural resource producing areas in the U.S. The Company also provides intermodal services for the rail haul movement of cargo and solid waste containers in the Pacific Northwest through a network of intermodal facilities.

Basis of Presentation

As further discussed in Note 3 – “Acquisitions,” the Progressive Waste acquisition was accounted for as a reverse merger using the acquisition method of accounting. Old Waste Connections has been identified as the acquirer for accounting purposes and the acquisition method of accounting has been applied. The term “Progressive Waste” is used herein in the context of references to Progressive Waste Solutions Ltd. and its shareholders prior to the completion of the Progressive Waste acquisition on June 1, 2016.

The accompanying consolidated financial statements relating to Waste Connections, Inc. (together with its subsidiaries, “New Waste Connections,” “Waste Connections” or the “Company”) include the accounts of the Company and its wholly-owned and majority-owned subsidiaries for the years ended December 31, 2018 and 2017. The accompanying consolidated financial statements of the Company are the historical financial statements of Old Waste Connections, together with its subsidiaries, for the year ended December 31, 2016, with the inclusion on June 1, 2016 of the fair value of the assets and liabilities acquired from Progressive Waste and the inclusion of the results of operations from the acquired Progressive Waste operations commencing on June 1, 2016. All significant intercompany accounts and transactions have been eliminated in consolidation.

Reporting Currency

The functional currency of the Company, as the parent corporate entity, and its operating subsidiaries in the United States, is the U.S. dollar. The functional currency of the Company’s Canadian operations is the Canadian dollar. The reporting currency of the Company is the U.S. dollar. The Company’s consolidated Canadian dollar financial position is translated to U.S. dollars by applying the foreign currency exchange rate in effect at the consolidated balance sheet date. The Company’s consolidated Canadian dollar results of operations and cash flows are translated to U.S. dollars by applying the average foreign currency exchange rate in effect during the reporting period. The resulting translation adjustments are included in other comprehensive income or loss. Gains and losses from foreign currency transactions are included in earnings for the period.

Cash Equivalents

The Company considers all highly liquid investments with a maturity of three months or less at purchase to be cash equivalents. As of December 31, 2018 and 2017, cash equivalents consisted of demand money market accounts.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash and equivalents, restricted cash, restricted investments and accounts receivable. The Company maintains cash and equivalents with banks that at times exceed applicable insurance limits. The Company reduces its exposure to credit risk by maintaining such deposits with high quality financial institutions. The Company's restricted cash and restricted investments are invested primarily in money market accounts, bank time deposits, U.S. government and agency securities and Canadian bankers' acceptance notes. The Company has not experienced any losses related to its cash and equivalents, restricted cash or restricted investment accounts. The Company generally does not require collateral on its trade receivables. Credit risk on accounts receivable is minimized as a result of the large and diverse nature of the Company's customer base. The Company maintains allowances for losses based on the expected collectability of accounts receivable.

Revenue Recognition and Accounts Receivable

The Company's operations primarily consist of providing non-hazardous waste collection, transfer, disposal and recycling services, non-hazardous exploration and production ("E&P") waste treatment, recovery and disposal services and intermodal services. The following table disaggregates the Company's revenues by service line for the periods indicated:

	Years Ended December 31,		
	2018	2017	2016
Commercial	\$ 1,452,831	\$ 1,343,590	\$ 969,619
Residential	1,189,148	1,130,842	874,228
Industrial and construction roll off	768,687	707,015	515,966
Total collection	3,410,666	3,181,447	2,359,813
Landfill	1,063,243	988,092	759,586
Transfer	670,129	589,883	395,824
Recycling	92,634	161,730	92,456
E&P	256,262	203,473	132,286
Intermodal and other	139,896	146,749	106,363
Intercompany	(709,889)	(640,886)	(470,465)
Total	<u>\$ 4,922,941</u>	<u>\$ 4,630,488</u>	<u>\$ 3,375,863</u>

The factors that impact the timing and amount of revenue recognized for each service line may vary based on the nature of the service performed. Generally, the Company recognizes revenue at the time it performs a service. In the event that the Company bills for services in advance of performance, it recognizes deferred revenue for the amount billed and subsequently recognizes revenue at the time the service is provided.

See Note 14 for additional information regarding revenue by reportable segment.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Revenue by Service Line

Solid Waste Collection

The Company's solid waste collection business involves the collection of waste from residential, commercial and industrial customers for transport to transfer stations, or directly to landfills or recycling centers. Solid waste collection services include both recurring and temporary customer relationships. The services are performed under service agreements, municipal contracts or franchise agreements with governmental entities. Existing franchise agreements and most of the existing municipal contracts give the Company the exclusive right to provide specified waste services in the specified territory during the contract term. These exclusive arrangements are awarded, at least initially, on a competitive bid basis and subsequently on a bid or negotiated basis. The standard customer service agreements generally range from one to three years in duration, although some exclusive franchises are for significantly longer periods. Residential collection services are also provided on a subscription basis with individual households. The fees received for collection services are based primarily on the market, collection frequency and level of service, route density, type and volume or weight of the waste collected, type of equipment and containers furnished, the distance to the disposal or processing facility, the cost of disposal or processing, and prices charged by competitors for similar services.

In general, residential collection fees are billed monthly or quarterly in advance. Substantially all of the deferred revenue recognized as of September 30, 2018 was recognized as revenue during the three months ended December 31, 2018 when the service was performed. Commercial customers are typically billed on a monthly basis based on the nature of the services provided during the period. Revenue recognized under these agreements is variable in nature based on the number of residential homes or businesses serviced during the period, the frequency of collection and the volume of waste collected. In addition, certain contracts have annual price escalation clauses that are tied to changes in an underlying base index such as a consumer price index which are unknown at contract inception.

Solid waste collection revenue from sources other than customer contracts primarily relates to lease revenue associated with compactors. Revenue from these leasing arrangements was not material and represented an insignificant amount of total revenue for each of the reported periods.

Landfill and Transfer Station

Revenue at landfills is primarily generated by charging tipping fees on a per ton and/or per yard basis to third parties based on the volume disposed and the nature of the waste. In general, fees are variable in nature and revenue is recognized at the time the waste is disposed at the facility.

Revenue at transfer stations is primarily generated by charging tipping or disposal fees on a per ton and/or per yard basis. The fees charged to third parties are based primarily on the market, type and volume or weight of the waste accepted, the distance to the disposal facility and the cost of disposal. In general, fees are billed and revenue is recognized at the time the service is performed. Revenue recognized under these agreements is variable in nature based on the volume of waste accepted at the transfer facility.

Many of the Company's landfill and transfer station customers have entered into one to ten year disposal contracts, most of which provide for annual indexed price increases.

Solid Waste Recycling

Solid waste recycling revenues are generated by offering residential, commercial, industrial and municipal customers recycling services for a variety of recyclable materials, including compost, cardboard, mixed paper, plastic containers, glass bottles and ferrous and aluminum metals. The Company owns recycling operations and markets collected recyclable materials to third parties for processing before resale. In certain instances, the Company issues recycling rebates to municipal or commercial customers, which can be based on the price it receives upon the sale of recycled commodities, a fixed contractual rate or other measures. The Company also receives rebates when it disposes of recycled commodities at third-party facilities. The fees received are based primarily on the market, type and volume or weight of the materials sold. In general, fees are billed and revenue is recognized at the time title is transferred. Revenue recognized under these agreements is variable in nature based on the volume of materials sold. In addition, the amount of revenue recognized is based on commodity prices at the time of sale, which are unknown at contract inception.

E&P Waste Treatment, Recovery and Disposal

E&P revenue is primarily generated through the treatment, recovery and disposal of non-hazardous exploration and production waste from vertical and horizontal drilling, hydraulic fracturing, production and clean-up activity, as well as other services including closed loop collection systems, the transportation of waste to the disposal facility in certain markets and the sale of recovered products. E&P activity varies across market areas that are tied to the natural resource basins in which the drilling activity occurs and reflects the regulatory environment, pricing and disposal alternatives available in any given market. Revenue recognized under these agreements is variable in nature based on the volume of waste accepted or processed during the period.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Intermodal and Other

Intermodal revenue is primarily generated through providing intermodal services for the rail haul movement of cargo and solid waste containers in the Pacific Northwest through a network of intermodal facilities. The fees received for intermodal services are based on negotiated rates and vary depending on volume commitments by the shipper and destination. In general, fees are billed and revenue is recognized upon delivery.

Other revenues consist primarily of the sale of methane gas generated from the Company's MSW landfills.

Revenue Recognition

Service obligations of a long-term nature, e.g., solid waste collection service contracts, are satisfied over time, and revenue is recognized based on the value provided to the customer during the period. The amount billed to the customer is based on variable elements such as the number of residential homes or businesses for which collection services are provided, the volume of waste collected, transported and disposed, and the nature of the waste accepted. The Company does not disclose the value of unsatisfied performance obligations for these contracts as its right to consideration corresponds directly to the value provided to the customer for services completed to date and all future variable consideration is allocated to wholly unsatisfied performance obligations.

Additionally, certain elements of long-term customer contracts are unknown upon entering into the contract, including the amount that will be billed in accordance with annual price escalation clauses, fuel recovery fee programs and commodity prices. The amount to be billed is often tied to changes in an underlying base index such as a consumer price index or a fuel or commodity index, and revenue is recognized once the index is established for the period.

Accounts Receivable

Accounts receivable are recorded when billed or accrued and represent claims against third parties that will be settled in cash. The carrying value of the Company's receivables, net of the allowance for doubtful accounts, represents their estimated net realizable value. The Company estimates its allowance for doubtful accounts based on historical collection trends, type of customer such as municipal or non-municipal, the age of outstanding receivables and existing economic conditions. If events or changes in circumstances indicate that specific receivable balances may be impaired, further consideration is given to the collectability of those balances and the allowance is adjusted accordingly. Past-due receivable balances are written off when the Company's internal collection efforts have been unsuccessful in collecting the amount due.

Contract Acquisition Costs

The incremental direct costs of obtaining a contract, which consist of sales incentives, are recognized as Other assets in the Company's Consolidated Balance Sheet, and are amortized to Selling, general and administrative expense over the estimated life of the relevant customer relationship, which ranges from one to five years. The Company applied the new revenue standard's practical expedient that permits an entity to recognize the incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset that the entity would have recognized is one year or less. As of December 31, 2018, the Company had \$16,846 of deferred sales incentives. During the year ended December 31, 2018, the Company recorded amortization expense of \$17,313 for sales incentive costs.

Property and Equipment

Property and equipment are stated at cost. Improvements or betterments, not considered to be maintenance and repair, which add new functionality or significantly extend the life of an asset are capitalized. Third-party expenditures related to pending development projects, such as legal and engineering expenses, are capitalized. Expenditures for maintenance and repair costs, including planned major maintenance activities, are charged to expense as incurred. The cost of assets retired or otherwise disposed of and the related accumulated depreciation are eliminated from the accounts in the year of disposal. Gains and losses resulting from disposals of property and equipment are recognized in the period in which the property and equipment is disposed. Depreciation is computed using the straight-line method over the estimated useful lives of the assets or the lease term, whichever is shorter.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The estimated useful lives are as follows:

Buildings	10 – 20 years
Leasehold and land improvements	3 – 10 years
Machinery and equipment	3 – 12 years
Rolling stock	3 – 10 years
Containers	5 – 12 years

Landfill Accounting

The Company utilizes the life cycle method of accounting for landfill costs. This method applies the costs to be capitalized associated with acquiring, developing, closing and monitoring the landfills over the associated consumption of landfill capacity. The Company utilizes the units of consumption method to amortize landfill development costs over the estimated remaining capacity of a landfill. Under this method, the Company includes future estimated construction costs using current dollars, as well as costs incurred to date, in the amortization base. When certain criteria are met, the Company includes expansion airspace, which has not been permitted, in the calculation of the total remaining capacity of the landfill.

- **Landfill development costs.** Landfill development costs include the costs of acquisition, construction associated with excavation, liners, site berms, groundwater monitoring wells, gas recovery systems and leachate collection systems. The Company estimates the total costs associated with developing each landfill site to its final capacity. This includes certain projected landfill site costs that are uncertain because they are dependent on future events and thus actual costs could vary significantly from estimates. The total cost to develop a site to its final capacity includes amounts previously expended and capitalized, net of accumulated depletion, and projections of future purchase and development costs, liner construction costs, and operating construction costs. Total landfill costs include the development costs associated with expansion airspace. Expansion airspace is addressed below.
- **Final capping, closure and post-closure obligations.** The Company accrues for estimated final capping, closure and post-closure maintenance obligations at the landfills it owns and the landfills that it operates, but does not own, under life-of-site agreements. Accrued final capping, closure and post-closure costs represent an estimate of the current value of the future obligation associated with final capping, closure and post-closure monitoring of non-hazardous solid waste landfills currently owned or operated under life-of-site agreements by the Company. Final capping costs represent the costs related to installation of clay liners, drainage and compacted soil layers and topsoil constructed over areas of the landfill where total airspace capacity has been consumed. Closure and post-closure monitoring and maintenance costs represent the costs related to cash expenditures yet to be incurred when a landfill facility ceases to accept waste and closes. Accruals for final capping, closure and post-closure monitoring and maintenance requirements in the U.S. consider site inspection, groundwater monitoring, leachate management, methane gas control and recovery, and operating and maintenance costs to be incurred during the period after the facility closes. Certain of these environmental costs, principally capping and methane gas control costs, are also incurred during the operating life of the site in accordance with the landfill operation requirements of Subtitle D and the air emissions standards. Daily maintenance activities, which include many of these costs, are expensed as incurred during the operating life of the landfill. Daily maintenance activities include leachate disposal; surface water, groundwater, and methane gas monitoring and maintenance; other pollution control activities; mowing and fertilizing the landfill final cap; fence and road maintenance; and third-party inspection and reporting costs. Site specific final capping, closure and post-closure engineering cost estimates are prepared annually for landfills owned or landfills operated under life-of-site agreements by the Company.

The net present value of landfill final capping, closure and post-closure liabilities are calculated by estimating the total obligation in current dollars, inflating the obligation based upon the expected date of the expenditure and discounting the inflated total to its present value using a credit-adjusted risk-free rate. Any changes in expectations that result in an upward revision to the estimated undiscounted cash flows are treated as a new liability and are inflated and discounted at rates reflecting current market conditions. Any changes in expectations that result in a downward revision (or no revision) to the estimated undiscounted cash flows result in a liability that is inflated and discounted at rates reflecting the market conditions at the time the cash flows were originally estimated. This policy results in the Company's final capping, closure and post-closure liabilities being recorded in "layers." The Company's discount rate assumption for purposes of computing 2018 and 2017 "layers" for final capping, closure and post-closure obligations was 4.75% for both years, which reflects the Company's long-term credit adjusted risk free rate as of the end of both 2017 and 2016. The Company's inflation rate assumption was 2.5% for the years ended December 31, 2018 and 2017.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

In accordance with the accounting guidance on asset retirement obligations, the final capping, closure and post-closure liability is recorded on the balance sheet along with an offsetting addition to site costs which is amortized to depletion expense on a units-of-consumption basis as remaining landfill airspace is consumed. The impact of changes determined to be changes in estimates, based on an annual update, is accounted for on a prospective basis. Depletion expense resulting from final capping, closure and post-closure obligations recorded as a component of landfill site costs will generally be less during the early portion of a landfill's operating life and increase thereafter. Owned landfills and landfills operated under life-of-site agreements have estimated remaining lives, based on remaining permitted capacity, probable expansion capacity and projected annual disposal volumes, that range from approximately 1 to 157 years, with an average remaining life of approximately 29 years. The costs for final capping, closure and post-closure obligations at landfills the Company owns or operates under life-of-site agreements are generally estimated based on interpretations of current requirements and proposed or anticipated regulatory changes.

The following is a reconciliation of the Company's final capping, closure and post-closure liability balance from December 31, 2016 to December 31, 2018:

Final capping, closure and post-closure liability at December 31, 2016	\$ 244,909
Adjustments to final capping, closure and post-closure liabilities	(26,393)
Liabilities incurred	14,598
Accretion expense associated with landfill obligations	11,673
Closure payments	(8,845)
Foreign currency translation adjustment	1,875
Final capping, closure and post-closure liability at December 31, 2017	237,817
Adjustments to final capping, closure and post-closure liabilities	(13,045)
Liabilities incurred	15,685
Accretion expense associated with landfill obligations	12,777
Closure payments	(2,731)
Assumption of closure liabilities from acquisitions	4,408
Foreign currency translation adjustment	(3,129)
Final capping, closure and post-closure liability at December 31, 2018	<u>\$ 251,782</u>

Liabilities incurred of \$15,685 and \$14,598 for the years ended December 31, 2018 and 2017, respectively, represent non-cash increases to final capping, closure and post-closure liabilities. The Adjustment to final capping, closure and post-closure liabilities primarily consisted of decreases in estimated closure and post closure costs at several of the Company's landfills, most notably its Chiquita Canyon landfill, and changes to engineering estimates related to proposed expansions as well as timing of closure events and total site capacity. The final capping, closure and post-closure liability is included in Other long-term liabilities in the Consolidated Balance Sheets. The Company performs its annual review of its cost and capacity estimates in the first quarter of each year.

At December 31, 2018 and 2017, \$12,325 and \$10,121, respectively, of the Company's restricted cash balance and \$44,939 and \$45,969, respectively, of the Company's restricted investments balance was for purposes of securing its performance of future final capping, closure and post-closure obligations.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

- **Disposal capacity.** The Company's internal and third-party engineers perform surveys at least annually to estimate the remaining disposal capacity at its landfills. This is done by using surveys and other methods to calculate, based on the terms of the permit, height restrictions and other factors, how much airspace is left to fill and how much waste can be disposed of at a landfill before it has reached its final capacity. The Company's landfill depletion rates are based on the remaining disposal capacity, considering both permitted and probable expansion airspace, at the landfills it owns, and landfills it operates, but does not own, under life-of-site agreements. The Company's landfill depletion rate is based on the term of the operating agreement at its operated landfill that has capitalized expenditures. Expansion airspace consists of additional disposal capacity being pursued through means of an expansion that has not yet been permitted. Expansion airspace that meets the following criteria is included in the estimate of total landfill airspace:
 - 1) whether the land where the expansion is being sought is contiguous to the current disposal site, and the Company either owns the expansion property or has rights to it under an option, purchase, operating or other similar agreement;
 - 2) whether total development costs, final capping costs, and closure/post-closure costs have been determined;
 - 3) whether internal personnel have performed a financial analysis of the proposed expansion site and have determined that it has a positive financial and operational impact;
 - 4) whether internal personnel or external consultants are actively working to obtain the necessary approvals to obtain the landfill expansion permit; and
 - 5) whether the Company considers it probable that the Company will achieve the expansion (for a pursued expansion to be considered probable, there must be no significant known technical, legal, community, business, or political restrictions or similar issues existing that the Company believes are more likely than not to impair the success of the expansion).

It is possible that the Company's estimates or assumptions could ultimately be significantly different from actual results. In some cases, the Company may be unsuccessful in obtaining an expansion permit or the Company may determine that an expansion permit that the Company previously thought was probable has become unlikely. To the extent that such estimates, or the assumptions used to make those estimates, prove to be significantly different than actual results, or the belief that the Company will receive an expansion permit changes adversely in a significant manner, the costs of the landfill, including the costs incurred in the pursuit of the expansion, may be subject to impairment testing, as described below, and lower profitability may be experienced due to higher amortization rates, higher capping, closure and post-closure rates, and higher expenses or asset impairments related to the removal of previously included expansion airspace.

The Company periodically evaluates its landfill sites for potential impairment indicators. The Company's judgments regarding the existence of impairment indicators are based on regulatory factors, market conditions and operational performance of its landfills. Future events could cause the Company to conclude that impairment indicators exist and that its landfill carrying costs are impaired.

Cell Processing Reserves

The Company records a cell processing reserve related to its E&P segment for certain locations in Louisiana and Texas for the estimated amount of expenses to be incurred upon the treatment and excavation of oilfield waste received. The cell processing reserve is the future cost to properly treat and dispose of existing waste within the cells at the various facilities. The reserve generally covers estimated costs to be incurred over a period of time up to 24 months, with the current portion representing costs estimated to be incurred in the next 12 months. The estimate is calculated based on current estimated volume in the cells, estimated percentage of waste treated, and historical average costs to treat and excavate the waste. The processing reserve represents the estimated costs to process the volumes of oilfield waste on-hand for which revenue has been recognized. At December 31, 2018 and 2017, the current portion of cell processing reserves was \$2,835 and \$2,984, respectively, which is included in Accrued liabilities in the Consolidated Balance Sheets. At December 31, 2018 and 2017, the long-term portion of cell processing reserves was \$1,211 and \$943, respectively, which is included in Other long-term liabilities in the Consolidated Balance Sheets.

Business Combination Accounting

The Company accounts for business combinations as follows:

- The Company recognizes, separately from goodwill, the identifiable assets acquired and liabilities assumed at their estimated acquisition date fair values. The Company measures and recognizes goodwill as of the acquisition date as the excess of: (a) the aggregate of the fair value of consideration transferred, the fair value of any noncontrolling interest in the acquiree (if any) and the acquisition date fair value of the Company's previously held equity interest in the acquiree (if any), over (b) the fair value of net assets acquired and liabilities assumed.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

- At the acquisition date, the Company measures the fair values of all assets acquired and liabilities assumed that arise from contractual contingencies. The Company measures the fair values of all noncontractual contingencies if, as of the acquisition date, it is more likely than not that the contingency will give rise to an asset or liability.

Finite-Lived Intangible Assets

The amounts assigned to franchise agreements, contracts, customer lists, permits and other agreements are being amortized on a straight-line basis over the expected term of the related agreements (ranging from 1 to 56 years).

Goodwill and Indefinite-Lived Intangible Assets

The Company acquired indefinite-lived intangible assets in connection with certain of its acquisitions. The amounts assigned to indefinite-lived intangible assets consist of the value of certain perpetual rights to provide solid waste collection and transportation services in specified territories and to operate E&P waste treatment and disposal facilities. The Company measures and recognizes acquired indefinite-lived intangible assets at their estimated acquisition date fair values. Indefinite-lived intangible assets are not amortized. Goodwill represents the excess of: (a) the aggregate of the fair value of consideration transferred, the fair value of any noncontrolling interest in the acquiree (if any) and the acquisition date fair value of the Company's previously held equity interest in the acquiree (if any), over (b) the fair value of assets acquired and liabilities assumed. Goodwill and intangible assets, deemed to have indefinite lives, are subject to annual impairment tests as described below.

Goodwill and indefinite-lived intangible assets are tested for impairment on at least an annual basis in the fourth quarter of the year. In addition, the Company evaluates its reporting units for impairment if events or circumstances change between annual tests indicating a possible impairment. Examples of such events or circumstances include, but are not limited to, the following:

- a significant adverse change in legal factors or in the business climate;
- an adverse action or assessment by a regulator;
- a more likely than not expectation that a segment or a significant portion thereof will be sold;
- the testing for recoverability of a significant asset group within the segment; or
- current period or expected future operating cash flow losses.

The Company elected to early adopt the guidance issued by the FASB "Simplifying the Test for Goodwill Impairment" on January 1, 2017. The new guidance removes Step 2 of the goodwill impairment test, which required a hypothetical purchase price allocation. As such, the impairment analysis is only one step. In this step, the Company estimates the fair value of each of its reporting units, which consisted of testing its five geographic solid waste operating segments and its E&P segment at December 31, 2016 and its five geographic solid waste operating segments at December 31, 2017 and 2018, using discounted cash flow analyses. The Company did not test its E&P segment for goodwill impairment at December 31, 2017 and 2018 because the carrying value of its goodwill was \$0. The Company compares the fair value of each reporting unit with the carrying value of the net assets assigned to each reporting unit. If the fair value of a reporting unit is greater than the carrying value of the net assets, including goodwill, assigned to the reporting unit, then no impairment results. If the fair value is less than its carrying value, an impairment charge is recorded for the amount by which the carrying value exceeds its fair value, not to exceed the carrying amount of goodwill.

During the Company's annual impairment analysis of its solid waste operations, the Company determined the fair value of each of its five geographic operating segments at December 31, 2016, 2017 and 2018 and each indefinite-lived intangible asset within those segments using discounted cash flow analyses, which require significant assumptions and estimates about the future operations of each reporting unit and the future discrete cash flows related to each indefinite-lived intangible asset. Significant judgments inherent in these analyses include the determination of appropriate discount rates, the amount and timing of expected future cash flows and growth rates. The cash flows employed in the Company's 2018 discounted cash flow analyses were based on ten-year financial forecasts, which in turn were based on the 2019 annual budget developed internally by management. These forecasts reflect operating profit margins that were consistent with 2018 results and perpetual revenue growth rates of 4.5%. The Company's discount rate assumptions are based on an assessment of the market participant rate which approximated 6.7%. In assessing the reasonableness of the Company's determined fair values of its reporting units, the Company evaluates its results against its current market capitalization. The Company did not record an impairment charge to its geographic operating segments as a result of its annual goodwill and indefinite-lived intangible assets impairment tests for the years ended December 31, 2016, 2017 or 2018.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

During the year ended December 31, 2016, the Company did not record any impairment charges related to goodwill as discussed below; however, the results of the Company's 2016 annual impairment testing indicated that the carrying value of its E&P segment exceeded its fair value by more than \$77,343, which was the carrying value of goodwill at its E&P segment at December 31, 2016. Upon adopting this accounting guidance in the first quarter of 2017, the Company performed an updated impairment test for its E&P segment. The impairment test involved measuring the recoverability of goodwill by comparing the E&P segment's carrying amount, including goodwill, to the fair value of the reporting unit. The fair value was estimated using an income approach employing a discounted cash flow ("DCF") model. The DCF model incorporated projected cash flows over a forecast period based on the remaining estimated lives of the operating locations comprising the E&P segment. This was based on a number of key assumptions, including, but not limited to, a discount rate of 11.7%, annual revenue projections based on E&P waste resulting from projected levels of oil and natural gas exploration and production activity during the forecast period, gross margins based on estimated operating expense requirements during the forecast period and estimated capital expenditures over the forecast period, all of which were classified as Level 3 in the fair value hierarchy. The impairment test showed the carrying value of the E&P segment continued to exceed its fair value by an amount in excess of the carrying amount of goodwill, or \$77,343. Therefore, the Company recorded an impairment charge of \$77,343, consisting of the carrying amount of goodwill at its E&P segment at January 1, 2017, to Impairments and other operating charges in the Consolidated Statements of Net Income during the year ended December 31, 2017.

For the Company's annual impairment analysis of its E&P segment for the year ended December 31, 2016, the Company performed its Step 1 assessment of its E&P segment. The Step 1 assessment involved measuring the recoverability of goodwill by comparing the E&P segment's carrying amount, including goodwill, to the fair value of the reporting unit. The fair value was estimated using an income approach employing a DCF model. The DCF model incorporated projected cash flows over a forecast period based on the remaining estimated lives of the operating locations comprising the E&P segment. This was based on a number of key assumptions, including, but not limited to, a discount rate of 12%, annual revenue projections based on E&P waste resulting from projected levels of oil and natural gas E&P activity during the forecast period, gross margins based on estimated operating expense requirements during the forecast period and estimated capital expenditures over the forecast period, all of which were classified as Level 3 in the fair value hierarchy. As a result of the Step 1 assessment, the Company determined that the E&P segment did not pass the Step 1 test because the carrying value exceeded the estimated fair value of the reporting unit. The Company then performed the Step 2 test to determine the fair value of goodwill for its E&P segment. Based on the Step 1 and Step 2 analyses, the Company did not record an impairment charge to its E&P segment as a result of its goodwill impairment test during the year ended December 31, 2016. Additionally, the Company evaluated the recoverability of the E&P segment's indefinite-lived intangible assets (other than goodwill) by comparing the estimated fair value of each indefinite-lived intangible asset to its carrying value. The Company estimated the fair value of the indefinite-lived intangible assets using an excess earnings approach. Based on the result of the recoverability test, the Company determined that the carrying value of certain indefinite-lived intangible assets within the E&P segment exceeded their fair value and were therefore not recoverable. The Company recorded an impairment charge to Impairments and other operating items in the Consolidated Statements of Net Income on certain indefinite-lived intangible assets within its E&P segment of \$156 during the year ended December 31, 2016.

Impairments of Property and Equipment and Finite-Lived Intangible Assets

Property, equipment and finite-lived intangible assets are carried on the Company's consolidated financial statements based on their cost less accumulated depreciation or amortization. Finite-lived intangible assets consist of long-term franchise agreements, contracts, customer lists, permits and other agreements. The recoverability of these assets is tested whenever events or changes in circumstances indicate that their carrying amount may not be recoverable.

Typical indicators that an asset may be impaired include, but are not limited to, the following:

- a significant adverse change in legal factors or in the business climate;
- an adverse action or assessment by a regulator;
- a more likely than not expectation that a segment or a significant portion thereof will be sold;
- the testing for recoverability of a significant asset group within a segment; or
- current period or expected future operating cash flow losses.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

If any of these or other indicators occur, a test of recoverability is performed by comparing the carrying value of the asset or asset group to its undiscounted expected future cash flows. If the carrying value is in excess of the undiscounted expected future cash flows, impairment is measured by comparing the fair value of the asset to its carrying value. Fair value is determined by an internally developed discounted projected cash flow analysis of the asset. Cash flow projections are sometimes based on a group of assets, rather than a single asset. If cash flows cannot be separately and independently identified for a single asset, the Company will determine whether an impairment has occurred for the group of assets for which the projected cash flows can be identified. If the fair value of an asset is determined to be less than the carrying amount of the asset or asset group, an impairment in the amount of the difference is recorded in the period that the impairment indicator occurs. Several impairment indicators are beyond the Company's control, and whether or not they will occur cannot be predicted with any certainty. Estimating future cash flows requires significant judgment and projections may vary from cash flows eventually realized. There are other considerations for impairments of landfills, as described below.

During the year ended December 31, 2018, the Company did not record an impairment charge for property and equipment. During the year ended December 31, 2017, the Company recorded an \$11,038 impairment charge, which is included in Impairments and other operating items in the Consolidated Statements of Net Income, for property and equipment associated with a project to develop a new landfill in its Central segment that the Company is no longer pursuing. During the year ended December 31, 2016, the Company recorded a \$2,653 impairment charge, which is included in Impairments and other operating items in the Consolidated Statements of Net Income, for property and equipment at four E&P disposal facilities that were permanently closed in 2016 as a result of operating losses incurred.

There are certain indicators listed above that require significant judgment and understanding of the waste industry when applied to landfill development or expansion projects. A regulator or court may deny or overturn a landfill development or landfill expansion permit application before the development or expansion permit is ultimately granted. Management may periodically divert waste from one landfill to another to conserve remaining permitted landfill airspace. Therefore, certain events could occur in the ordinary course of business and not necessarily be considered indicators of impairment due to the unique nature of the waste industry.

Restricted Cash and Restricted Investments

As of December 31, 2018, restricted cash consists of \$66,573 of restricted cash for the settlement of workers' compensation and auto liability insurance claims associated with the Company's insurance programs, funds deposited of \$12,325 in connection with landfill final capping, closure and post-closure obligations and \$5,763 of restricted cash for other financial assurance requirements. As of December 31, 2018, restricted investments consist of funds deposited of \$44,939 in connection with landfill final capping, closure and post-closure obligations and \$2,547 of restricted investments for other financial assurance requirements. Proceeds from these financing arrangements are directly deposited into segregated accounts, and the Company does not have the ability to utilize the funds in regular operating activities. See Note 9 for further information on restricted cash and restricted investments.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Fair Value of Financial Instruments

The Company's financial instruments consist primarily of cash and equivalents, trade receivables, restricted cash and investments, trade payables, debt instruments, contingent consideration obligations, interest rate swaps and fuel hedges. As of December 31, 2018 and 2017, the carrying values of cash and equivalents, trade receivables, restricted cash and investments, trade payables and contingent consideration are considered to be representative of their respective fair values. The carrying values of the Company's debt instruments, excluding certain notes as listed in the table below, approximate their fair values as of December 31, 2018 and 2017, based on current borrowing rates, current remaining average life to maturity and borrower credit quality for similar types of borrowing arrangements, and are classified as Level 2 within the fair value hierarchy. The carrying values and fair values of the Company's debt instruments where the carrying values do not approximate their fair values as of December 31, 2018 and 2017, are as follows:

	Carrying Value at December 31,		Fair Value* at December 31,	
	2018	2017	2018	2017
4.00% Senior Notes due 2018	\$ -	\$ 50,000	\$ -	\$ 50,223
5.25% Senior Notes due 2019	\$ 175,000	\$ 175,000	\$ 177,870	\$ 182,547
4.64% Senior Notes due 2021	\$ 100,000	\$ 100,000	\$ 101,292	\$ 104,985
2.39% Senior Notes due 2021	\$ 150,000	\$ 150,000	\$ 144,305	\$ 146,855
3.09% Senior Notes due 2022	\$ 125,000	\$ 125,000	\$ 120,682	\$ 124,532
2.75% Senior Notes due 2023	\$ 200,000	\$ 200,000	\$ 188,363	\$ 194,660
3.24% Senior Notes due 2024	\$ 150,000	\$ 150,000	\$ 142,877	\$ 149,133
3.41% Senior Notes due 2025	\$ 375,000	\$ 375,000	\$ 355,541	\$ 375,311
3.03% Senior Notes due 2026	\$ 400,000	\$ 400,000	\$ 367,143	\$ 388,760
3.49% Senior Notes due 2027	\$ 250,000	\$ 250,000	\$ 234,243	\$ 250,029
4.25% Senior Notes due 2028	\$ 500,000	\$ -	\$ 506,100	\$ -

*Senior Notes are classified as Level 2 within the fair value hierarchy. Fair value is based on quotes of bonds with similar ratings in similar industries.

For details on the fair value of the Company's interest rate swaps, fuel hedges, restricted cash and investments and contingent consideration, see Note 9.

Derivative Financial Instruments

The Company recognizes all derivatives on the balance sheet at fair value. All of the Company's derivatives have been designated as cash flow hedges; therefore, the effective portion of the changes in the fair value of derivatives will be recognized in accumulated other comprehensive income (loss) ("AOCIL") until the hedged item is recognized in earnings. The ineffective portion of the changes in the fair value of derivatives will be immediately recognized in earnings. The Company classifies cash inflows and outflows from derivatives within operating activities on the statement of cash flows.

One of the Company's objectives for utilizing derivative instruments is to reduce its exposure to fluctuations in cash flows due to changes in the variable interest rates of certain borrowings under the Credit Agreement (defined below). The Company's strategy to achieve that objective involves entering into interest rate swaps. The interest rate swaps outstanding at December 31, 2018 were specifically designated to the Credit Agreement and accounted for as cash flow hedges.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

At December 31, 2018, the Company's derivative instruments included 17 interest rate swap agreements as follows:

<u>Date Entered</u>	<u>Notional Amount</u>	<u>Fixed Interest Rate Paid*</u>	<u>Variable Interest Rate Received</u>	<u>Effective Date</u>	<u>Expiration Date</u>
April 2014	\$ 100,000	1.800%	1-month LIBOR	July 2014	July 2019
May 2014	\$ 50,000	2.344%	1-month LIBOR	October 2015	October 2020
May 2014	\$ 25,000	2.326%	1-month LIBOR	October 2015	October 2020
May 2014	\$ 50,000	2.350%	1-month LIBOR	October 2015	October 2020
May 2014	\$ 50,000	2.350%	1-month LIBOR	October 2015	October 2020
April 2016	\$ 100,000	1.000%	1-month LIBOR	February 2017	February 2020
June 2016	\$ 75,000	0.850%	1-month LIBOR	February 2017	February 2020
June 2016	\$ 150,000	0.950%	1-month LIBOR	January 2018	January 2021
June 2016	\$ 150,000	0.950%	1-month LIBOR	January 2018	January 2021
July 2016	\$ 50,000	0.900%	1-month LIBOR	January 2018	January 2021
July 2016	\$ 50,000	0.890%	1-month LIBOR	January 2018	January 2021
August 2017	\$ 100,000	1.900%	1-month LIBOR	July 2019	July 2022
August 2017	\$ 200,000	2.200%	1-month LIBOR	October 2020	October 2025
August 2017	\$ 150,000	1.950%	1-month LIBOR	February 2020	February 2023
June 2018	\$ 200,000	2.925%	1-month LIBOR	October 2020	October 2025
June 2018	\$ 200,000	2.925%	1-month LIBOR	October 2020	October 2025
December 2018	\$ 200,000	2.850%	1-month LIBOR	July 2022	July 2027

* Plus applicable margin.

Another of the Company's objectives for utilizing derivative instruments is to reduce its exposure to fluctuations in cash flows due to changes in the price of diesel fuel. The Company's strategy to achieve that objective involves periodically entering into fuel hedges that are specifically designated to certain forecasted diesel fuel purchases and accounted for as cash flow hedges. At December 31, 2018, the Company had no fuel hedge agreements in place.

The fair values of derivative instruments designated as cash flow hedges as of December 31, 2018, were as follows:

<u>Derivatives Designated as Cash Flow Hedges</u>	<u>Asset Derivatives</u>		<u>Liability Derivatives</u>	
	<u>Balance Sheet Location</u>	<u>Fair Value</u>	<u>Balance Sheet Location</u>	<u>Fair Value</u>
Interest rate swaps	Prepaid expenses and other current assets ^(a)	\$ 10,737	Other long-term liabilities	\$ (9,314)
	Other assets, net	10,675		
Total derivatives designated as cash flow hedges		<u>\$ 21,412</u>		<u>\$ (9,314)</u>

(a) Represents the estimated amount of the existing unrealized gains on interest rate swaps as of December 31, 2018 (based on the interest rate yield curve at that date), included in AOCIL expected to be reclassified into pre-tax earnings within the next 12 months. The actual amounts reclassified into earnings are dependent on future movements in interest rates.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The fair values of derivative instruments designated as cash flow hedges as of December 31, 2017, were as follows:

Derivatives Designated as Cash Flow Hedges	Asset Derivatives		Liability Derivatives	
	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Interest rate swaps	Prepaid expenses and other current assets	\$ 5,193	Accrued liabilities	\$ (903)
	Other assets, net	15,182	Other long-term liabilities	(493)
Fuel hedges	Prepaid expenses and other current assets	3,880		
Total derivatives designated as cash flow hedges		\$ 24,255		\$ (1,396)

The following table summarizes the impact of the Company's cash flow hedges on the results of operations, comprehensive income (loss) and AOCIL for the years ended December 31, 2018, 2017 and 2016:

Derivatives Designated as Cash Flow Hedges	Amount of Gain or (Loss) Recognized as AOCIL on Derivatives, Net of Tax (Effective Portion) ^(a)			Statement of Net Income Classification	Amount of (Gain) or Loss Reclassified from AOCIL into Earnings, Net of Tax (Effective Portion) ^{(b), (c)}		
	Years Ended December 31,				Years Ended December 31,		
	2018	2017	2016		2018	2017	2016
Interest rate swaps	\$ (892)	\$ 3,795	\$ 9,192	Interest expense	\$ (4,167)	\$ 2,062	\$ 4,939
Fuel hedges	1,997	959	2,363	Cost of operations	(4,904)	2,112	3,607
Total	\$ 1,105	\$ 4,754	\$ 11,555		\$ (9,071)	\$ 4,174	\$ 8,546

(a) In accordance with the derivatives and hedging guidance, the effective portions of the changes in fair values of interest rate swaps and fuel hedges have been recorded in equity as a component of AOCIL. As the critical terms of the interest rate swaps match the underlying debt being hedged, no ineffectiveness is recognized on these swaps and, therefore, all unrealized changes in fair value are recorded in AOCIL. Because changes in the actual price of diesel fuel and changes in the DOE index price do not offset exactly each reporting period, the Company assesses whether the fuel hedges are highly effective using the cumulative dollar offset approach.

(b) Amounts reclassified from AOCIL into earnings related to realized gains and losses on interest rate swaps are recognized when interest payments or receipts occur related to the swap contracts, which correspond to when interest payments are made on the Company's hedged debt.

(c) Amounts reclassified from AOCIL into earnings related to realized gains and losses on the fuel hedges are recognized when settlement payments or receipts occur related to the hedge contracts, which correspond to when the underlying fuel is consumed.

The Company measures and records ineffectiveness on the fuel hedges in Cost of operations in the Consolidated Statements of Net Income on a monthly basis based on the difference between the DOE index price and the actual price of diesel fuel purchased, multiplied by the notional number of gallons on the contracts. There was no significant ineffectiveness recognized on the fuel hedges during the years ended December 31, 2018, 2017 and 2016.

See Note 12 for further discussion on the impact of the Company's hedge accounting to its consolidated Comprehensive income (loss) and AOCIL.

Income Taxes

Deferred tax assets and liabilities are determined based on differences between the financial reporting and income tax bases of assets and liabilities and are measured using the enacted tax rates and laws that are expected to be in effect when the differences are expected to reverse. The Company records valuation allowances to reduce net deferred tax assets to the amount considered more likely than not to be realized.

The Company is required to evaluate whether the tax positions taken on its income tax returns will more likely than not be sustained upon examination by the appropriate taxing authority. If the Company determines that such tax positions will not be sustained, it records a liability for the related unrecognized tax benefits. The Company classifies its liability for unrecognized tax benefits as a current liability to the extent it anticipates making a payment within one year.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

On December 22, 2017, the U.S. Securities and Exchange Commission (the “SEC”) staff issued Staff Accounting Bulletin No. 118 (“SAB 118”) which provides guidance on accounting for the tax effects of the Tax Cuts and Jobs Act (“Tax Act”). The Tax Act, enacted on December 22, 2017, is comprehensive tax legislation which makes broad and complex changes to the U.S. tax code that affected 2017 and subsequent years. SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting under Accounting Standards Codification 740 (“ASC 740”). In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Tax Act for which the accounting under ASC 740 is complete. To the extent that a company’s accounting for certain income tax effects of the Tax Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements.

In connection with the Company’s analysis of the Tax Act, a discrete net income tax benefit of \$269,804 was recorded in the year ended December 31, 2017. This net income tax benefit was primarily the result of the reduction to the corporate income tax rate from 35 percent to 21 percent. Additionally, the Tax Act’s one-time deemed repatriation transition tax (the “Transition Tax”) on certain unrepatriated earnings of non-U.S. subsidiaries is a tax on previously untaxed accumulated and current earnings and profits of certain of the Company’s non-U.S. subsidiaries. To determine the amount of the Transition Tax, the Company had to determine, in addition to other factors, the amount of post-1986 earnings and profits of the relevant subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. The Company was able to make a reasonable estimate of the Transition Tax and recorded a provisional Transition Tax obligation of \$1,000 for the year ended December 31, 2017. The Transition Tax, which has now been determined to be complete, resulted in a total Transition Tax obligation of \$746 with a corresponding adjustment of \$254 to income tax expense for the year ended December 31, 2018. Further, as it relates to the Company’s policy regarding the accounting for the tax impacts of global intangible low-taxed income, it has elected to record the tax impacts as period costs.

Additionally, in conjunction with the Tax Act, the Company recorded a provisional deferred income tax expense of \$62,350 for the year ended December 31, 2017 associated with a portion of its U.S. earnings no longer permanently reinvested. During the year ended December 31, 2018, the Company recorded a deferred income tax expense of \$6,429 associated with refinements to the prior year estimate as a measurement period adjustment pursuant to SAB 118. This resulted in total deferred income tax expense of \$68,779 which has now been determined to be complete.

Share-Based Compensation

The fair value of restricted share unit (“RSU”) awards is determined based on the number of RSUs granted and the closing price of the common shares in the capital of the Company adjusted for future dividends. The fair value of deferred share unit (“DSU”) awards is determined based on the number of DSUs granted and the closing price of the common shares in the capital of the Company.

Compensation expense associated with outstanding performance-based restricted share unit (“PSU”) awards is measured using the fair value of the Company’s common shares adjusted for future dividends and is based on the estimated achievement of the established performance criteria at the end of each reporting period until the performance period ends, recognized ratably over the performance period. Compensation expense is only recognized for those awards that the Company expects to vest, which it estimates based upon an assessment of the probability that the performance criteria will be achieved.

All share-based compensation cost is measured at the grant date, based on the estimated fair value of the award adjusted for future dividends, and is recognized on a straight-line basis as expense over the employee’s requisite service period. The Company recognizes gross share compensation expense with actual forfeitures as they occur.

Warrants are valued using the Black-Scholes pricing model with a contractual life of five years, a risk free interest rate based on the 5-year U.S. treasury yield curve and expected volatility. The Company uses the historical volatility of its common shares over a period equivalent to the contractual life of the warrants to estimate the expected volatility. The fair market value of warrants issued to consultants for acquisitions are recorded immediately as share-based compensation expense.

Share-based compensation expense recognized during the years ended December 31, 2018, 2017 and 2016, was \$43,803 (\$32,774 net of taxes), \$39,361 (\$25,608 net of taxes) and \$44,772 (\$28,680 net of taxes), respectively. This share-based compensation expense includes RSUs, PSUs, DSUs, share option and warrant expense. The share-based compensation expense totals include amounts associated with the Progressive Waste share-based compensation plans, continued by the Company following the Progressive Waste acquisition, which allow for the issuance of shares or cash settlement to employees upon vesting. The Company records share-based compensation expense in Selling, general and administrative expenses in the Consolidated Statements of Net Income. The total unrecognized compensation cost at December 31, 2018, related to unvested RSU awards was \$37,736 and this future expense will be recognized over the remaining vesting period of the RSU awards, which extends to 2022. The weighted average remaining vesting period of the RSU awards is 1.1 years. The total unrecognized compensation cost at December 31, 2018, related to unvested PSU awards was \$17,331 and this future expense will be recognized over the remaining vesting period of the PSU awards, which extends to 2022. The weighted average remaining vesting period of PSU awards is 1.1 years.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Restricted Share Units - Progressive Waste Plans

The Company recorded a liability of \$25,925 at June 1, 2016 associated with the fair value of the Progressive Waste restricted share units outstanding. Outstanding Progressive Waste restricted share units vest over three years. As of December 31, 2016, the Company had \$2,409 of unrecognized compensation cost for restricted share units under the Progressive Waste share-based compensation plans and a liability of \$15,091 representing the December 31, 2016 fair value of outstanding Progressive Waste restricted share units, less unrecognized compensation cost. The fair value as of December 31, 2016 was calculated using a Black-Scholes pricing model with the following assumptions:

Expected remaining life	1 month to 2.15 years
Annual dividend rate	0.92%

As of December 31, 2018, the Company had \$156 of unrecognized compensation cost for restricted share units under the Progressive Waste share-based compensation plans. As of December 31, 2018 and 2017, the Company had a liability of \$9,799 and \$10,785, respectively, representing the December 31, 2018 and 2017 fair values, respectively, of outstanding Progressive Waste restricted share units. For the years ended December 31, 2018 and 2017, the fair value was calculated using the number of shares granted and the closing price of the common shares in the capital of the Company.

Performance-Based Restricted Share Units - Progressive Waste Plans

The Company recorded a liability of \$7,218 at June 1, 2016 associated with the fair value of the Progressive Waste performance-based restricted share units outstanding. As of December 31, 2018, 2017 and 2016, the Company had a liability of \$1,923, \$3,500 and \$3,435, respectively, representing the December 31, 2018, 2017 and 2016 fair values, respectively, of outstanding Progressive Waste performance-based restricted share units, less unrecognized compensation cost. The fair value was calculated using the volume weighted average price of the Company's shares for the five preceding business days as of December 31, 2018, 2017 and 2016 which were \$73.06, \$71.50, and \$52.79, respectively. All remaining unvested Progressive Waste performance-based restricted share units vested during the year ended December 31, 2018.

Share Based Options – Progressive Waste Plans

The Company recorded a liability of \$13,022 at June 1, 2016 associated with the fair value of the Progressive Waste share based options outstanding. The fair value was calculated using a Black-Scholes pricing model with the following weighted average assumptions for the years ended December 31, 2018 and 2017 and for the period from the June 1, 2016 Progressive Waste acquisition to December 31, 2016:

	<u>Year ended December 31, 2018</u>	<u>Year ended December 31, 2017</u>	<u>June 1, 2016 to December 31, 2016</u>
Expected remaining life	2.50 years	0.92 to 2.30 years	1.05 to 3.30 years
Share volatility	14.86%	12.09% to 26.07%	10.35% to 32.92%
Discount rate	2.51%	1.75% to 1.92%	0.92% to 1.66%
Annual dividend rate	0.86%	0.79%	0.92%

All remaining unvested Progressive Waste share based options vested during the year ended December 31, 2017. As of December 31, 2018, 2017 and 2016, the Company had a liability of \$8,812, \$10,751 and \$18,529, respectively, representing the December 31, 2018, 2017 and 2016 fair value, respectively, of outstanding Progressive Waste share based options.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Per Share Information

Basic net income per share attributable to holders of the Company's common shares is computed using the weighted average number of common shares outstanding and vested and unissued restricted share units deferred for issuance into the deferred compensation plan. Diluted net income per share attributable to holders of the Company's common shares is computed using the weighted average number of common and potential common shares outstanding. Potential common shares are excluded from the computation if their effect is anti-dilutive.

Advertising Costs

Advertising costs are expensed as incurred. Advertising expense for the years ended December 31, 2018, 2017 and 2016, was \$5,029, \$5,047 and \$3,960, respectively, which is included in Selling, general and administrative expense in the Consolidated Statements of Net Income.

Insurance Liabilities

As a result of its insurance policies, the Company is effectively self-insured for automobile liability, general liability, employer's liability, environmental liability, cyber liability, employment practices liability, and directors' and officers' liability as well as for employee group health insurance, property and workers' compensation. The Company's insurance accruals are based on claims filed and estimates of claims incurred but not reported and are developed by the Company's management with assistance from its third-party actuary and its third-party claims administrator. The insurance accruals are influenced by the Company's past claims experience factors, which have a limited history, and by published industry development factors. At December 31, 2018 and 2017, the Company's total accrual for self-insured liabilities was \$119,506 and \$122,162, respectively, which is included in Accrued liabilities in the Consolidated Balance Sheets. For the years ended December 31, 2018, 2017 and 2016, the Company recognized \$146,940, \$141,405 and \$106,675, respectively, of self-insurance expense which is included in Cost of operations and Selling, general and administrative expense in the Consolidated Statements of Net Income.

New Accounting Pronouncements

Accounting Standards Adopted

Revenue From Contracts With Customers. In May 2014, the Financial Accounting Standards Board (the "FASB") issued guidance to provide a single, comprehensive revenue recognition model for all contracts with customers. The standard was effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017 for public entities. The Company adopted the amended guidance using the modified retrospective method as of January 1, 2018 for all ongoing customer contracts. The Company's results of operations for the reported periods after January 1, 2018 are presented under this amended guidance, while prior period amounts are not adjusted and continue to be reported in accordance with historical accounting guidance.

The impact of adopting the amended guidance primarily relates to the deferral of certain sales incentives, which previously were expensed as incurred, but under the new guidance are capitalized as Other assets and amortized to Selling, general and administrative expenses over the expected life of the customer relationship. The Company recognized a net increase to retained earnings of \$13,243 as of January 1, 2018 for the cumulative impact of adopting the amended guidance. The cumulative impact was associated with both the capitalization of certain sales incentives as contract acquisition costs consisting of an asset in the amount of \$16,296 and a related deferred tax liability of \$4,058 and a change in accounting for revenue priced based on published indices at the Company's Canada operations of \$1,005. Prior to adoption, the Company expensed approximately \$16,000 in sales incentives annually. There were no other material impacts on the condensed consolidated financial statements as a result of the Company's adoption of this amended guidance.

For contracts with an effective term greater than one year, the Company applied the standard's practical expedient that permits the exclusion of unsatisfied performance obligations as the Company's right to consideration corresponds directly to the value provided to the customer for services completed to date and all future variable consideration is allocated to wholly unsatisfied performance obligations. The Company also applied the standard's optional exemption for performance obligations related to contracts that have an original expected duration of one year or less. The Company applied the standard's practical expedient that permits an entity to recognize the incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset that the entity would have recognized is one year or less. See "Revenue Recognition and Accounts Receivable" within this Note 1 for additional information and disclosures related to this amended guidance.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Classification of Certain Cash Receipts and Cash Payments. In August 2016, the FASB issued guidance that addresses eight targeted changes with respect to how cash receipts and cash payments are classified in the statements of cash flows, with the objective of reducing diversity in practice. The new standard was effective for public companies for financial statements issued for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. The guidance requires application using a retrospective transition method. The Company adopted this guidance as of January 1, 2018. The adoption of this guidance did not have a material impact on the Company's consolidated statements of cash flows.

Accounting for Income Taxes: Intra-Entity Asset Transfers of Assets Other than Inventory. In October 2016, the FASB issued guidance that eliminates the exception for all intra-entity sales of assets other than inventory. As a result, a reporting entity would recognize the tax expense from the sale of the asset in the seller's tax jurisdiction when the transfer occurs, even though the pre-tax effects of that transaction are eliminated in consolidation. Any deferred tax asset that arises in the buyer's jurisdiction would also be recognized at the time of the transfer. The modified retrospective approach will be required for transition to the new guidance, with a cumulative-effect adjustment recorded in retained earnings as of the beginning of the period of adoption. The new guidance was effective for public business entities in fiscal years beginning after December 15, 2017, including interim periods within those years. The Company adopted this guidance as of January 1, 2018. The adoption of this guidance did not have a material impact on the Company's consolidated financial statements.

Statement of Cash Flows: Restricted Cash. In November 2016, the FASB issued guidance that requires that the statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Entities are also required to reconcile such total to amounts on the balance sheet and disclose the nature of the restrictions. The new standard was effective for public companies for financial statements issued for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. The Company adopted this guidance as of January 1, 2018. All prior periods have been adjusted to conform to the current period presentation, which resulted in an increase in cash used in investing activities of \$34,359 for the year ended December 31, 2018 and a decrease in cash used in investing activities of \$105,317 and \$3,814, respectively, for the years ended December 31, 2017 and 2016.

Stock Compensation: Scope of Modification Accounting. In May 2017, the FASB issued guidance to clarify when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The new standard was effective prospectively for all companies for annual periods beginning on or after December 15, 2017. The Company adopted this guidance as of January 1, 2018. The adoption of this guidance did not have a material impact on the Company's consolidated financial statements.

Accounting for the Tax Effects of the Tax Cuts and Jobs Act. On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118"), which provides guidance on accounting for the tax effects of the Tax Cuts and Jobs Act (the "Tax Act"). SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting under Accounting Standards Codification 740 ("ASC 740"). In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Tax Act for which the accounting under ASC 740 is complete. To the extent that a company's accounting for certain income tax effects of the Tax Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate to be included in the financial statements, it should continue to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act.

The Tax Act's one-time deemed repatriation transition tax (the "Transition Tax") on certain unrepatriated earnings of non-U.S. subsidiaries is a tax on previously untaxed accumulated and current earnings and profits of certain of the Company's non-U.S. subsidiaries. To determine the amount of the Transition Tax, the Company had to determine, in addition to other factors, the amount of post-1986 earnings and profits of the relevant subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. In 2017, the Company was able to make a reasonable estimate of the Transition Tax and recorded a provisional Transition Tax obligation of \$1,000. The Transition Tax, which has now been determined to be complete, resulted in recording a total Transition Tax obligation of \$746 with a corresponding adjustment of \$254 to income tax expense for the year ended December 31, 2018. Further, as it relates to the Company's policy regarding the accounting for the tax impacts of global intangible low-taxed income, it has elected to record the tax impacts as period costs.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Additionally, in conjunction with the Tax Act, the Company recorded a provisional deferred income tax expense of \$62,350 for the year ended December 31, 2017 associated with a portion of its U.S. earnings no longer permanently reinvested. During the year ended December 31, 2018, the Company recorded a deferred income tax expense of \$6,429 associated with refinements to the prior year estimate as a measurement period adjustment pursuant to SAB 118. This resulted in total deferred income tax expense of \$68,779 which has now been determined to be complete.

Accounting Standards Pending Adoption

Lease Accounting. In February 2016, the FASB issued guidance that requires lessees to recognize a right-of-use asset and a lease liability for virtually all of their leases (other than leases that meet the definition of a short-term lease). The liability will be equal to the present value of lease payments. The asset will be based on the liability, subject to adjustment, such as for initial direct costs. For income statement purposes, the FASB retained a dual model, requiring leases to be classified as either operating or finance. Operating leases will result in straight-line expense (similar to current operating leases) while finance leases will result in a front-loaded expense pattern (similar to current capital leases). Classification will be based on criteria that are largely similar to those applied in current lease accounting, but without explicit bright lines. The new standard is effective for public companies for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018, with early adoption permitted. The FASB issued new guidance in July 2018, which amended the guidance to allow the issuer to elect from two adoption alternatives: 1) apply the new guidance at the beginning of the earliest comparative period presented; or 2) apply the new guidance at the effective date and recognize a cumulative-effect adjustment, without adjusting the comparative periods presented.

The Company adopted the new standard on January 1, 2019 and elected to apply the new guidance at the effective date and recognize a cumulative-effect adjustment, without adjusting the comparative periods presented. The Company also applied the package of practical expedients to leases that commenced before the effective date whereby the Company elected not to reassess the following: (1) whether any expired or existing contracts are or contain leases; (2) the lease classification for any expired or existing leases; and (3) whether initial direct costs exist for any existing leases.

The Company has substantially completed its assessment of the provisions of the lease accounting guidance and implementation of its leasing software solution to manage and account for leases under the new standard. The Company is currently assessing the disclosure requirements under the new standard and it anticipates disclosing additional information, as necessary, to comply with the new standard. As of January 1, 2019, the Company expects to recognize a right-of-use liability for its operating leases of approximately \$207,300 classified as accrued liabilities and other long-term liabilities, a corresponding right-of-use asset of approximately \$206,700 classified as other assets in its consolidated balance sheet, a reduction to deferred income tax liabilities of approximately \$1,100 and a cumulative-effect adjustment to increase retained earnings of approximately \$500. The Company does not expect the adoption of the new standard to have a material impact on its consolidated statements of net income or consolidated statements of cash flows.

Financial Instruments - Credit Losses: Measurement of Credit Losses on Financial Instruments. In June 2016, the FASB issued guidance which introduces a new forward-looking approach, based on expected losses, to estimate credit losses on certain types of financial instruments, including trade receivables, which will require entities to incorporate considerations of historical information, current information and reasonable and supportable forecasts. The standard will be effective for public business entities that are SEC filers for annual periods beginning after December 15, 2019 and interim periods within those years. Early adoption is permitted. The Company does not expect the adoption of this guidance to have a material impact on its consolidated financial statements.

Derivatives and Hedging: Targeted Improvements to Accounting for Hedging Activities. In August 2017, the FASB issued guidance which improves the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities in its financial statements and make certain targeted improvements to simplify the application of the hedge accounting guidance in current GAAP. The amendments in this update are intended to better align an entity's risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships and presentation of hedge results. The effective date for the standard is for fiscal years beginning after December 15, 2018. Early adoption is permitted. The Company does not expect the adoption of this guidance to have a material impact on its consolidated financial statements.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

SEC Simplified and Updated Disclosure Requirements. In August 2018, the SEC amended its rules to require an analysis of changes in stockholders' equity in the financial statements included in Quarterly Reports on Form 10-Q. The analysis, which can be presented as a note or separate statement, is required for the current and comparative quarter and year-to-date interim periods. The amended rules will become effective 30 days after they are published in the Federal Register; however, the SEC's Division of Corporation Finance issued a Compliance and Disclosure Interpretation (the "CDI") that provides transition guidance related to this new disclosure. The CDI states that the amendments are effective for all filings made on or after the effective date; however, it also states that SEC staff would not object if a filer's first presentation of the changes in stockholders' equity was included in its Form 10-Q for the quarter that begins after the effective date of the amendments, which is the quarter ending March 31, 2019 for the Company. The Company will be including these additional disclosures beginning with its first quarter Form 10-Q in 2019.

Reclassification

As disclosed within other footnotes of the financial statements, restricted cash and restricted investments reported in the Company's prior year have been reclassified to conform with the 2018 presentation.

2. USE OF ESTIMATES AND ASSUMPTIONS

In preparing the Company's consolidated financial statements, several estimates and assumptions are made that affect the accounting for and recognition of assets, liabilities, revenues and expenses. These estimates and assumptions must be made because certain of the information that is used in the preparation of the Company's consolidated financial statements is dependent on future events, cannot be calculated with a high degree of precision from data available or is simply not capable of being readily calculated based on generally accepted methodologies. In some cases, these estimates are particularly difficult to determine and the Company must exercise significant judgment. The most difficult, subjective and complex estimates and the assumptions that deal with the greatest amount of uncertainty are related to the Company's accounting for landfills, self-insurance accruals, income taxes, allocation of acquisition purchase price, contingent consideration accruals and asset impairments, which are discussed in Note 1. An additional area that involves estimation is when the Company estimates the amount of potential exposure it may have with respect to litigation, claims and assessments in accordance with the accounting guidance on contingencies. Actual results for all estimates could differ materially from the estimates and assumptions that the Company uses in the preparation of its consolidated financial statements.

3. ACQUISITIONS

The Company recognizes, separately from goodwill, the identifiable assets acquired and liabilities assumed at their estimated acquisition date fair values. The Company measures and recognizes goodwill as of the acquisition date as the excess of: (a) the aggregate of the fair value of consideration transferred, the fair value of any noncontrolling interest in the acquiree (if any) and the acquisition date fair value of the Company's previously held equity interest in the acquiree (if any), over (b) the fair value of assets acquired and liabilities assumed. If information about facts and circumstances existing as of the acquisition date is incomplete by the end of the reporting period in which a business combination occurs, the Company will report provisional amounts for the items for which the accounting is incomplete. The measurement period ends once the Company receives the information it was seeking; however, this period will not exceed one year from the acquisition date. Any material adjustments recognized during the measurement period will be reflected prospectively in the period the adjustment is identified in the consolidated financial statements. The Company recognizes acquisition-related costs as expense.

Progressive Waste Acquisition

As described in Note 1, on June 1, 2016, pursuant to the Merger Agreement, Merger Sub merged with and into Old Waste Connections in an all-stock business combination with Old Waste Connections continuing as the surviving corporation and an indirect wholly-owned subsidiary of New Waste Connections. The term "Progressive Waste acquisition" is used herein to refer to the transaction completed under the Merger Agreement, and the term "Progressive Waste" is used herein in the context of references to Progressive Waste Solutions Ltd. and its shareholders prior to the completion of the Progressive Waste acquisition on June 1, 2016. The financial statements presented herein for the years ended December 31, 2018 and 2017 include the accounts of New Waste Connections. The financial statements presented herein for the year ended December 31, 2016 are the historical financial statements of Old Waste Connections with the inclusion on June 1, 2016 of the fair value of the identifiable assets and liabilities acquired from Progressive Waste and the inclusion of the results of operations from the acquired Progressive Waste operations commencing on June 1, 2016.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The Progressive Waste acquisition was accounted for as a reverse merger using the acquisition method of accounting. Old Waste Connections has been identified as the acquirer for accounting purposes and the acquisition method of accounting has been applied. Identifying the acquirer requires various considerations including the relative voting rights post-closing, the size of minority voting interests and the composition of the board of directors and senior management. Based on these considerations, Old Waste Connections' former stockholders hold a majority of the post-closing voting rights of the Company and both the post-closing composition of the board of directors and senior management are most closely aligned with Old Waste Connections. The Progressive Waste acquisition provided the Company with significant strategic and financial benefits including enhanced size and revenue diversification, increased earnings and cash flows and better access to capital markets.

The results of operations from the acquired Progressive Waste operations have been included in the Company's Consolidated Financial Statements from June 1, 2016, the acquisition date. Total revenues during the period from June 1, 2016 to December 31, 2016, generated from the operations acquired in the Progressive Waste acquisition and included within consolidated revenues, were \$1,184,965. Total pre-tax earnings during the period from June 1, 2016 to December 31, 2016, generated from the operations acquired in the Progressive Waste acquisition and included within consolidated income before income taxes, were \$155,832. Total revenues during the period from January 1, 2017 to May 31, 2017, generated from the operations acquired in the Progressive Waste acquisition and included within consolidated revenues, were \$826,886. Total pre-tax earnings during the period from January 1, 2017 to May 31, 2017, generated from the operations acquired in the Progressive Waste acquisition and included within consolidated income before income taxes, was \$79,470, and includes \$57,362 of expenses recorded in Impairments and other operating items.

The following table summarizes the consideration transferred to acquire Progressive Waste and the amounts of identifiable assets acquired and liabilities assumed:

Fair value of consideration transferred:	
Shares issued	\$ 3,503,162
Debt assumed	<u>1,729,274</u>
	5,232,436
Less: cash and restricted cash acquired	<u>(70,769)</u>
Net fair value of consideration transferred	<u>5,161,667</u>
Recognized amounts of identifiable assets acquired and liabilities assumed associated with the business acquired:	
Accounts receivable	231,709
Prepaid expenses and other current assets	28,623
Restricted investments	11,550
Property and equipment	2,063,011
Contracts	223,885
Customer lists	191,679
Other intangibles	218,499
Other long-term assets	4,491
Accounts payable and accrued liabilities	(264,992)
Deferred revenue	(35,635)
Contingent consideration	(19,412)
Other long-term liabilities	(185,774)
Deferred income taxes	<u>(329,552)</u>
Total identifiable net assets	<u>2,138,082</u>
Goodwill	<u>\$ 3,023,585</u>

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

On June 1, 2016, as share consideration for the Progressive Waste acquisition, the Company issued an additional 78,218,878 common shares at \$44.79, the closing price on the NYSE of New Waste Connections common shares on June 1, 2016. The Company assumed \$1,729,274 of debt in the Progressive Waste acquisition, consisting of \$1,659,465 of amounts outstanding under the Progressive Waste credit facilities that were repaid in full following the close of the Progressive Waste acquisition, \$64,000 of tax-exempt bonds and \$5,809 of other long-term debt. See Note 8 for further discussion of the debt assumed.

Contingent consideration acquired consisted primarily of two amounts payable to the former owners of an acquisition completed by Progressive Waste in 2015. The first contingent amount payable was based on the acquired operations exceeding earnings targets specified in the purchase agreement over a one-year period ending September 30, 2017. There was no limit to this contingent amount payable under the terms of the purchase agreement, the fair value of which was recorded as \$10,452 of additional purchase consideration in 2016, based upon applying a discount rate of 2.0% to the probability assessment of the expected future cash flows over the period in which the obligation was expected to be settled. During the year ended December 31, 2017, the Company recorded \$9,631 to Impairments and other operating items in the Consolidated Statements of Net Income to increase the fair value of the amount payable under this liability-classified contingent consideration arrangement. The Company paid this liability in the fourth quarter of 2017. The second contingent amount payable had a maximum possible payment of \$5,000, representing a purchase price holdback payable to the former owners subject to the satisfaction of various business performance conditions through December 31, 2016, which was paid during the year ended December 31, 2017.

The goodwill acquired is primarily attributable to growth opportunities at operations acquired in the Progressive Waste acquisition and synergies that are expected to arise as a result of the Progressive Waste acquisition. The expected tax deductible amount of the goodwill acquired is \$303,594.

The gross amount of trade receivables due under contracts was \$239,212, of which \$7,503 was expected to be uncollectible. The Company did not acquire any other class of receivable as a result of the Progressive Waste acquisition.

The Company incurred \$31,408 of acquisition-related costs for the Progressive Waste acquisition during the year ended December 31, 2016. These expenses are included in Selling, general and administrative expenses in the Company's Consolidated Statements of Net Income.

Other Acquisitions

In December 2018, the Company acquired American Disposal Services, Inc. and certain affiliates (together, "American"), one of the largest privately-owned solid waste collection and recycling businesses in the Mid-Atlantic, with total annual revenues of approximately \$175,000. American serves approximately 400,000 customers in Virginia, Maryland, Georgia and Colorado. The fair value of certain assets acquired and liabilities assumed with the American acquisition are provisional pending analysis expected to be completed in the first quarter of 2019.

In addition to the acquisition of American, the Company acquired 19 individually immaterial non-hazardous solid waste collection, recycling, transfer and disposal businesses during the year ended December 31, 2018. The purchase price for one of these acquisitions included contingent consideration of \$11,593, representing the fair value of up to \$12,582 of amounts payable to the former owners based on the achievement of certain operating targets specified in the asset purchase agreement. The fair value of the contingent consideration was determined using probability assessments of the expected future cash flows over the three-year period in which the obligation is expected to be settled, and applying a discount rate of 2.7%. As of December 31, 2018, the obligation recognized at the purchase date has not materially changed. Any changes in the fair value of the contingent consideration subsequent to the acquisition date will be charged or credited to expense until the contingency is settled. The total acquisition-related costs incurred during the year ended December 31, 2018 for these acquisitions was \$8,607. These expenses are included in Selling, general and administrative expenses in the Company's Consolidated Statements of Net Income.

In January 2017, the Company acquired Groot Industries, Inc. ("Groot"). At the time of the acquisition, Groot was the largest privately-owned solid waste services company in Illinois with total annual revenue of approximately \$200,000. Groot serves approximately 300,000 customers primarily in northern Illinois from a network of seven collection operations, six transfer stations and one recycling facility.

In addition to the acquisition of Groot, the Company acquired 13 individually immaterial non-hazardous solid waste collection businesses during the year ended December 31, 2017. The total acquisition-related costs incurred during the year ended December 31, 2017 for these acquisitions was \$5,700. These expenses are included in Selling, general and administrative expenses in the Company's Consolidated Statements of Net Income.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The Company acquired 12 individually immaterial non-hazardous solid waste collection businesses during the year ended December 31, 2016. The total acquisition-related costs incurred during the year ended December 31, 2016 for these acquisitions was \$1,968. These expenses are included in Selling, general and administrative expenses in the Company's Consolidated Statements of Net Income.

The results of operations of the acquired businesses have been included in the Company's consolidated financial statements from their respective acquisition dates. The Company expects these acquired businesses to contribute towards the achievement of the Company's strategy to expand through acquisitions. Goodwill acquired is attributable to the synergies and ancillary growth opportunities expected to arise after the Company's acquisition of these businesses.

The following table summarizes the consideration transferred to acquire these businesses and the amounts of identifiable assets acquired and liabilities assumed at the acquisition dates for the acquisitions consummated in the years ended December 31, 2018, 2017 and 2016:

	2018	2017	2016
	Acquisitions	Acquisitions	Acquisitions
Fair value of consideration transferred:			
Cash	\$ 830,091	\$ 410,695	\$ 17,131
Debt assumed	210,461	56,958	-
Notes issued to sellers	-	13,460	-
Fair value of operations exchanged	-	81,097	-
Working capital settlements receivable	(8,507)	-	-
	<u>1,032,045</u>	<u>562,210</u>	<u>17,131</u>
Recognized amounts of identifiable assets acquired and liabilities assumed associated with businesses acquired:			
Accounts receivable	23,682	19,228	833
Prepaid expenses and other current assets	4,614	10,722	477
Property and equipment	437,914	169,433	4,735
Long-term franchise agreements and contracts	10,888	54,674	-
Indefinite-lived intangibles	-	5,830	-
Customer lists	133,387	33,529	8,508
Permits and other intangibles	23,935	27,261	-
Other assets	19	3,052	261
Accounts payable and accrued liabilities	(25,005)	(12,020)	(2,867)
Deferred revenue	(16,238)	(6,883)	(659)
Contingent consideration	(11,669)	(2,885)	(977)
Other long-term liabilities	(15,532)	(1,080)	-
Deferred income taxes	(391)	(50,283)	-
Total identifiable net assets	<u>565,604</u>	<u>250,578</u>	<u>10,311</u>
Goodwill	<u>\$ 466,441</u>	<u>\$ 311,632</u>	<u>\$ 6,820</u>

Goodwill acquired in 2018 totaling \$455,283 is expected to be deductible for tax purposes. Goodwill acquired in 2017 totaling \$62,887 is expected to be deductible for tax purposes. The 2016 acquisitions of 12 non-hazardous solid waste collection businesses resulted in goodwill acquired in 2016 totaling \$6,820, which is expected to be deductible for tax purposes.

The fair value of acquired working capital related to seven individually immaterial acquisitions completed during the year ended December 31, 2018, is provisional pending receipt of information from the acquirees to support the fair value of the assets acquired and liabilities assumed. Any adjustments recorded relating to finalizing the working capital for these seven acquisitions are not expected to be material to the Company's financial position.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The gross amount of trade receivables due under contracts acquired during the year ended December 31, 2018, was \$27,795, of which \$4,113 was expected to be uncollectible. The gross amount of trade receivables due under contracts acquired during the year ended December 31, 2017, was \$20,746, of which \$1,518 was expected to be uncollectible. The gross amount of trade receivables due under contracts acquired during the year ended December 31, 2016, was \$1,316, of which \$483 was expected to be uncollectible. The Company did not acquire any other class of receivable as a result of the acquisition of these businesses.

Pro Forma Results of Operations

The following pro forma results of operations assume that the Company's acquisition of Progressive Waste and its other acquisitions that were collectively insignificant, occurring during the year ended December 31, 2016, were acquired as of January 1, 2016 (unaudited):

	Year Ended December 31, 2016
Total revenue	\$ 4,184,871
Net income	\$ 350,228
Basic income per share	\$ 2.00
Diluted income per share	\$ 1.99

The unaudited pro forma results of operations do not purport to be indicative of the results of operations which actually would have resulted had the acquisitions occurred on January 1, 2016, nor are they necessarily indicative of future operating results. The above unaudited pro forma financial information includes adjustments to acquisition expenses incurred by the Company and the acquired businesses, severance payments to employees terminated as a result of the acquisitions, equity-based compensation expenses incurred as a result of accelerated vesting resulting from the Progressive Waste acquisition, interest expense on new and refinanced debt attributable to the acquisitions, expenses associated with Progressive Waste interest rate swaps resulting from its credit facility being terminated, depreciation expense on acquired property and equipment, amortization of identifiable intangible assets acquired, depletion expense on acquired landfills and provision for income taxes.

4. ASSETS HELD FOR SALE

During the year ended December 31, 2018, the Company's Southern segment completed the sale of two operations in the Louisiana market for total cash consideration of \$2,000. Due to modifications to its divestiture plan and changes in the fair market value of the divested operations, the Company reversed \$5,990 of expenses recognized in prior periods to Impairments and other operating items in the Consolidated Statements of Net Income to adjust the carrying cost of these assets to fair market value.

During the year ended December 31, 2017, the Company's Eastern segment completed the sale of all assets and liabilities in its Washington, D.C. and Massachusetts markets and the sale of operating locations in the Illinois and Wisconsin markets. Additionally, during the year ended December 31, 2017, the Company's Southern segment completed the sale of an operation in the Florida market, four operations in the Louisiana market and two operations in western Texas. The total consideration received for these sales was \$104,065 and included cash and non-monetary assets.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The Company's assets and liabilities held for sale as of December 31, 2018 and 2017, were comprised of the following:

	December 31,	
	2018	2017
Current assets held for sale:		
Cash and equivalents	\$ -	\$ 192
Accounts receivable	-	1,185
Other current assets	-	219
	<u>\$ -</u>	<u>\$ 1,596</u>
Long-term assets held for sale:		
Property and equipment	\$ -	\$ 12,623
Other assets	-	2
	<u>\$ -</u>	<u>\$ 12,625</u>
Current liabilities held for sale:		
Accounts payable	\$ -	\$ 804
Accrued liabilities	-	215
Deferred revenue	-	1,136
	<u>\$ -</u>	<u>\$ 2,155</u>

5. INTANGIBLE ASSETS, NET

Intangible assets, exclusive of goodwill, consisted of the following at December 31, 2018:

	Gross Carrying Amount	Accumulated Amortization	Accumulated Impairment Loss	Net Carrying Amount
Finite-lived intangible assets:				
Long-term franchise agreements and contracts	\$ 476,833	\$ (157,986)	\$ -	\$ 318,847
Customer lists	530,614	(232,461)	-	298,153
Permits and other	338,601	(49,195)	-	289,406
	<u>1,346,048</u>	<u>(439,642)</u>	<u>-</u>	<u>906,406</u>
Indefinite-lived intangible assets:				
Solid waste collection and transportation permits	158,591	-	-	158,591
Material recycling facility permits	42,283	-	-	42,283
E&P facility permits	59,855	-	(38,507)	21,348
	<u>260,729</u>	<u>-</u>	<u>(38,507)</u>	<u>222,222</u>
Intangible assets, exclusive of goodwill	<u>\$ 1,606,777</u>	<u>\$ (439,642)</u>	<u>\$ (38,507)</u>	<u>\$ 1,128,628</u>

The weighted-average amortization period of long-term franchise agreements and contracts acquired during the year ended December 31, 2018 was 16.3 years. The weighted-average amortization period of customer lists acquired during the year ended December 31, 2018 was 10.0 years. The weighted-average amortization period of finite-lived permits and other acquired during the year ended December 31, 2018 was 40.0 years.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Intangible assets, exclusive of goodwill, consisted of the following at December 31, 2017:

	Gross Carrying Amount	Accumulated Amortization	Accumulated Impairment Loss	Net Carrying Amount
Finite-lived intangible assets:				
Long-term franchise agreements and contracts	\$ 481,293	\$ (123,591)	\$ -	\$ 357,702
Customer lists	405,683	(180,440)	-	225,243
Permits and other	317,984	(35,715)	-	282,269
	<u>1,204,960</u>	<u>(339,746)</u>	<u>-</u>	<u>865,214</u>
Indefinite-lived intangible assets:				
Solid waste collection and transportation permits	158,591	-	-	158,591
Material recycling facility permits	42,283	-	-	42,283
E&P facility permits	59,855	-	(38,507)	21,348
	<u>260,729</u>	<u>-</u>	<u>(38,507)</u>	<u>222,222</u>
Intangible assets, exclusive of goodwill	<u>\$ 1,465,689</u>	<u>\$ (339,746)</u>	<u>\$ (38,507)</u>	<u>\$ 1,087,436</u>

Estimated future amortization expense for the next five years relating to finite-lived intangible assets is as follows:

For the year ending December 31, 2019	\$ 119,602
For the year ending December 31, 2020	\$ 105,744
For the year ending December 31, 2021	\$ 92,588
For the year ending December 31, 2022	\$ 79,339
For the year ending December 31, 2023	\$ 67,236

6. PROPERTY AND EQUIPMENT, NET

Property and equipment, net consists of the following:

	December 31,	
	2018	2017
Landfill site costs	\$ 3,981,870	\$ 3,606,427
Rolling stock	1,736,673	1,507,905
Land, buildings and improvements	963,903	867,941
Containers	682,990	587,799
Machinery and equipment	660,961	590,048
Construction in progress	25,692	33,886
	<u>8,052,089</u>	<u>7,194,006</u>
Less accumulated depreciation and depletion	<u>(2,883,093)</u>	<u>(2,373,072)</u>
	<u>\$ 5,168,996</u>	<u>\$ 4,820,934</u>

The Company's landfill depletion expense, recorded in Depreciation in the Consolidated Statements of Net Income, for the years ended December 31, 2018, 2017 and 2016, was \$206,404, \$196,314 and \$143,940, respectively.

As of December 31, 2017, certain assets and liabilities associated with the Company's Southern segment met the held for sale criteria. As a result, property and equipment totaling \$12,623, net of accumulated depreciation, have been reclassified to long-term assets held for sale on the accompanying Consolidated Balance Sheets at December 31, 2017. See Note 4 for additional discussion.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

7. ACCRUED LIABILITIES

Accrued liabilities consist of the following:

	December 31,	
	2018	2017
Insurance claims	\$ 119,506	\$ 122,162
Payroll and payroll-related	87,136	86,436
Interest payable	16,971	15,595
Share-based compensation plan liability – current portion	6,209	4,407
Environmental remediation reserve – current portion	3,592	2,315
Cell processing reserve – current portion	2,835	2,984
Unrealized cash flow hedge losses	-	903
Other	53,295	43,237
	<u>\$ 289,544</u>	<u>\$ 278,039</u>

As of December 31, 2017, certain assets and liabilities associated with the Company's Southern segment met the held for sale criteria. As a result, accrued liabilities totaling \$215 have been reclassified to current liabilities held for sale on the accompanying Consolidated Balance Sheets at December 31, 2017. See Note 4 for additional discussion.

8. LONG-TERM DEBT

The following table presents the Company's long-term debt as of December 31, 2018 and 2017:

	December 31,	
	2018	2017
Revolver under Credit Agreement	\$ 481,610	\$ 192,101
Term loan under Credit Agreement	1,237,500	1,637,500
2018 Senior Notes	-	50,000
2019 Senior Notes	175,000	175,000
2021 Senior Notes	100,000	100,000
New 2021 Senior Notes	150,000	150,000
2022 Senior Notes	125,000	125,000
2023 Senior Notes	200,000	200,000
2024 Senior Notes	150,000	150,000
2025 Senior Notes	375,000	375,000
2026 Senior Notes	400,000	400,000
2027 Senior Notes	250,000	250,000
2028 Senior Notes	500,000	-
Tax-exempt bonds	15,930	95,430
Notes payable to sellers and other third parties, bearing interest ranging from 2.75% to 24.81%, principal and interest payments due periodically with due dates ranging from 2019 to 2036 ^(a)	14,653	26,290
	<u>4,174,693</u>	<u>3,926,321</u>
Less – current portion	(1,786)	(11,659)
Less – debt issuance costs	(19,442)	(15,090)
	<u>\$ 4,153,465</u>	<u>\$ 3,899,572</u>

^(a) Interest rates represent the interest rates incurred at December 31, 2018.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Summary of Changes in Debt Related to Progressive Waste Acquisition

On June 1, 2016, the Company assumed \$1,729,274 of debt in the Progressive Waste acquisition consisting of \$1,659,465 of amounts outstanding under Progressive Waste's prior Amended and Restated Credit Agreement, dated as of June 30, 2015, among Progressive Waste, Bank of America, N.A., acting through its Canada branch, as global agent, Bank of America, N.A., as the U.S. agent, and the other lenders and financial institutions party thereto (the "2015 Progressive Waste Credit Agreement"), \$64,000 of tax-exempt bonds and \$5,809 of other long-term debt.

On June 1, 2016, the Company terminated the 2015 Progressive Waste Credit Agreement. Also on June 1, 2016, Old Waste Connections terminated a Revolving Credit and Term Loan Agreement, dated as of January 26, 2015, by and among Old Waste Connections, Bank of America, N.A., as the administrative agent and swing line lender and letter of credit issuer, and certain lenders and other financial institutions party thereto (the "2015 Old Waste Connections Credit Agreement," and together with the 2015 Progressive Waste Credit Agreement, the "Prior Credit Agreements").

On June 1, 2016, the Company also entered into several financing agreements, including that certain Revolving Credit and Term Loan Agreement (the "2016 Credit Agreement") with Bank of America, N.A., acting through its Canada Branch, as global agent, the swing line lender and letter of credit issuer, Bank of America, N.A., as the U.S. Agent and a letter of credit issuer, the lenders thereunder and any other financial institutions from time to time party thereto, and a Master Note Purchase Agreement (as supplemented by the First Supplement dated as of February 13, 2017 (the "2016 First Supplement") and as amended, restated, amended and restated, assumed, supplemented or modified from time to time, the "2016 NPA") with certain accredited institutional investors, as more fully described below. Proceeds from the borrowings under the 2016 Credit Agreement were used initially to refinance indebtedness of the Company and its subsidiaries under the Prior Credit Agreements and for the payment of transaction fees and expenses related to the Progressive Waste acquisition. The Company used proceeds from the sale of the New 2021 Senior Notes, 2023 Senior Notes and the 2026 Senior Notes (defined below) to refinance existing indebtedness and for general corporate purposes.

Credit Agreement

As described above, on June 1, 2016, the Company entered into the 2016 Credit Agreement. On March 21, 2018, the 2016 Credit Agreement was amended and restated in its entirety pursuant to an Amended and Restated Revolving Credit and Term Loan Agreement (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement") entered into by the Company, Bank of America, N.A., acting through its Canada Branch, as global agent, the swing line lender and letter of credit issuer, Bank of America, N.A., as the U.S. Agent and a letter of credit issuer, the lenders (the "Lenders") and any other financial institutions from time to time party thereto. Entry into the Credit Agreement, among other things, extended the scheduled maturity of the relevant indebtedness and facilitated the release of each of the Company's subsidiaries guaranteeing the obligations under the 2016 Credit Agreement. There are no subsidiary guarantors under the Credit Agreement. The Credit Agreement has a scheduled maturity date of March 21, 2023.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Details of the Credit Agreement are as follows:

	December 31,	
	2018	2017
<i>Revolver under Credit Agreement</i>		
Available	\$ 955,779	\$ 1,149,813
Letters of credit outstanding	\$ 125,111	\$ 220,586
Total amount drawn, as follows:	\$ 481,610	\$ 192,101
Amount drawn – U.S. LIBOR rate loan	357,000	-
Interest rate applicable – U.S. LIBOR rate loan	3.62%	Not applicable
Interest rate margin – U.S. LIBOR rate loan	1.10%	Not applicable
Amount drawn – Canadian prime rate loan	\$ -	\$ 16,739
Interest rate applicable - Canadian prime rate loan	Not applicable	3.45%
Interest rate margin – Canadian prime rate loan	Not applicable	0.25%
Amount drawn – Canadian bankers' acceptance	\$ 124,610	\$ 175,362
Interest rate applicable – Canadian bankers' acceptance	3.40%	2.64%
Interest rate acceptance fee – Canadian bankers' acceptance	1.10%	1.20%
Commitment – rate applicable	0.12%	0.15%
<i>Term loan under Credit Agreement</i>		
Amount drawn – U.S. based LIBOR loan	\$ 1,237,500	\$ 1,637,500
Interest rate applicable – U.S. based LIBOR loan	3.62%	2.77%
Interest rate margin – U.S. based LIBOR loan	1.10%	1.20%

Pursuant to the terms and conditions of the Credit Agreement, the Lenders remain committed to providing a \$3,200,000 credit facility to the Company, consisting of (i) revolving advances up to an aggregate principal amount of \$1,562,500 at any one time outstanding, and (ii) a term loan in an aggregate principal amount of \$1,637,500, which term loan was fully drawn at closing of the 2016 Credit Agreement and remained and continued to be fully drawn at closing of the Credit Agreement. Since that time, the term loan has been reduced by \$400,000. As part of the aggregate commitments under the revolving advances, the Credit Agreement provides for letters of credit to be issued at the request of the Company in an aggregate amount not to exceed \$320,000 and for swing line loans to be issued at the request of the Company in an aggregate amount not to exceed the lesser of \$75,000 and the aggregate commitments under the revolving advances. Both the letter of credit sublimit and the swing line sublimit are part of, and not in addition to, the aggregate commitments under the revolving advances. Existing letters of credit in place under the 2016 Credit Agreement are continued and now deemed issued under and governed by the terms of the Credit Agreement. Subject to certain specified conditions and additional deliveries, the Company has the option to request increases in the aggregate commitments for revolving advances and one or more additional term loans, provided that (i) the aggregate principal amount of such requests does not exceed \$500,000 and (ii) the aggregate principal amount of commitments and term loans under the credit facility does not exceed \$3,700,000. The Company has \$5,182 of debt issuance costs related to the Credit Agreement recorded in Other assets, net in the Consolidated Balance Sheets at December 31, 2018, which are being amortized through the maturity date, or March 21, 2023.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Advances are available under the Credit Agreement in U.S. dollars and Canadian dollars. Interest accrues on the term loan at a LIBOR rate or a base rate, at the Company's option, plus an applicable margin. Interest accrues on revolving advances, at the Company's option, (i) at a LIBOR rate or a base rate for U.S. dollar borrowings, plus an applicable margin, and (ii) at the Canadian prime rate for Canadian dollar borrowings, plus an applicable margin. Canadian dollar borrowings are also available by way of bankers' acceptances or BA equivalent loans ("BA loans"), subject to the payment of a drawing fee. The fees for letters of credit in US dollars and Canadian dollars are also based on the applicable margin. The applicable margin used in connection with interest rates and fees is based on the Company's Leverage Ratio (as defined below). The applicable margin for LIBOR rate loans, drawing fees for bankers' acceptance and BA loans and letter of credit fees ranges from 1.00% to 1.50%, and the applicable margin for base rate loans, Canadian prime rate loans and swing line loans ranges from 0.00% to 0.50%. The Company will also pay a fee based on its Leverage Ratio (as defined below) on the actual daily unused amount of the aggregate revolving commitments.

The borrowings under the Credit Agreement are unsecured. The Credit Agreement contains customary representations, warranties, covenants and events of default, including, among others, a change of control event of default and limitations on the incurrence of indebtedness and liens, new lines of business, mergers, transactions with affiliates and burdensome agreements. During the continuance of an event of default, the Lenders may take a number of actions, including, among others, declaring the entire amount then outstanding under the Credit Agreement to be due and payable. The Credit Agreement includes a financial covenant limiting, as of the last day of each fiscal quarter, the ratio of (a) (i) Consolidated Total Funded Debt (as defined in the Credit Agreement) as of such date less (ii) the sum of cash and cash equivalents of the Company and its subsidiaries on a dollar-for-dollar basis as of such date in excess of \$50,000 up to a maximum of \$200,000 (such that the maximum amount of reduction pursuant to this calculation does not exceed \$150,000) to (b) Consolidated EBITDA (as defined in the Credit Agreement), measured for the preceding 12 months (the "Leverage Ratio"), to not more than 3.50 to 1.00 (or 3.75 to 1.00 during material acquisition periods, subject to certain limitations). The Credit Agreement also includes a financial covenant requiring the ratio of Consolidated EBIT (as defined in the Credit Agreement) to Consolidated Total Interest Expense (as defined in the Credit Agreement), in each case, measured for the preceding 12 months, (the "Interest Coverage Ratio") to be not less than 2.75 to 1.00. As of December 31, 2018 and 2017, the Company was in compliance with all applicable covenants in the Credit Agreement and the 2016 Credit Agreement, respectively.

2016 Master Note Purchase Agreement

On April 20, 2017, pursuant to the 2016 NPA, and the 2016 First Supplement, the Company issued and sold to certain accredited institutional investors \$400,000 aggregate principal amount of senior unsecured notes consisting of \$150,000 aggregate principal amount, which will mature on April 20, 2024, with an annual interest rate of 3.24% (the "2024 Senior Notes") and \$250,000 aggregate principal amount, which will mature on April 20, 2027, with an annual interest rate of 3.49% (the "2027 Senior Notes" and collectively with the 2024 Senior Notes, the "2017A Senior Notes") in a private placement.

On March 21, 2018, the Company entered into that certain Amendment No. 1 to Master Note Purchase Agreement (the "2016 NPA First Amendment"), with each of the holders party thereto, which amended the 2016 NPA.

The 2016 NPA First Amendment, among other things, provided for certain amendments to the 2016 NPA to facilitate (i) certain conforming changes to align certain provisions of the 2016 NPA, the Assumed 2008 NPA (as defined below) and the Credit Agreement and (ii) the release of all subsidiary guarantors in relation to obligations under the 2016 NPA and the 2016 Senior Notes (as defined below) (the "2016 Release").

Pursuant to the terms and conditions of the 2016 NPA, the Company has outstanding senior unsecured notes (the "2016 Senior Notes") at December 31, 2018 consisting of (i) \$150,000 of 2.39% senior notes due June 1, 2021 (the "New 2021 Senior Notes"), (ii) \$200,000 of 2.75% senior notes due June 1, 2023 (the "2023 Senior Notes"), (iii) \$400,000 of 3.03% senior notes due June 1, 2026 (the "2026 Senior Notes") and (iv) \$400,000 of the 2017A Senior Notes.

The New 2021 Senior Notes, the 2023 Senior Notes, the 2026 Senior Notes and the 2017A Senior Notes bear interest at fixed rates with interest payable in arrears semi-annually, and on the respective maturity dates, until the principal thereunder becomes due and payable. The Company is amortizing the \$9,011 of debt issuance costs through the maturity dates of the respective notes.

Under the terms and conditions of the 2016 NPA, the Company is authorized to issue and sell notes in the aggregate principal amount of \$1,500,000, inclusive of the outstanding \$1,150,000 aggregate principal amount of 2016 Senior Notes that have been issued and sold by the Company, provided that the purchasers of the 2016 Senior Notes shall not have any obligation to purchase any additional notes issued pursuant to the 2016 NPA.

The 2016 Senior Notes are unsecured obligations and rank *pari passu* with obligations under the Credit Agreement and the 2008 Senior Notes (defined below). Following the 2016 Release, there are currently no subsidiary guarantors in relation to the obligations under the 2016 NPA or the 2016 Senior Notes.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The 2016 Senior Notes are subject to representations, warranties, covenants and events of default customary for a private placement of senior unsecured notes. Upon the occurrence of an event of default, payment of the 2016 Senior Notes may be accelerated by the holders of the 2016 Senior Notes. The 2016 Senior Notes may also be prepaid by the Company at par plus a make-whole amount determined by the amount of the excess, if any, of the discounted value of the remaining scheduled payments with respect to the called principal of such 2016 Senior Notes minus the amount of such called principal, provided that the make whole shall in no event be less than zero. The discounted value is determined using market-based discount rates. In addition, the Company will be required to offer to prepay the 2016 Senior Notes upon certain changes in control. The 2016 NPA also contemplates certain offers of prepayments for specified tax reasons or certain noteholder sanctions events. The 2016 NPA requires that the Company comply with the specified quarterly leverage ratio and interest coverage ratio, in each case, as of the last day of each fiscal quarter. The required leverage ratio cannot exceed 3.75 to 1.00. The required interest coverage ratio must not be less than 2.75 to 1.00. As of December 31, 2018 and 2017, the Company was in compliance with all applicable covenants in the 2016 NPA.

2008 Master Note Purchase Agreement

On June 1, 2016, prior to the closing of the Progressive Waste acquisition, Old Waste Connections, certain subsidiaries of Old Waste Connections (together with Old Waste Connections, the “Obligors”) and certain holders of the 2008 Senior Notes (defined below) entered into that certain Amendment No. 6 to that certain Master Note Purchase Agreement, dated July 15, 2008 (as amended, restated, amended and restated, supplemented or otherwise modified prior to the Assumption Agreement (as defined below), the “2008 NPA”). Following the closing of the Progressive Waste acquisition, the Company entered into that certain Assumption and Exchange Agreement (as amended, restated, amended and restated, supplemented or modified from time to time, the “Assumption Agreement”) with Old Waste Connections, to and in favor of the holders of the notes issued from time to time under the 2008 NPA (the 2008 NPA, as assumed and modified by the Assumption Agreement, and as further amended, restated, amended and restated, supplemented or otherwise modified from time to time, the “Assumed 2008 NPA”).

On March 21, 2018, the Company entered into that certain Amendment No. 7 to the Assumed 2008 NPA (the “2008 NPA Seventh Amendment”), with each of the holders party thereto, which amended the Assumed 2008 NPA. The 2008 NPA Seventh Amendment, among other things, provided certain amendments to the Assumed 2008 NPA to facilitate (i) certain conforming changes to align the provisions of the Assumed 2008 NPA, the 2016 NPA and the Credit Agreement and (ii) the release of all subsidiary guarantors in relation to obligations under the Assumed 2008 NPA and the 2008 Senior Notes (the “2008 Release”).

Pursuant to the terms and conditions of the Assumed 2008 NPA, the Company has outstanding senior unsecured notes (the “2008 Senior Notes”) at December 31, 2018 consisting of \$175,000 of 5.25% senior notes due 2019 (the “2019 Senior Notes”), \$100,000 of 4.64% senior notes due 2021 (the “2021 Senior Notes”), \$125,000 of 3.09% senior notes due 2022 (the “2022 Senior Notes”) and \$375,000 of 3.41% senior notes due 2025 (the “2025 Senior Notes”). The Company is amortizing the \$3,863 of debt issuance costs through the maturity dates of the respective notes. The Company redeemed at maturity its \$50,000 of 4.00% senior notes due April 2018 (the “2018 Senior Notes”) on April 2, 2018.

Under the terms and conditions of the Assumed 2008 NPA, the Company is authorized to issue and sell notes in the aggregate principal amount of \$1,250,000, inclusive of the outstanding \$775,000 aggregate principal amount of 2008 Senior Notes assumed by the Company on June 1, 2016, provided that the purchasers of the 2008 Senior Notes shall not have any obligation to purchase any additional notes issued pursuant to the Assumed 2008 NPA.

The 2008 Senior Notes are unsecured obligations and rank *pari passu* with obligations under the Credit Agreement and the 2016 Senior Notes. Following the 2008 Release, there are no subsidiary guarantors in relation to the Company’s obligations under the Assumed 2008 NPA or the 2008 Senior Notes.

The 2008 Senior Notes are subject to representations, warranties, covenants and events of default customary for a private placement of senior unsecured notes. Upon the occurrence of an event of default, payment of the 2008 Senior Notes may be accelerated by the holders of the 2008 Senior Notes. The 2008 Senior Notes may also be prepaid by the Company at par plus a make-whole amount determined by the amount of excess, if any, of the discounted value of the remaining scheduled payments with respect to the called principal of such 2008 Senior Notes minus the amount of such called principal, provided that the make whole shall in no event be less than zero. The discounted value is determined using market-based discount rates. In addition, the Company will be required to offer to prepay the 2008 Senior Notes upon certain changes in control; however, no such prepayment offer was accepted in connection with the Progressive Waste acquisition. The Assumed 2008 NPA also contemplates certain offers of prepayments for specified tax reasons or certain noteholder sanctions events. The Assumed 2008 NPA requires that the Company comply with the specified quarterly leverage ratio and interest coverage ratio, in each case, as of the last day of each fiscal quarter. The required leverage ratio cannot exceed 3.75 to 1.00. The required interest coverage ratio must not be less than 2.75 to 1.00. As of December 31, 2018 and 2017, the Company was in compliance with all applicable covenants in the Assumed 2008 NPA.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

2028 Senior Notes

On November 16, 2018, the Company completed an underwritten public offering of \$500,000 aggregate principal amount of its 4.250% Senior Notes due 2028 (the "2028 Senior Notes"). The 2028 Senior Notes were issued under the Indenture, dated as of November 16, 2018 (the "Base Indenture"), by and between the Company and U.S. Bank National Association, as trustee (the "Trustee"), as supplemented by the First Supplemental Indenture, dated as of November 16, 2018 (the Base Indenture as so supplemented, the "Indenture").

The Company will pay interest on the 2028 Senior Notes semi-annually, commencing on June 1, 2019, and the 2028 Senior Notes will mature on December 1, 2028. The 2028 Senior Notes are the Company's senior unsecured obligations, ranking equally in right of payment with its other existing and future unsubordinated debt and senior to any of its future subordinated debt. The 2028 Senior Notes are not guaranteed by any of the Company's subsidiaries. The Company is amortizing the \$5,052 of debt issuance costs through the maturity date of the note.

The Company may redeem some or all of the 2028 Senior Notes at its option prior to September 1, 2028 (three months before the maturity date) at any time and from time to time at a redemption price equal to the greater of 100% of the principal amount of the 2028 Senior Notes redeemed, or the sum of the present values of the remaining scheduled payments of principal and interest on the 2028 Senior Notes redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. Commencing on September 1, 2028 (three months before the maturity date), the Company may redeem some or all of the 2028 Senior Notes, at any time and from time to time, at a redemption price equal to the principal amount of the 2028 Senior Notes being redeemed plus accrued and unpaid interest to, but excluding, the redemption date.

Under certain circumstances, the Company may become obligated to pay additional amounts (the "Additional Amounts") with respect to the 2028 Senior Notes to ensure that the net amounts received by each holder of the 2028 Senior Notes will not be less than the amount such holder would have received if withholding taxes or deductions were not incurred on a payment under or with respect to the 2028 Senior Notes. If such payment of Additional Amounts are a result of a change in the laws or regulations, including a change in any official position, the introduction of an official position or a holding by a court of competent jurisdiction, of any jurisdiction from or through which payment is made by or on behalf of the Notes having power to tax, and the Company cannot avoid such payments of Additional Amounts through reasonable measures, then the Company may redeem the 2028 Senior Notes then outstanding at a redemption price equal to 100% of the principal amount thereof, plus accrued and unpaid interest, if any, to, but excluding, the redemption date (subject to the right of holders of record on the relevant record date to receive interest due on an interest payment date that is on or prior to the redemption date).

If the Company experiences certain kinds of changes of control, each holder of the 2028 Senior Notes may require the Company to repurchase all or a portion of the 2028 Senior Notes for cash at a price equal to 101% of the aggregate principal amount of such 2028 Senior Notes, plus any accrued but unpaid interest to the date of repurchase.

The covenants in the Indenture include limitations on liens, sale-leaseback transactions and mergers and sales of all or substantially all of the Company's assets. The Indenture also includes customary events of default with respect to the 2028 Senior Notes. As of December 31, 2018, the Company was in compliance with all applicable covenants in the Indenture.

Upon an event of default, the principal of and accrued and unpaid interest on all the 2028 Senior Notes may be declared to be due and payable by the Trustee or the holders of not less than 25% in principal amount of the outstanding 2028 Senior Notes. Upon such a declaration, such principal and accrued interest on all of the 2028 Senior Notes will be due and payable immediately. In the case of an event of default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding 2028 Senior Notes will become and be immediately due and payable without any declaration or other act on the part of the Trustee or any holder of the 2028 Senior Notes.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Tax-Exempt Bonds

As discussed above, the Company assumed \$64,000 of tax-exempt bonds in the Progressive Waste acquisition which consisted of three industrial revenue bonds (“IRB”) including the Pennsylvania Economic Development Corporation IRB (“PA IRB Facility”), Mission Economic Development Corporation IRB (“TX IRB Facility”) and 2009 Seneca County Industrial Development Agency IRB (“2009 Seneca IRB Facility”). The Company’s tax-exempt bond financings are as follows:

Name of Bond	Type of Interest Rate	Interest Rate on Bond at December 31, 2018	Maturity Date of Bond	Outstanding Balance at December 31,		Backed by Letter of Credit (Amount)
				2018	2017	
West Valley Bond	Variable	-	August 1, 2018	\$ -	\$ 15,500	\$ -
LeMay Washington Bond	Variable	1.79%	April 1, 2033	15,930	15,930	16,126
PA IRB Facility	Variable	-	November 1, 2028	-	35,000	-
TX IRB Facility	Variable	-	April 1, 2022	-	24,000	-
2009 Seneca IRB Facility	Variable	-	December 31, 2039	-	5,000	-
				<u>\$ 15,930</u>	<u>\$ 95,430</u>	<u>\$ 16,126</u>

In February 2018, the Company gave notice to redeem its Pennsylvania Economic Development Corporation IRB Bond with a remaining principal balance of \$35,000. The Company paid in full the principal and accrued interest on this bond on April 2, 2018. In February 2018, the Company gave notice to redeem its Mission Economic Development Corporation IRB Bond with a remaining principal balance of \$24,000. The Company paid in full the principal and accrued interest on this bond on April 2, 2018. In July 2018, the Company gave notice to redeem its 2009 Seneca County Industrial Development Agency IRB Bond with a remaining principal balance of \$5,000. The Company paid in full the principal and accrued interest on this bond on September 4, 2018. The Company’s West Valley tax-exempt bond, with a principal amount of \$15,500, matured August 1, 2018. The Company paid in full the principal and accrued interest on this bond on August 1, 2018.

The outstanding LeMay Washington Bond is remarketed weekly by a remarketing agent to effectively maintain a variable yield. If the remarketing agent is unable to remarket the bond, then the remarketing agent can put the bond to the Company. The Company obtained a standby letter of credit, issued under the Credit Agreement, to guarantee repayment of the bond in this event. The Company classified this borrowing as long-term at December 31, 2018, because the borrowing was supported by a standby letter of credit issued under the Company’s Credit Agreement.

As of December 31, 2018, aggregate contractual future principal payments by calendar year on long-term debt are due as follows:

2019*	\$ 1,786
2020	1,380
2021	255,093
2022	126,451
2023	2,094,770
Thereafter	1,695,213
	<u>\$ 4,174,693</u>

* The Company has recorded the 2019 Senior Notes in the 2023 category in the table above as the Company has the intent and ability to redeem the 2019 Senior Notes on November 1, 2019 using borrowings under the Credit Agreement.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

9. FAIR VALUE OF FINANCIAL INSTRUMENTS

The Company uses a three-tier fair value hierarchy to classify and disclose all assets and liabilities measured at fair value on a recurring basis in periods subsequent to their initial measurement. These tiers include: Level 1, defined as quoted market prices in active markets for identical assets or liabilities; Level 2, defined as inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, model-based valuation techniques for which all significant assumptions are observable in the market, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and Level 3, defined as unobservable inputs that are not corroborated by market data.

The Company's financial assets and liabilities recorded at fair value on a recurring basis include derivative instruments and restricted cash and investments. The Company's derivative instruments are pay-fixed, receive-variable interest rate swaps and pay-fixed, receive-variable diesel fuel hedges. The Company's interest rate swaps are recorded at their estimated fair values based on quotes received from financial institutions that trade these contracts. The Company verifies the reasonableness of these quotes using similar quotes from another financial institution as of each date for which financial statements are prepared. The Company used a discounted cash flow ("DCF") model to determine the estimated fair value of the diesel fuel hedges. The assumptions used in preparing the DCF model included: (i) estimates for the forward DOE index curve; and (ii) the discount rate based on risk-free interest rates over the term of the hedge contracts. The DOE index curve used in the DCF model was obtained from financial institutions that trade these contracts and ranged from \$2.95 to \$3.00 at December 31, 2017. The weighted average DOE index curve used in the DCF model was \$2.96 at December 31, 2017. For the Company's interest rate swaps and fuel hedges, the Company also considers the Company's creditworthiness in its determination of the fair value measurement of these instruments in a net liability position and the counterparties' creditworthiness in its determination of the fair value measurement of these instruments in a net asset position. The Company's restricted cash and investments are valued at quoted market prices in active markets for similar assets, which the Company receives from the financial institutions that hold such investments on its behalf. The Company's restricted cash and investments measured at fair value are invested primarily in money market accounts, bank time deposits, U.S. government and agency securities and Canadian bankers' acceptance notes.

The Company's assets and liabilities measured at fair value on a recurring basis at December 31, 2018 and 2017, were as follows:

	Fair Value Measurement at December 31, 2018 Using			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Interest rate swap derivative instruments – net asset position	\$ 12,098	\$ -	\$ 12,098	\$ -
Restricted cash and investments	\$ 131,422	\$ -	\$ 131,422	\$ -
Contingent consideration	\$ (54,615)	\$ -	\$ -	\$ (54,615)

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

	Fair Value Measurement at December 31, 2017 Using			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Interest rate swap derivative instruments – net asset position	\$ 18,979	\$ -	\$ 18,979	\$ -
Fuel hedge derivative instruments – net asset position	\$ 3,880	\$ -	\$ -	\$ 3,880
Restricted cash and investments	\$ 165,592	\$ -	\$ 165,592	\$ -
Contingent consideration	\$ (47,285)	\$ -	\$ -	\$ (47,285)

The following table summarizes the changes in the fair value for Level 3 derivatives for the year ended December 31, 2017:

	Years Ended December 31,	
	2018	2017
Beginning balance	\$ 3,880	\$ (264)
Realized losses (gains) included in earnings	(6,531)	2,818
Unrealized gains included in AOCIL	2,651	1,326
Ending balance	<u>\$ -</u>	<u>\$ 3,880</u>

The following table summarizes the changes in the fair value for Level 3 liabilities related to contingent consideration for the years ended December 31, 2018 and 2017:

	Years Ended December 31,	
	2018	2017
Beginning balance	\$ 47,285	\$ 51,826
Contingent consideration recorded at acquisition date	11,669	2,885
Payment of contingent consideration recorded at acquisition date	(6,127)	(17,158)
Payment of contingent consideration recorded in earnings	(11)	(10,012)
Adjustments to contingent consideration	349	17,754
Interest accretion expense	1,756	1,746
Foreign currency translation adjustment	(306)	244
Ending balance	<u>\$ 54,615</u>	<u>\$ 47,285</u>

10. COMMITMENTS AND CONTINGENCIES

COMMITMENTS

Leases

The Company rents certain equipment and facilities under both short-term agreements and non-cancelable operating lease agreements for periods ranging from one to 35 years. The Company's total rent expense for equipment during the years ended December 31, 2018, 2017 and 2016, was \$11,879, \$14,367 and \$12,132, respectively. The Company's total rent expense for facilities during the years ended December 31, 2018, 2017 and 2016, was \$30,767, \$29,016 and \$23,527, respectively.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

As of December 31, 2018, future minimum lease payments, by calendar year, are as follows:

2019	\$ 37,902
2020	35,204
2021	32,259
2022	30,974
2023	27,882
Thereafter	94,205
	<u>\$ 258,426</u>

Financial Surety Bonds

The Company uses financial surety bonds for a variety of corporate guarantees. The two largest uses of financial surety bonds are for municipal contract performance guarantees and asset closure and retirement requirements under certain environmental regulations. Environmental regulations require demonstrated financial assurance to meet final capping, closure and post-closure requirements for landfills. In addition to surety bonds, these requirements may also be met through alternative financial assurance instruments, including insurance, letters of credit and restricted cash and investment deposits.

At December 31, 2018 and 2017, the Company had provided customers and various regulatory authorities with surety bonds in the aggregate amounts of approximately \$619,830 and \$609,561, respectively, to secure its asset closure and retirement requirements and \$357,820 and \$281,459, respectively, to secure performance under collection contracts and landfill operating agreements.

The Company owns a 9.9% interest in a company that, among other activities, issues financial surety bonds to secure landfill final capping, closure and post-closure obligations for companies operating in the solid waste industry. The Company accounts for this investment under the cost method of accounting. There have been no identified events or changes in circumstances that may have a significant adverse effect on the carrying value of the investment. This investee company and the parent company of the investee have written financial surety bonds for the Company, of which \$381,770 and \$410,280 were outstanding as of December 31, 2018 and 2017, respectively. The Company's reimbursement obligations under these bonds are secured by a pledge of its stock in the investee company.

Unconditional Purchase Obligations

At December 31, 2018, the Company's unconditional purchase obligations consist of multiple fixed-price fuel purchase contracts under which it has 37.0 million gallons remaining to be purchased for a total of \$96,397. These fuel purchase contracts expire on or before February 28, 2021.

As of December 31, 2018, future minimum purchase commitments, by calendar year, are as follows:

2019	\$ 66,774
2020	29,446
2021	177
	<u>\$ 96,397</u>

CONTINGENCIES

Environmental Risks

The Company expenses costs incurred to investigate and remediate environmental issues unless they extend the economic useful lives of the related assets. The Company records liabilities when it is probable that an obligation has been incurred and the amounts can be reasonably estimated. The remediation reserves cover anticipated costs, including remediation of environmental damage that waste facilities may have caused to neighboring landowners or residents as a result of contamination of soil, groundwater or surface water, including damage resulting from conditions existing prior to the Company's acquisition of such facilities. The Company's estimates are based primarily on investigations and remediation plans established by independent consultants, regulatory agencies and potentially responsible third parties. The Company does not discount remediation obligations. At December 31, 2018 and 2017, the current portion of remediation reserves was \$3,592 and \$2,315, respectively, which is included in Accrued liabilities in the Consolidated Balance Sheets. At December 31, 2018 and 2017, the long-term portion of remediation reserves was \$18,362 and \$19,368, respectively, which is included in Other long-term liabilities in the Consolidated Balance Sheets. Any substantial increase in the liabilities for remediation of environmental damage incurred by the Company could have a material adverse effect on the Company's financial condition, results of operations or cash flows.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Legal Proceedings

In the normal course of its business and as a result of the extensive governmental regulation of the solid waste and E&P waste industries, the Company is subject to various judicial and administrative proceedings involving Canadian regulatory authorities as well as U.S. federal, state and local agencies. In these proceedings, an agency may subpoena the Company for records, or seek to impose fines on the Company or revoke or deny renewal of an authorization held by the Company, including an operating permit. From time to time, the Company may also be subject to actions brought by special interest or other groups, adjacent landowners or residents in connection with the permitting and licensing of landfills, transfer stations, and E&P waste treatment, recovery and disposal operations, or alleging environmental damage or violations of the permits and licenses pursuant to which the Company operates.

In addition, the Company is a party to various claims and suits pending for alleged damages to persons and property, alleged violations of certain laws and alleged liabilities arising out of matters occurring during the normal operation of the Company's business. Except as noted in the matters described below, as of December 31, 2018, there is no current proceeding or litigation involving the Company or its property that the Company believes could have a material adverse effect on its business, financial condition, results of operations or cash flows.

Lower Duwamish Waterway Superfund Site Allocation Process

In November 2012, the Company's subsidiary, Northwest Container Services, Inc. ("NWCS"), was named by the U.S. Environmental Protection Agency, Region 10 (the "EPA") as a potentially responsible party ("PRP"), along with more than 100 others, under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA" or the "Superfund" law) with respect to the Lower Duwamish Waterway Superfund Site (the "LDW Site"). Listed on the National Priorities List in 2001, the LDW Site is a five-mile stretch of the Duwamish River flowing into Elliott Bay in Seattle, Washington. A group of PRPs known as the Lower Duwamish Working Group ("LDWG") and consisting of the City of Seattle, King County, the Port of Seattle, and Boeing Company conducted a Remedial Investigation/Feasibility Study for the LDW Site. On December 2, 2014, the EPA issued its Record of Decision (the "ROD") describing the selected clean-up remedy, and therein estimated that clean-up costs (in present value dollars as of November 2014) would total approximately \$342,000. However, it is possible that additional costs could be incurred based upon various factors. The EPA estimates that it will take seven years to implement the clean-up. The ROD also requires ten years of monitoring following the clean-up, and provides that if clean-up goals have not been met by the end of this period, then additional clean-up activities, at additional cost, may be required at that time. Implementation of the clean-up will not begin until after the ongoing Early Action Area ("EAA") clean-ups have been completed. Typically, costs for monitoring may be in addition to those expended for the clean-up. While three of the EAA clean-ups have been completed to date, some work remains to be done on three other EAAs. Implementation of the clean-up also must await additional baseline sampling throughout the LDW Site and the preparation of a remedial design for performing the clean-up. On April 27, 2016, the LDWG entered into a third amendment of its Administrative Order on Consent with the EPA (the "AOC 3") in which it agreed to perform the additional baseline sediment sampling and certain technical studies needed to prepare the actual remedial design. The LDWG and EPA entered into a fourth amendment to the AOC in July 2018 primarily addressing development of a proposed remedy for the upper reach of the LDW Site, river mile 3 to river mile 5.

On August 16, 2016, the EPA sent individual letters to each of the PRPs for the LDW Site, including NWCS, stating that it expects to initiate negotiations with all PRPs in early 2018 relating to a Remedial Design/Remedial Action ("RD/RA") Consent Decree. An RD/RA Consent Decree provides for the cleanup of the entire site and is often referred to as a "global settlement." In August 2014, NWCS entered into an Alternative Dispute Resolution Memorandum of Agreement with several dozen other PRPs and a neutral allocator to conduct a confidential and non-binding allocation of certain past response costs allegedly incurred at the LDW Site as well as the anticipated future response costs associated with the clean-up. The pre-remedial design work under the AOC 3 is now not expected to conclude until the end of 2019, and in March 2017, the PRPs provided the EPA with notice that the allocation is not scheduled to conclude until mid-2019. With recent extensions, the allocation is now scheduled to conclude in early 2020 and the EPA has been informed of the new schedule. In June 2017, attorneys for the EPA informed attorneys for several PRPs that the EPA expected to begin RD/RA negotiations in the late summer or early fall of 2018. Those negotiations have not been scheduled and there is no recent indication from the EPA regarding when they will begin. NWCS is defending itself vigorously in this confidential allocation process. At this point, the Company is not able to determine the likelihood of the allocation process being completed as intended by the participating PRPs, its specific allocation, or the likelihood of the parties then negotiating a global settlement with the EPA. Thus, NWCS cannot reasonably determine the likelihood of any outcome in this matter, including its potential liability.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

On February 11, 2016, NWCS received a letter (the "Letter") from the United States Department of Commerce, National Oceanic and Atmospheric Administration ("NOAA"), describing certain investigatory activities conducted by the Elliott Bay Trustee Council (the "Council"). The Council consists of all of the natural resources trustees for the LDW Site as well as two nearby Superfund sites, the Harbor Island site and the Lockheed West site. The members of the Council include the United States, on behalf of the U.S. National Oceanic and Atmospheric Administration and the U.S. Department of the Interior, the Washington State Department of Ecology, and the Suquamish and Muckleshoot Indian Tribes (together, the "Trustees"). The Letter appears to allege that NWCS may be a potentially liable party that allegedly contributed to the release of hazardous substances that have injured natural resources at the LDW Site. Damages to natural resources are in addition to clean-up costs. The Letter, versions of which NWCS believes were sent to all or a group of the PRPs for the LDW Site, also notified its recipients of their opportunity to participate in the Trustees' development of an Assessment Plan and the performance of a Natural Resources Damages Assessment ("NRDA") in accordance with the Assessment Plan for both the LDW Site and the east and west waterways of the Harbor Island site. NWCS timely responded with correspondence to the NOAA Office of General Counsel, in which it declined the invitation at that time. NWCS does not know how other PRPs responded to the Letter, and has not received any further communication from NOAA or the Trustees. The Trustees have not responded to NWCS' letter and NWCS is not aware of any further action by the Trustees with respect to the Assessment Plan and NRDA. At this point, the Company is not able to determine the likelihood or amount of an assessment of natural resource damages against NWCS in connection with this matter.

Los Angeles County, California Landfill Expansion Litigation

A. Chiquita Canyon, LLC Lawsuit Against Los Angeles County

In October 2004, the Company's subsidiary, Chiquita Canyon, LLC ("CCL"), then under prior ownership, filed an application (the "Application") with the County of Los Angeles (the "County") Department of Regional Planning ("DRP") for a conditional use permit (the "CUP") to authorize the continued operation and expansion of the Chiquita Canyon Landfill (the "Landfill"). The Landfill has operated since 1972, and as a regional landfill, accepted approximately three million tons of materials for disposal and beneficial use in 2016. The Application requested expansion of the existing waste footprint on CCL's contiguous property, an increase in maximum elevation, creation of a new entrance and new support facilities, construction of a facility for the County or another third-party operator to host household hazardous waste collection events, designation of an area for mixed organics/composting, and other modifications.

After many years of reviews and delays, upon the recommendation of County staff, the County's Regional Planning Commission (the "Commission") approved the Application on April 19, 2017, but imposed operating conditions, fees and exactions that substantially reduce the historical landfill operations and represent a large increase in aggregate taxes and fees. CCL objected to many of the requirements imposed by the Commission. Current estimates for new costs imposed on CCL under the CUP are in excess of \$300,000.

CCL appealed the Commission's decision to the County Board of Supervisors, but the appeal was not successful. At a subsequent hearing, on July 25, 2017, the Board of Supervisors approved the CUP. On October 20, 2017, CCL filed in the Superior Court of California, County of Los Angeles a verified petition for writ of mandate and complaint against the County and the County Board of Supervisors captioned *Chiquita Canyon, LLC v. County of Los Angeles*, No. BS171262 (Los Angeles Co. Super Ct.) (the "Complaint"). The Complaint challenges the terms of the CUP in 13 counts generally alleging that the County violated multiple California and federal statutes and California and federal constitutional protections. CCL seeks the following relief: (a) an injunction and writ of mandate against certain of the CUP's operational restrictions, taxes and fees, (b) a declaration that the challenged conditions are unconstitutional and in violation of state and federal statutes, (c) reimbursement for any such illegal fees paid under protest, (d) damages, (e) an award of just compensation for a taking, (f) attorney fees, and (g) all other appropriate legal and equitable relief.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

On December 6, 2017, the County filed a demurrer to the Complaint arguing that the Complaint is legally insufficient to proceed. At an initial trial-setting hearing on February 8, 2018, the Superior Court suggested that the Complaint should be amended to separate the claims seeking a writ of mandamus against the County. CCL filed its First Amended Complaint on March 23, 2018. The County filed its demurrer and motion to strike challenging portions of the First Amended Complaint on April 25, 2018. CCL filed its combined opposition to the demurrer and motion to strike on July 3, 2018. The County filed a combined reply brief on July 10, 2018. The hearing on the demurrer took place on July 17, 2018. The Court sustained the demurrer and granted the motion to strike. The effect of the Court's rulings is to bar CCL from proceeding with its challenges to 14 of the 29 CUP conditions at issue in the litigation, including 13 operational conditions and CCL's challenge to the \$11,600 B&T Fee discussed below. The Court set a trial date of June 18, 2019 for the remaining mandamus claims. The Court granted CCL leave to amend its Complaint if CCL chose to pay the \$11,600 B&T fee to allow a challenge to the B&T fee to proceed under the Mitigation Fee Act. CCL paid the \$11,600 B&T fee on August 10, 2018 and filed its Second Amended Complaint on August 16, 2018, reflecting that the B&T fee had been paid under protest and allowing the challenges to the B&T fee to go forward.

On September 14, 2018, CCL appealed to the California Court of Appeal the Superior Court's July 17, 2018 decision barring the challenge to 13 operational conditions. On October 5, 2018, the Court of Appeal decided to hear CCL's appeal and issued an order to show cause. CCL and the County completed briefing on November 20, 2018, and the Court of Appeal heard oral argument on January 9, 2019. CCL will continue to vigorously prosecute the lawsuit. However, at this point, the Company is not able to determine the likelihood of any outcome in this matter.

B. CEQA Lawsuit Against Los Angeles County Challenging Environmental Review for Landfill Expansion

A separate lawsuit involving CCL and the Landfill was filed on August 24, 2017 by community activists alleging that the environmental review underlying the CUP was inadequate under state law. The Val Verde Civic Association, Citizens for Chiquita Canyon Landfill Compliance, and the Santa Clarita Organization for Planning the Environment filed a petition for writ of mandate in the Superior Court of California, County of Los Angeles against the County, naming CCL as the real party in interest. The lawsuit seeks to overturn the County's approval of the CUP for the expansion of the Landfill and the certification of the final Environmental Impact Report, arguing that the report violates the California Environmental Quality Act. Pursuant to Condition No. 6 of the CUP, which requires CCL to defend, indemnify, and hold harmless the County, its agents, officers, and employees from any claim or proceeding against the County brought by any third party to attack, set aside, void, or annul the CUP approval, CCL has agreed to reimburse the County for its legal costs associated with defense of the lawsuit. As the real party in interest, CCL has a right to notice and an opportunity to be heard in opposition to the petition for writ of mandate. The petitioners filed their Opening Brief with the court on September 27, 2018. CCL filed its Opposition Brief with the court on November 28, 2018 and the petitioners filed their Reply Brief on December 20, 2018. A trial date had been scheduled for February 8, 2019, but on February 6, 2019, the court reassigned the case to a different judge and vacated the trial date, which has yet to be rescheduled by the court. CCL intends to vigorously defend the lawsuit as the real party in interest. However, at this point, the Company is not able to determine the likelihood of any outcome in this matter.

C. Solid Waste Management Fee Enforcement Order

On September 15, 2016, CCL received a letter from the County's Department of Public Works ("DPW"), which alleged that from October 2011 to September 2014, CCL underpaid the County Solid Waste Management Fee in violation of the Los Angeles County Code. An invoice totaling more than \$5,100, which included certain fees and penalties, was attached to the letter, with 30-day payment terms. DPW argues that the penalty continues to accrue, and as of July 31, 2018 the penalties were calculated by DPW at \$3,079, for a total fee and penalty assessment of \$5,515.

On September 29, 2016, CCL submitted an initial response to the DPW letter. CCL filed a protective administrative appeal on October 13, 2016. DPW responded on July 27, 2017, after the CUP was approved, rejecting CCL's arguments and stating its intention to proceed with an Enforcement Order if the outstanding invoice was not paid. CCL responded on August 25, 2017, addressing each point raised by DPW and reiterated its position that no additional fees were due.

On August 30, 2017, DPW issued an Enforcement Order seeking payment of the Solid Waste Management Fee and the administrative penalties that had allegedly accrued through March 2015, together totaling more than \$5,100. CCL filed a timely administrative appeal of the order on September 28, 2017. CCL negotiated with County Counsel to set a briefing schedule, hearing date for the appeal, and selection of a neutral hearing officer. A prehearing order was entered on July 9, 2018 by the hearing officer and CCL and DPW proceeded to exchange briefs, exhibits, and written testimony of witnesses.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

A two-day evidentiary hearing on DPW's Enforcement Order occurred on September 11-12, 2018. CCL and DPW submitted post-hearing briefing on October 15 and October 30, 2018. It is uncertain when a decision will be issued. CCL has a right to challenge in State court any decision of the hearing officer that is not supported by the law or substantial evidence. At this point, the Company is not able to determine the likelihood of any outcome in this matter.

D. December 11, 2017 Notice of Violation Regarding Certain CUP Conditions.

The County, through its DRP, issued a Notice of Violation, dated December 11, 2017 (the "NOV"), alleging that CCL violated certain conditions of the CUP, including Condition 79(B)(6) of the CUP by failing to pay an \$11,600 Bridge & Thoroughfare Fee ("B&T Fee") that was purportedly due on July 25, 2017. The alleged B&T fee was ostensibly to fund the construction of transportation infrastructure in the area of the Landfill. At the time the NOV was issued, CCL had already contested the legality of the B&T fee in the October 20, 2017 Complaint filed against the County in Los Angeles County Superior Court.

On January 12, 2018, CCL filed an appeal of the alleged violations in the NOV. Subsequently, CCL filed additional legal arguments and exhibits contesting the NOV. On March 6, 2018, a DRP employee designated as hearing officer sustained the NOV, including the \$11,600 B&T fee, and imposed an administrative penalty in the amount of \$83 and a noncompliance fee of \$0.75. A written decision memorializing the hearing officer's findings and order, dated July 10, 2018, was received by CCL on July 12, 2018. On April 13, 2018, CCL filed in the Superior Court of California, County of Los Angeles a Petition for Writ of Administrative Mandamus against the County seeking to overturn the decision sustaining the NOV, contending that the NOV and decision are not supported by the facts or law. On June 22, 2018, Chiquita filed a Motion for Stay seeking to halt enforcement of the B&T fee and penalty and the accrual of any further penalties pending the resolution of the Petition for Writ of Mandamus. The motion was heard and denied by the Court on July 17, 2018. As explained above, the Court granted CCL leave to pay the \$11,600 B&T fee and to amend its Complaint to reflect the payment under protest, allowing the challenge to the B&T fee to proceed. CCL paid the B&T fee on August 10, 2018, and also paid on that date the administrative penalty of \$83 and a noncompliance fee of \$0.75. As directed by the Court, CCL amended its Complaint in a Second Amended Complaint filed in the CUP action on August 16, 2018. The Court indicated that the NOV case would likely be tried in conjunction with the CUP case, set for June 18, 2019, and that the cases would be coordinated. At this point, the Company is not able to determine the likelihood of any outcome in this matter.

Florida Default Judgment

On January 5, 2017, a state court in Miami, Florida entered a \$10,000 final judgment ("Judgment") against the Company's subsidiary, Progressive Waste Solutions of FL, Inc. ("Progressive"), which is now known as Waste Connections of Florida, Inc. The Judgment was the result of a default against Progressive for failure to respond to or otherwise defend itself against a complaint filed on July 21, 2015, prior to the closing of the Progressive Waste acquisition. The Company and Progressive learned of the Judgment on March 6, 2018. On March 20, 2018, Progressive filed a motion to set aside judgment and requested that the trial court (1) allow the case to proceed on the merits, (2) stay any efforts to execute or collect on the Judgment, and (3) dissolve any and all writs of garnishment. The trial judge denied the motion on April 10, 2018. On May 2, 2018, Progressive filed an appeal of the April 10, 2018 order and posted a civil supersedeas bond to stop all efforts to collect on the Judgment pending the outcome of its appeal. The appeal was fully briefed and oral argument occurred on December 4, 2018. On December 19, 2018, the Third District Court of Appeal of Florida (the "appellate court") affirmed the Judgment. On January 3, 2019, Progressive filed motions for rehearing, clarification, written opinion, and rehearing en banc, as well as a motion for certification. The appellate court denied those motions on January 23, 2019. Progressive continues to vigorously defend itself from the Judgment. Progressive is seeking further review from the Florida Supreme Court. On January 30, 2019, Progressive filed its Notice to Invoke Discretionary Jurisdiction of the Florida Supreme Court. Also on January 30, 2019, Progressive filed a motion in the appellate court to stay issuance of that court's mandate pending review by the Florida Supreme Court to allow the stay on collection to remain in place. This motion remains pending. On February 7, 2019, Progressive filed its jurisdictional brief with the Florida Supreme Court. If the Florida Supreme Court accepts jurisdiction, it will set a briefing schedule on the merits, the timing of which is uncertain. In light of the appellate court's affirmance, however, the Company has accrued \$11,043 for the Judgment as of December 31, 2018.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Town of Colonie, New York Landfill Expansion Litigation

On April 16, 2014, the Town of Colonie filed an application (the “Application”) with the New York State Department of Environmental Conservation (“DEC”) to modify the Town’s then-current Solid Waste Management Facility Permit and for other related permits to authorize the development and operation of Area 7 of the Town of Colonie Landfill (the “Landfill”), which is located in Albany County, New York. DEC issued the requested permits on April 5, 2018 (the “Permits”). The Company’s subsidiary, Capital Region Landfills, Inc. (“CRL”), has been the sole operator of the Landfill since September 2011 pursuant to an operating agreement between CRL and the Town.

On May 7, 2018, the Town of Halfmoon, New York, and five of its residents, commenced an Article 78 special proceeding in the Supreme Court of the State of New York, Saratoga County, against DEC, the Town, CRL, and the Company (the “Halfmoon Proceeding”). On that same date, the Town of Waterford, New York, and eleven of its residents, also commenced an Article 78 special proceeding in the Supreme Court of the State of New York, Saratoga County, against the same respondents (the “Waterford Proceeding”). On June 4, 2018, the Town and CRL filed Verified Answers, including motions to dismiss the petitions, and the Company separately moved to dismiss the petitions. The Waterford Petitioners stipulated to removing the Company as a respondent when they filed an Amended Verified Petition on June 15, 2018. The Halfmoon Petitioners served an Amended Verified Petition on July 5, 2018, retaining all originally-named parties, including the Company.

The Petitioners alleged that, in granting the Permits, DEC failed to comply with the procedural and substantive requirements of New York’s Environmental Conservation Law and State Environmental Quality Review Act, and their implementing regulations. The Petitioners asked the court to: annul the Permits and invalidate DEC’s Findings Statement, enjoin the Town and CRL from taking any action authorized by the Permits, require an issues conference and possibly an adjudicatory hearing before DEC can re-consider the Town’s permit application; remand all regulatory issues to a DEC Administrative Law Judge; and award costs and disbursements. The Waterford Petitioners also requested reasonable attorneys’ fees.

On July 13, 2018, the court granted a venue change motion filed by DEC, and ordered that the Halfmoon Proceeding and the Waterford Proceeding be transferred to the Supreme Court, Albany County. CRL’s opposition submissions, including its responsive pleadings, Memorandum of Law, and supporting Affidavits, were filed and served on or before July 25, 2018. On August 28, 2018, the Towns of Waterford and Halfmoon filed a motion seeking an order preliminarily enjoining during the pendency of the proceedings all activities relating to the expansion of the Landfill which are authorized by the Permits. On September 18, 2018, CRL and the Company filed and served Memoranda of Law in opposition to the preliminary injunction motion, with supporting Affidavits, and, on September 24, 2018, the Towns of Waterford and Halfmoon filed a Reply Memorandum of Law in further support of their injunctive motion. The court denied the Petitioners’ motion for preliminary injunction on November 30, 2018.

On January 23, 2019, the court held that the Petitioners lacked standing to maintain the proceedings and dismissed both the Waterford and Halfmoon Amended Verified Petitions in their entirety. The Company and CRL will know by late February 2019, at the latest, whether any or all of the Petitioners intend to appeal the court’s decisions.

Collective Bargaining Agreements

Thirty of the Company’s collective bargaining agreements have expired or are set to expire in 2019. The Company does not expect any significant disruption in its overall business in 2019 as a result of labor negotiations, employee strikes or organizational efforts.

11. SHAREHOLDERS’ EQUITY

Share split

On April 26, 2017, the Company announced that its Board of Directors approved a split of its common shares on a three-for-two basis, which was approved by its shareholders at the Company’s Annual and Special Meeting of Shareholders on May 23, 2017. Shareholders of record on June 7, 2017 received from the Company’s transfer agent on June 16, 2017, one additional common share for every two common shares held. All share and per share amounts for all periods presented have been retroactively adjusted to reflect the share split.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Cash Dividend

The Board of Directors of Old Waste Connections authorized the initiation of a quarterly cash dividend in October 2010 and has increased it on an annual basis. In October 2018, the Company announced that its Board of Directors increased its regular quarterly cash dividend by \$0.02, from \$0.14 to \$0.16 per Company common share. Cash dividends of \$152,550, \$131,975 and \$92,547 were paid during the years ended December 31, 2018, 2017 and 2016, respectively.

Normal Course Issuer Bid

On July 24, 2018, the Board of Directors of the Company approved, subject to receipt of regulatory approvals, the annual renewal, of the Company's normal course issuer bid (the "NCIB") to purchase up to 13,174,976 of the Company's common shares during the period of August 8, 2018 to August 7, 2019 or until such earlier time as the NCIB is completed or terminated at the option of the Company. The renewal followed the conclusion of the Company's NCIB that expired August 7, 2018. The Company received Toronto Stock Exchange (the "TSX") approval for its annual renewal of the NCIB on August 2, 2018. Under the NCIB, the Company may make share repurchases only in the open market, including on the NYSE, the TSX, and/or alternative Canadian trading systems, at the prevailing market price at the time of the transaction.

In accordance with TSX rules, any daily repurchases made through the TSX and alternative Canadian trading systems is limited to a maximum of 71,114 common shares, which represents 25% of the average daily trading volume on the TSX of 284,459 common shares for the period from February 1, 2018 to July 31, 2018. The TSX rules also allow the Company to purchase, once a week, a block of common shares not owned by any insiders, which may exceed such daily limit. The maximum number of shares that can be purchased per day on the NYSE will be 25% of the average daily trading volume for the four calendar weeks preceding the date of purchase, subject to certain exceptions for block purchases.

The timing and amounts of any repurchases pursuant to the NCIB will depend on many factors, including the Company's capital structure, the market price of the common shares and overall market conditions. All common shares purchased under the NCIB shall be immediately cancelled following their repurchase.

For the year ended December 31, 2018, the Company repurchased 831,704 common shares pursuant to its NCIB in effect during such period at an aggregate cost of \$58,928. For the year ended December 31, 2017, the Company did not repurchase any common shares pursuant to the NCIB in effect during that period. For the year ended December 31, 2016, the Company did not repurchase any common shares pursuant to the NCIB in effect during that period nor did Old Waste Connections repurchase shares of its common stock pursuant to its share repurchase program. As of December 31, 2018, the remaining maximum number of shares available for repurchase under the current NCIB was 12,937,746.

Common Shares

Shares of Old Waste Connections common stock were converted into common shares of New Waste Connections, which do not have a stated par value; therefore, the portion of additional paid-in capital representing the amount of common shares issued above par for Old Waste Connections was reclassified into common shares of New Waste Connections during the year ended December 31, 2016. The Company is authorized to issue an unlimited number of common shares, and uses reserved but unissued common shares to satisfy its obligations under its equity-based compensation plans. As of December 31, 2018, the Company has reserved the following common shares for issuance:

For outstanding RSUs, PSUs and warrants	2,052,234
For future grants under the 2016 Incentive Award Plan	6,033,454
	<u>8,085,688</u>

Common Shares Held in Trust

Common shares held in trust consist of shares of New Waste Connections held in a trust that were acquired by Progressive Waste prior to June 1, 2016 for the benefit of its U.S. and Canadian employees participating in certain share-based compensation plans. A total of 735,171 common shares were held in the trust on June 1, 2016 when it was acquired by the Company in the Progressive Waste acquisition. Common shares held in trust are classified as treasury shares in the Company's Consolidated Balance Sheets. The Company will sell shares out of the trust and remit cash or shares to employees and non-employee directors as restricted share units vest and deferred share units settle, under the Progressive Waste share-based compensation plans that were continued by the Company. During the years ended December 31, 2018 and 2017 and during the period of June 1, 2016 to December 31, 2016, the Company sold 36,244, 171,264 and 397,774 common shares held in the trust, respectively, to settle vested restricted share units and deferred share units.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Special Shares

The Company is authorized to issue an unlimited number of special shares. Holders of special shares are entitled to one vote in matters of the Company for each special share held. The special shares carry no right to receive dividends or to receive the remaining property or assets of the Company upon dissolution or wind-up. At December 31, 2018, 2017 and 2016, no special shares were issued.

Preferred Shares

The Company is authorized to issue an unlimited number of preferred shares, issuable in series. Each series of preferred shares issued shall have rights, privileges, restrictions and conditions as determined by the Board of Directors prior to their issuance. Preferred shareholders are not entitled to vote, but take preference over the common shareholders rights in the remaining property and assets of the Company in the event of dissolution or wind-up. At December 31, 2018, 2017 and 2016, no preferred shares were issued.

Restricted Share Units, Performance-Based Restricted Share Units, Share Options and Share Purchase Warrants

As a result of the Progressive Waste acquisition, each Old Waste Connections restricted stock unit award, deferred restricted stock unit award and warrant outstanding immediately prior to the Progressive Waste acquisition was automatically converted into a restricted share unit award, deferred restricted share unit award or warrant, as applicable, relating to an equal number of common shares of New Waste Connections, on the same terms and conditions as were applicable immediately prior to the Progressive Waste acquisition under such Old Waste Connections equity award. Such conversion of Old Waste Connections equity awards was approved by the Company's shareholders at its shareholder meeting as part of the shareholders' approval of the Progressive Waste acquisition. At its meeting on June 1, 2016, the Company's Board of Directors approved the assumption by the Company of the Old Waste Connections 2014 Incentive Plan Award (the "2014 Plan"), the Old Waste Connections Third Amended and Restated 2004 Equity Incentive Plan (the "2004 Plan"), and the Old Waste Connections Consultant Incentive Plan (the "Consultant Plan," and, together with the 2014 Plan and the 2004 Plan, the "Assumed Old Waste Connections Plans") for the purposes of administering the Assumed Old Waste Connections Plans and the awards issued thereunder. No additional awards will be made under any of the Assumed Old Waste Connections Plans. Upon the vesting, expiration, exercise in accordance with their terms or other settlement of all of the awards made pursuant to an Assumed Old Waste Connections Plan, such Assumed Old Waste Connections Plan shall automatically terminate.

Participation in the 2004 Plan was limited to employees, officers, directors and consultants. Restricted share units ("RSUs") granted under the 2004 Plan generally vest in installments pursuant to a vesting schedule set forth in each agreement. Old Waste Connections' Board of Directors authorized the granting of awards under the 2004 Plan, and determined the employees and consultants to whom such awards were to be granted, the number of shares subject to each award, and the exercise price, term, vesting schedule and other terms and conditions of each award. RSU awards granted under the plan did not require any cash payment from the participant to whom an award was made. No grants have been made under the 2004 Plan since May 16, 2014 pursuant to the approval by Old Waste Connections' stockholders of the 2014 Plan on such date.

The 2014 Plan also authorized the granting of RSUs, as well as performance awards payable in the form of the Company's common shares or cash, including equity awards and incentive cash bonuses that may have been intended to qualify as "performance-based compensation" under Section 162(m) of the Internal Revenue Code of 1986, as amended ("Section 162(m)"). Participation in the 2014 Plan was limited to employees and consultants of the Company and its subsidiaries and non-employee directors. The 2014 Plan is administered by the Company's Board of Directors with respect to awards to non-employee directors and by its Compensation Committee with respect to other participants, each of which may delegate its duties and responsibilities to committees of the Company's directors and/or officers, subject to certain limitations (collectively, the "administrator").

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

RSUs granted under the 2014 Plan generally vest in installments pursuant to a vesting schedule set forth in each award agreement. RSU awards under the 2014 plan do not require any cash payment from the participant to whom an award was made. The vesting of performance awards, including performance-based restricted share units (“PSUs”), was dependent on one or more performance criteria determined by the administrator on a specific date or dates or over any period or periods determined by the administrator.

On June 1, 2016, the Company’s Board of Directors adopted the 2016 Incentive Award Plan (the “2016 Plan”), which was approved by Progressive Waste’s shareholders on May 26, 2016. On July 24, 2017, the Board of Directors approved certain housekeeping amendments to the 2016 Plan. The 2016 Plan, as amended, is administered by the Company’s Compensation Committee and provides that the aggregate number of common shares which may be issued from treasury pursuant to awards made under the 2016 Plan is 7,500,000 common shares. Awards under the 2016 Plan may be made to employees, consultants and non-employee directors and may be made in the form of options, warrants, restricted shares, restricted share units, performance awards (which may be paid in cash, common shares, or a combination thereof), dividend equivalent awards (representing a right of the holder thereof to receive the equivalent value (which may be paid in cash or common shares) of dividends paid on common shares), and share payments (a payment in the form of common shares or an option or other right to purchase common shares as part of a bonus, defined compensation or other arrangement). Non-employee directors are also eligible to receive deferred share units, which represent the right to receive a cash payment or its equivalent in common shares (or a combination of cash and common shares), or which may at the time of grant be expressly limited to settlement only in cash and not in common shares.

Restricted Share Units

A summary of the Company’s RSU activity is presented below:

	Years Ended December 31,		
	2018	2017	2016
Restricted share units granted	496,217	415,954	456,223
Weighted average grant-date fair value of restricted share units granted	\$ 69.22	\$ 57.09	\$ 38.38
Total fair value of restricted share units granted	\$ 34,348	\$ 23,748	\$ 17,510
Restricted share units becoming free of restrictions	486,885	571,258	646,761
Weighted average restriction period (in years)	3.5	3.8	3.9

A summary of activity related to RSUs during the year ended December 31, 2018, is presented below:

	Unvested Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at December 31, 2017	1,042,014	\$ 41.97
Granted	496,217	69.22
Forfeited	(63,783)	55.88
Vested and issued	(483,232)	38.68
Vested and deferred	(3,653)	28.28
Outstanding at December 31, 2018	<u>987,563</u>	56.43

Recipients of the Company’s RSUs who participate in the Company’s Nonqualified Deferred Compensation Plan may have elected in years prior to 2015 to defer some or all of their RSUs as they vest until a specified date or dates they choose. At the end of the deferral periods, unless a qualified participant makes certain other elections, the Company issues to recipients who deferred their RSUs common shares of the Company underlying the deferred RSUs. At December 31, 2018, 2017 and 2016, the Company had 264,374, 351,570 and 365,694 vested deferred RSUs outstanding, respectively.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Performance-Based Restricted Share Units

A summary of the Company's PSU activity is presented below:

	Years Ended December 31,		
	2018	2017	2016
PSUs granted	178,377	210,103	221,466
Weighted average grant-date fair value of PSUs granted	\$ 68.77	\$ 56.55	\$ 37.83
Total fair value of PSUs granted	\$ 12,266	\$ 11,881	\$ 8,379
PSUs becoming free of restrictions	154,181	122,786	184,440
Weighted average restriction period (in years)	3.6	3.6	4.0

A summary of activity related to PSUs during the year ended December 31, 2018, is presented below:

	Unvested Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at December 31, 2017	514,461	\$ 43.42
Granted	178,377	68.77
Forfeited	(6,571)	63.38
Vested and Issued	(154,181)	38.18
Outstanding at December 31, 2018	<u>532,086</u>	53.43

During the year ended December 31, 2018, the Company's Compensation Committee granted PSUs with three-year performance-based metrics that the Company must meet before those awards may be earned, and the performance period for those grants ends on December 31, 2020. During the same period, the Company's Compensation Committee also granted PSUs with a one-year performance-based metric that the Company must meet before those awards may be earned, with the awards then subject to time-based vesting for the remaining three years of their four-year vesting period. During the year ended December 31, 2017, the Company's Compensation Committee granted PSUs with three-year performance-based metrics that the Company must meet before those awards may be earned, and the performance period for those grants ends on December 31, 2019. During the same period, the Company's Compensation Committee also granted PSUs with a one-year performance-based metric that the Company must meet before those awards may be earned, with the awards then subject to time-based vesting for the remaining three years of their four-year vesting period. During the year ended December 31, 2016, Old Waste Connections' Compensation Committee granted PSUs to the Company's executive officers and non-executive officers with a one-year performance-based metric that the Company was required to meet before those awards were earned, with the awards then subject to time-based vesting for the remaining three years of their four-year vesting period. The Compensation Committee determines the achievement of performance results and corresponding vesting of PSUs for each performance period.

Share Purchase Warrants

The Company has outstanding share purchase warrants issued under the 2014 Plan and the 2016 Plan. Warrants to purchase the Company's common shares were issued to certain consultants to the Company. Warrants issued were fully vested and exercisable at the date of grant. Warrants outstanding at December 31, 2018, expire between 2019 and 2023.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

A summary of warrant activity during the year ended December 31, 2018, is presented below:

	Warrants	Weighted-Average Exercise Price
Outstanding at December 31, 2017	137,906	\$ 42.43
Granted	163,995	75.62
Forfeited	(16,119)	36.45
Exercised	(17,571)	36.30
Outstanding at December 31, 2018	<u>268,211</u>	<u>63.49</u>

The following table summarizes information about warrants outstanding as of December 31, 2018 and 2017:

Grant Date	Warrants		Fair Value of Warrants	Outstanding at December 31,	
	Issued	Exercise Price	Issued	2018	2017
Throughout 2014	75,604	\$30.41 to \$32.71	276	15,416	17,521
Throughout 2015	136,768	\$28.30 to \$36.32	1,333	45,978	75,978
Throughout 2016	15,666	\$42.22 to \$51.55	189	7,440	9,025
Throughout 2017	35,382	\$53.65 to \$69.96	595	35,382	35,382
Throughout 2018	163,995	\$70.91 to \$80.90	2,591	163,995	-
				<u>268,211</u>	<u>137,906</u>

Deferred Share Units

A summary of the Company's deferred share units ("DSUs") activity is presented below:

	Years Ended December 31,		
	2018	2017	2016
DSUs granted	4,038	4,722	786
Weighted average grant-date fair value of DSUs granted	\$ 70.47	\$ 57.65	\$ 47.46
Total fair value of DSUs granted	\$ 285	\$ 272	\$ 37

The DSUs consist of a combination of DSU grants outstanding under the Progressive Waste share-based compensation plans that were continued by the Company following the Progressive Waste acquisition and DSUs granted by the Company since the Progressive Waste acquisition.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

A summary of activity related to DSUs during the year ended December 31, 2018, is presented below:

	Vested Shares	Weighted- Average Grant Date Fair Value Per Share
Outstanding at December 31, 2017	13,138	\$ 41.40
Granted	4,038	70.47
Outstanding at December 31, 2018	<u>17,176</u>	48.24

Other Restricted Share Units

RSU grants outstanding under the Progressive Waste share-based compensation plans were continued by the Company following the Progressive Waste acquisition and allow for the issuance of shares or cash settlement to employees upon vesting. A summary of activity related to Progressive Waste RSUs during the year ended December 31, 2018, is presented below:

Outstanding at December 31, 2017	158,510
Cash settled	(33,816)
Forfeited	<u>(2,435)</u>
Outstanding at December 31, 2018	<u>122,259</u>

A summary of vesting activity related to Progressive Waste RSUs during the year ended December 31, 2018, is presented below:

Vested at December 31, 2017	138,054
Vested over remaining service period	18,350
Cash settled	(33,816)
Forfeited	<u>(2,435)</u>
Vested at December 31, 2018	<u>120,153</u>

No RSUs under the Progressive Waste share-based compensation plans were granted subsequent to June 1, 2016.

Other Performance-Based Restricted Share Units

PSU grants outstanding under the Progressive Waste share-based compensation plans were continued by the Company following the Progressive Waste acquisition and allow for cash settlement only to employees upon vesting based on achieving target results. A summary of activity related to Progressive Waste PSUs during the year ended December 31, 2018, is presented below:

Outstanding at December 31, 2017	55,602
Cash settled, net of notional dividend	(30,902)
Forfeited	<u>(1,909)</u>
Outstanding at December 31, 2018	<u>22,791</u>

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

A summary of vesting activity related to Progressive Waste PSUs during the year ended December 31, 2018, is presented below:

Vested at December 31, 2017	28,407
Vested over remaining service period	27,195
Cash settled, net of notional dividend	(30,902)
Forfeited	(1,909)
Vested at December 31, 2018	<u>22,791</u>

No PSUs under the Progressive Waste share-based compensation plans were granted subsequent to June 1, 2016. All outstanding PSUs were vested as of December 31, 2018.

Share Based Options

Share based options outstanding under the Progressive Waste share-based compensation plans were continued by the Company following the Progressive Waste acquisition and allow for the issuance of shares or cash settlement to employees upon vesting. A summary of activity related to Progressive Waste share based options during the year ended December 31, 2018, is presented below:

Outstanding at December 31, 2017	236,616
Cash settled	(71,460)
Outstanding at December 31, 2018	<u>165,156</u>

No share based options under the Progressive Waste share-based compensation plans were granted subsequent to June 1, 2016. All outstanding share based options were vested as of December 31, 2017.

12. OTHER COMPREHENSIVE INCOME (LOSS)

Other comprehensive income (loss) includes changes in the fair value of interest rate swaps and fuel hedges that qualify for hedge accounting. The components of other comprehensive income (loss) and related tax effects for the years ended December 31, 2018, 2017 and 2016, are as follows:

	<u>Year Ended December 31, 2018</u>		
	<u>Gross</u>	<u>Tax effect</u>	<u>Net of tax</u>
Interest rate swap amounts reclassified into interest expense	\$ (5,669)	\$ 1,502	\$ (4,167)
Fuel hedge amounts reclassified into cost of operations	(6,531)	1,627	(4,904)
Changes in fair value of interest rate swaps	(1,213)	321	(892)
Changes in fair value of fuel hedge	2,651	(654)	1,997
Foreign currency translation adjustment	(175,233)	-	(175,233)
	<u>\$ (185,995)</u>	<u>\$ 2,796</u>	<u>\$ (183,199)</u>

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

	Year Ended December 31, 2017		
	Gross	Tax effect	Net of tax
Interest rate swap amounts reclassified into interest expense	\$ 2,805	\$ (743)	\$ 2,062
Fuel hedge amounts reclassified into cost of operations	2,818	(706)	2,112
Changes in fair value of interest rate swaps	7,835	(4,040)	3,795
Changes in fair value of fuel hedges	1,326	(367)	959
Foreign currency translation adjustment	142,486	-	142,486
	<u>\$ 157,270</u>	<u>\$ (5,856)</u>	<u>\$ 151,414</u>

	Year Ended December 31, 2016		
	Gross	Tax effect	Net of tax
Interest rate swap amounts reclassified into interest expense	\$ 6,654	\$ (1,715)	\$ 4,939
Fuel hedge amounts reclassified into cost of operations	5,832	(2,225)	3,607
Changes in fair value of interest rate swaps	11,431	(2,239)	9,192
Changes in fair value of fuel hedges	3,804	(1,441)	2,363
Foreign currency translation adjustment	(50,931)	-	(50,931)
	<u>\$ (23,210)</u>	<u>\$ (7,620)</u>	<u>\$ (30,830)</u>

A roll forward of the amounts included in AOCIL, net of taxes, is as follows:

	Fuel Hedges	Interest Rate Swaps	Foreign Currency Translation Adjustment	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2016	\$ (164)	\$ 8,094	\$ (50,931)	\$ (43,001)
Amounts reclassified into earnings	2,112	2,062	-	4,174
Changes in fair value	959	3,795	-	4,754
Foreign currency translation adjustment	-	-	142,486	142,486
Balance at December 31, 2017	2,907	13,951	91,555	108,413
Amounts reclassified into earnings	(4,904)	(4,167)	-	(9,071)
Changes in fair value	1,997	(892)	-	1,105
Foreign currency translation adjustment	-	-	(175,233)	(175,233)
Balance at December 31, 2018	<u>\$ -</u>	<u>\$ 8,892</u>	<u>\$ (83,678)</u>	<u>\$ (74,786)</u>

13. INCOME TAXES

The Company's operations are conducted through its various subsidiaries in countries throughout the world. The Company has provided for income taxes based upon the tax laws and rates in the countries in which operations are conducted and income is earned.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Income before provision for income taxes consists of the following:

	Years Ended December 31,		
	2018	2017	2016
U.S.	\$ 491,506	\$ 301,962	\$ 243,955
Non – U.S.	215,634	206,548	117,410
Income before income taxes	\$ 707,140	\$ 508,510	\$ 361,365

The provision (benefit) for income taxes for the years ended December 31, 2018, 2017 and 2016, consists of the following:

	Years Ended December 31,		
	2018	2017	2016
Current:			
U.S. Federal	\$ 37,419	\$ 45,089	\$ 46,735
State	27,057	19,848	14,692
Non – U.S.	17,651	18,537	10,307
	<u>82,127</u>	<u>83,474</u>	<u>71,734</u>
Deferred:			
U.S. Federal	85,926	(203,131)	47,403
State	1,991	7,534	3,536
Non – U.S.	(10,058)	43,213	(8,629)
	<u>77,859</u>	<u>(152,384)</u>	<u>42,310</u>
Provision (benefit) for income taxes	\$ 159,986	\$ (68,910)	\$ 114,044

The Company is organized under the laws of Ontario, Canada; however, since the proportion of U.S. revenues, assets, operating income and associated tax provisions is significantly greater than any other single taxing jurisdiction within the worldwide group, the reconciliation of the differences between the Company's income tax provision (benefit) as presented in the accompanying Consolidated Statements of Net Income and income tax provision (benefit) computed at the federal statutory rate is presented on the basis of the U.S. federal statutory income tax rate of 21% for the year ended December 31, 2018 and 35% for the years ending December 31, 2017 and 2016, as opposed to the Canadian statutory rate of approximately 27% to provide a more meaningful insight into those differences. The items shown in the following table are a percentage of pre-tax income:

	Years Ended December 31,		
	2018	2017	2016
U.S. federal statutory rate	21.0%	35.0%	35.0%
State taxes, net of federal benefit	4.4	4.1	3.9
Deferred income tax liability adjustments	(0.2)	0.5	0.6
Effect of international operations	(3.9)	(14.6)	(10.9)
Progressive Waste acquisition	-	-	2.3
Enactment of the Tax Act	-	(53.1)	-
Deferred tax on undistributed earnings	0.9	12.3	-
Goodwill impairment	-	2.1	-
Other	0.4	0.1	0.7
	<u>22.6%</u>	<u>(13.6%)</u>	<u>31.6%</u>

The comparability of the Company's income tax provision (benefit) for the reported periods has been affected by variations in its income before income taxes.

The effects of international operations are primarily due to the Company's non-U.S. income being taxed at rates substantially lower than the U.S. federal statutory rate for the years ended December 31, 2017 and 2016, as well as a portion of the Company's income from internal financing that is taxed at effective rates substantially lower than the U.S. federal statutory rate for each of the years presented. Further, for the year ended December 31, 2018, the restructuring of the Company's internal refinancing in conjunction with the Tax Act resulted in an increase to tax expense of \$5,572. Additionally, a reduction in the Company's deferred income tax liabilities due to state legislation enacted in the current year and changes in the Company's geographical apportionment due to acquisition activity resulted in a tax benefit of \$3,057.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

During the year ended December 31, 2017, in conjunction with the Tax Act, the Company recorded a provisional deferred income tax expense of \$62,350 associated with a portion of its U.S. earnings no longer permanently reinvested. During the year ended December 31, 2018, the Company recorded a deferred income tax expense of \$6,429 associated with refinements to the prior year estimate as a measurement period adjustment pursuant to Staff Accounting Bulletin No. 118. This resulted in total deferred income tax expense of \$68,779 which has now been considered to be complete.

During the year ended December 31, 2017, as a result of the enactment of the Tax Act, the Company recorded a net deferred income tax benefit of \$269,804 primarily due to the reduction of the corporate income tax rate effective for tax years beginning in 2018. Additionally, the goodwill impairment within the E&P segment and disposal of goodwill from the divestiture of certain operations, resulted in the write off of goodwill that was not deductible for tax purposes resulting in an increase to tax expense of \$11,825.

During the year ended December 31, 2016, non-deductible expenses incurred in connection with the Progressive Waste acquisition resulted in an increase to tax expense of \$9,048.

The significant components of deferred income tax assets and liabilities, reduced by valuation allowances as applicable, as of December 31, 2018 and 2017 are presented below.

	2018	2017
Deferred income tax assets:		
Accrued expenses	\$ 26,128	\$ 17,108
Compensation	19,830	19,157
Contingent liabilities	14,043	11,826
Finance costs	2,329	5,132
Tax credits and loss carryforwards	20,438	23,374
Other	-	7,295
Gross deferred income tax assets	82,768	83,892
Less: Valuation allowance	-	-
Total deferred income tax assets	82,768	83,892
Deferred income tax liabilities:		
Goodwill and other intangibles	(283,671)	(273,408)
Property and equipment	(461,071)	(414,904)
Landfill closure/post-closure	(8,892)	(7,758)
Prepaid expenses	(11,581)	(9,912)
Interest rate and fuel hedges	(3,206)	(6,001)
Investment in subsidiaries	(69,383)	(62,676)
Other	(4,997)	-
Total deferred income tax liabilities	(842,801)	(774,659)
Net deferred income tax liability	\$ (760,033)	\$ (690,767)

The Company has \$30,763 of Canadian tax loss carryforwards with a 20-year carryforward period which will begin to expire in 2029, as well as various state tax losses with carryforward periods up to 20 years.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

As of December 31, 2018, the Company had undistributed earnings of approximately \$2,136,422 for which income taxes have not been provided on permanently reinvested earnings of approximately \$961,422. Additionally, the Company has not recorded deferred taxes on the amount of financial reporting basis in excess of tax basis of approximately \$303,470 attributable to the Company's non-U.S. subsidiaries which are permanently reinvested. It is not practical to estimate the additional tax that may become payable upon the eventual repatriation of these amounts; however, the tax impacts could result in a material increase to the Company's effective tax rate.

The Company and its subsidiaries are subject to U.S. federal and Canadian income tax, which are its principle operating jurisdictions. The Company has concluded all U.S. federal income tax matters for years through 2014, except for the Progressive Waste U.S. federal income tax jurisdiction, which remains open for years subsequent to 2007. Additionally, the Company has concluded all Canadian income tax matters for years through 2013.

The Company did not have any unrecognized tax benefits recorded at December 31, 2018, 2017 or 2016. The Company does not anticipate the total amount of unrecognized tax benefits will significantly change by December 31, 2019. The Company recognizes interest and/or penalties related to income tax matters in income tax expense.

14. SEGMENT REPORTING

The Company's revenues are generated from the collection, transfer, recycling and disposal of non-hazardous solid waste and the treatment, recovery and disposal of non-hazardous E&P waste. No single contract or customer accounted for more than 10% of the Company's total revenues at the consolidated or reportable segment level during the periods presented.

The Company manages its operations through five geographic operating segments and its E&P segment, which includes the majority of the Company's E&P waste treatment and disposal operations. The Company's five geographic operating segments and its E&P segment comprise the Company's reportable segments. Each operating segment is responsible for managing several vertically integrated operations, which are comprised of districts. In the third quarter of 2017, the Company moved a district from the Eastern segment to the Canada segment as a significant amount of its revenues are received from Canadian-based customers. The segment information presented herein reflects the realignment of this district.

Under the current orientation, the Company's Southern segment services customers located in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, southern Oklahoma, western Tennessee and Texas; the Company's Eastern segment services customers located in Illinois, Iowa, Kentucky, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, eastern Tennessee, Vermont, Virginia and Wisconsin; the Company's Western segment services customers located in Alaska, California, Idaho, Montana, Nevada, Oregon, Washington and western Wyoming; the Company's Canada segment services customers located in the state of Michigan and in the provinces of Alberta, British Columbia, Manitoba, Ontario, Québec and Saskatchewan; and the Company's Central segment services customers located in Arizona, Colorado, Kansas, Minnesota, Missouri, Nebraska, New Mexico, Oklahoma, South Dakota, western Texas, Utah and eastern Wyoming. The E&P segment services E&P customers located in Arkansas, Louisiana, New Mexico, North Dakota, Oklahoma, Texas, Wyoming and along the Gulf of Mexico.

The Company's Chief Operating Decision Maker evaluates operating segment profitability and determines resource allocations based on several factors, of which the primary financial measure is segment EBITDA. The Company defines segment EBITDA as earnings before interest, taxes, depreciation, amortization, impairments and other operating items, other income (expense) and foreign currency transaction gain (loss). Segment EBITDA is not a measure of operating income, operating performance or liquidity under generally accepted accounting principles and may not be comparable to similarly titled measures reported by other companies. The Company's management uses segment EBITDA in the evaluation of segment operating performance as it is a profit measure that is generally within the control of the operating segments. A reconciliation of segment EBITDA to Income before income tax provision is included at the end of this Note 14.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Summarized financial information concerning the Company's reportable segments for the years ended December 31, 2018, 2017 and 2016, is shown in the following tables:

Year Ended December 31, 2018	Revenue	Intercompany Revenue ^(b)	Reported Revenue	Segment EBITDA ^(c)	Depreciation and Amortization	Capital Expenditures	Total Assets ^(e)
Southern	\$ 1,273,033	\$ (150,485)	\$ 1,122,548	\$ 276,791	\$ 153,923	\$ 97,442	\$ 2,892,994
Eastern	1,314,852	(224,833)	1,090,019	299,162	167,914	137,335	2,688,341
Western	1,170,382	(126,454)	1,043,928	318,401	95,400	125,112	1,596,129
Canada	823,989	(96,776)	727,213	261,233	124,155	66,319	2,412,971
Central	797,491	(103,966)	693,525	255,648	87,802	90,525	1,491,301
E&P	253,083	(7,375)	245,708	129,825	44,175	25,937	969,808
Corporate ^{(a), (d)}	-	-	-	(8,211)	7,118	3,475	575,785
	<u>\$ 5,632,830</u>	<u>\$ (709,889)</u>	<u>\$ 4,922,941</u>	<u>\$ 1,532,849</u>	<u>\$ 680,487</u>	<u>\$ 546,145</u>	<u>\$ 12,627,329</u>

Year Ended December 31, 2017	Revenue	Intercompany Revenue ^(b)	Reported Revenue	Segment EBITDA ^(c)	Depreciation and Amortization	Capital Expenditures	Total Assets ^(e)
Southern	\$ 1,262,147	\$ (146,283)	\$ 1,115,864	\$ 258,560	\$ 151,417	\$ 117,441	\$ 2,718,296
Eastern	1,137,608	(178,394)	959,214	273,942	136,998	101,569	2,024,527
Western	1,127,146	(119,916)	1,007,230	323,648	95,724	100,000	1,573,955
Canada	828,755	(99,978)	728,777	264,693	121,174	62,690	2,677,557
Central	716,655	(88,488)	628,167	237,136	78,199	78,000	1,297,118
E&P	199,063	(7,827)	191,236	90,597	42,500	12,274	981,980
Corporate ^{(a), (d)}	-	-	-	(32,501)	6,472	7,313	741,248
	<u>\$ 5,271,374</u>	<u>\$ (640,886)</u>	<u>\$ 4,630,488</u>	<u>\$ 1,416,075</u>	<u>\$ 632,484</u>	<u>\$ 479,287</u>	<u>\$ 12,014,681</u>

Year Ended December 31, 2016	Revenue	Intercompany Revenue ^(b)	Reported Revenue	Segment EBITDA ^(c)	Depreciation and Amortization	Capital Expenditures	Total Assets ^(e)
Southern	\$ 809,926	\$ (96,545)	\$ 713,381	\$ 163,320	\$ 99,323	\$ 64,624	\$ 2,869,841
Eastern	741,283	(114,639)	626,644	189,220	88,748	77,478	1,519,576
Western	1,051,637	(116,318)	935,319	315,708	89,198	86,200	1,516,870
Canada	476,585	(58,716)	417,869	153,446	71,228	25,380	2,554,324
Central	634,393	(72,852)	561,541	208,930	70,027	71,888	1,302,900
E&P	132,504	(11,395)	121,109	32,479	41,215	10,178	1,068,086
Corporate ^{(a), (d)}	-	-	-	(119,215)	4,173	8,975	272,328
	<u>\$ 3,846,328</u>	<u>\$ (470,465)</u>	<u>\$ 3,375,863</u>	<u>\$ 943,888</u>	<u>\$ 463,912</u>	<u>\$ 344,723</u>	<u>\$ 11,103,925</u>

(a) Corporate functions include accounting, legal, tax, treasury, information technology, risk management, human resources, training and other administrative functions. Amounts reflected are net of allocations to the six operating segments. For the year ended December 31, 2016, amounts also include costs associated with the Progressive Waste acquisition, including direct acquisition expenses, severance-related expenses, excise taxes, share-based compensation expenses associated with Progressive Waste share-based grants existing at June 1, 2016 and incentive compensation expenses based on the achievement of acquisition synergy goals. For the years ended December 31, 2017 and 2018, amounts also include Progressive Waste integration-related expenses, direct acquisition expenses and share-based compensation expenses associated with Progressive Waste share-based grants existing at June 1, 2016.

(b) Intercompany revenues reflect each segment's total intercompany sales, including intercompany sales within a segment and between segments. Transactions within and between segments are generally made on a basis intended to reflect the market value of the service.

(c) For those items included in the determination of segment EBITDA, the accounting policies of the segments are the same as those described in Note 1.

(d) Corporate assets include cash, net deferred tax assets, debt issuance costs, equity investments, and corporate facility leasehold improvements and equipment.

(e) Goodwill is included within total assets for each of the Company's six operating segments.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The following table shows changes in goodwill during the years ended December 31, 2017 and 2018, by reportable segment:

	Southern	Eastern	Western	Canada	Central	E&P	Total
Balance as of December 31, 2016	\$ 1,470,023	\$ 533,160	\$ 376,537	\$ 1,465,274	\$ 467,924	\$ 77,343	\$ 4,390,261
Goodwill acquired	7,510	275,006	20,971	7,127	1,018	-	311,632
Goodwill divested	(32,338)	(4,354)	-	-	(667)	-	(37,359)
Impairment loss	-	-	-	-	-	(77,343)	(77,343)
Goodwill adjustment for assets sold	2,205	321	-	-	-	-	2,526
Goodwill adjustment for assets held for sale	(11,080)	-	-	-	-	-	(11,080)
Impact of changes in foreign currency	-	-	-	103,137	-	-	103,137
Balance as of December 31, 2017	1,436,320	804,133	397,508	1,575,538	468,275	-	4,681,774
Goodwill acquired	71,109	339,222	666	153	55,291	-	466,441
Goodwill adjustment for assets sold	10,181	-	-	-	-	-	10,181
Impact of changes in foreign currency	-	-	-	(126,711)	-	-	(126,711)
Balance as of December 31, 2018	<u>\$ 1,517,610</u>	<u>\$ 1,143,355</u>	<u>\$ 398,174</u>	<u>\$ 1,448,980</u>	<u>\$ 523,566</u>	<u>\$ -</u>	<u>\$ 5,031,685</u>

Property and equipment, net relating to operations in the United States and Canada are as follows:

	December 31,	
	2018	2017
United States	\$4,516,966	\$4,082,124
Canada	652,030	738,810
Total	<u>\$5,168,996</u>	<u>\$4,820,934</u>

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

A reconciliation of the Company's primary measure of segment profitability (segment EBITDA) to Income before income tax provision in the Consolidated Statements of Net Income is as follows:

	Years ended December 31,		
	2018	2017	2016
Southern segment EBITDA	\$ 276,791	\$ 258,560	\$ 163,320
Eastern segment EBITDA	299,162	273,942	189,220
Western segment EBITDA	318,401	323,648	315,708
Canada segment EBITDA	261,233	264,693	153,446
Central segment EBITDA	255,648	237,136	208,930
E&P segment EBITDA	129,825	90,597	32,479
Subtotal reportable segments	<u>1,541,060</u>	<u>1,448,576</u>	<u>1,063,103</u>
Unallocated corporate overhead	(8,211)	(32,501)	(119,215)
Depreciation	(572,708)	(530,187)	(393,600)
Amortization of intangibles	(107,779)	(102,297)	(70,312)
Impairments and other operating items	(20,118)	(156,493)	(27,678)
Interest expense	(132,104)	(125,297)	(92,709)
Interest income	7,170	5,173	602
Other income, net	1,263	3,736	53
Foreign currency transaction gain (loss)	(1,433)	(2,200)	1,121
Income before income tax provision	<u>\$ 707,140</u>	<u>\$ 508,510</u>	<u>\$ 361,365</u>

15. NET INCOME PER SHARE INFORMATION

The following table sets forth the calculation of the numerator and denominator used in the computation of basic and diluted net income per common share attributable to the Company's shareholders for the years ended December 31, 2018, 2017 and 2016:

	Years Ended December 31,		
	2018	2017	2016
Numerator:			
Net income attributable to Waste Connections for basic and diluted earnings per share	<u>\$ 546,871</u>	<u>\$ 576,817</u>	<u>\$ 246,540</u>
Denominator:			
Basic shares outstanding	263,650,155	263,682,608	230,325,012
Dilutive effect of equity-based awards	<u>745,463</u>	<u>619,803</u>	<u>756,484</u>
Diluted shares outstanding	<u>264,395,618</u>	<u>264,302,411</u>	<u>231,081,496</u>

16. EMPLOYEE BENEFIT PLANS

Retirement Savings Plans: Waste Connections and certain of its subsidiaries have voluntary retirement savings plans in Canada (the "RSPs"). RSPs are available to all eligible Canadian employees of Waste Connections and its subsidiaries. For eligible Canadian employees, Waste Connections and its subsidiaries make a contribution to a deferred profit sharing plan of 3% of the employee's eligible compensation, subject to certain limitations imposed by the Income Tax Act (Canada).

Certain of Waste Connections' subsidiaries also have voluntary savings and investment plans in the U.S. (the "401(k) Plans"). The 401(k) Plans are available to all eligible U.S. employees of Waste Connections and its subsidiaries. Waste Connections and its subsidiaries make matching contributions under the 401(k) Plans of 50% to 100% of every dollar of a participating employee's pre-tax contributions until the employee's contributions equal 6% of the employee's eligible compensation, subject to certain limitations imposed by the U.S. Internal Revenue Code.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

Total employer expenses, including employer contributions and employer matching contributions, for the RSPs and 401(k) Plans were \$12,055, \$14,703 and \$10,420, respectively, during the years ended December 31, 2018, 2017 and 2016. These amounts include matching contributions Waste Connections made under the Deferred Compensation Plan, described below.

Multiemployer Pension Plans: The Company also participates in 11 “multiemployer” pension plans. The Company does not administer these multiemployer plans. In general, these plans are managed by the trustees, with the unions appointing certain trustees, and other contributing employers of the plan appointing certain others. The Company is generally not represented on the board of trustees. The Company makes periodic contributions to these plans pursuant to its collective bargaining agreements. The Company’s participation in multiemployer pension plans is summarized as follows:

Plan Name	EIN/Pension Plan Number/Registration Number	Pension Protection Act Zone Status ^(a)		FIP/RP Status (a),(b)	Company Contributions			Expiration Date of Collective Bargaining Agreement
		2018	2017		2018	2017	2016	
Western Conference of Teamsters Pension Trust	91-6145047 - 001	Green	Green	Not applicable	\$ 4,399	\$ 4,191	\$ 3,420	12/31/2018 to 9/30/2021
Locals 302 & 612 of the IOUE - Employers Construction Industry Retirement Plan	91-6028571 - 001	Green	Green	Not applicable	284	275	252	9/30/2019
International Union of Operating Engineers Pension Trust	85512-1	Green as of 4/30/2017	Green as of 9/30/2015	Not applicable	224	219	120	3/31/2020 to 3/31/2021
Multi-Sector Pension Plan	1085653	Green	Green	Not applicable	191	228	112	12/31/2018
Local 813 Pension Trust Fund	13-1975659 - 001	Critical	Critical	Implemented	165	158	86	11/30/2019
Midwest Operating Engineers Pension Plan	36-6140097 - 001	Yellow for the plan year ended 3/31/17	Yellow as of 4/1/2016	Implemented	289	207	11	10/31/2020
Suburban Teamsters of Northern Illinois Pension Fund	36-6155778 - 001	Yellow	Yellow	Implemented	1,569	877	-	1/31/2019 to 2/28/2019
Teamster Local 301 Pension Fund	36-6492992 - 001	Green	Green	Not applicable	581	489	-	9/30/2018
Automobile Mechanics’ Local No. 701 Union and Industry Pension Fund	36-6042061 - 001	Yellow	Yellow	Implemented	484	837	-	12/31/2018
IAM National Pension Fund	51-6031295 - 002	Green	Green	Not applicable	240	215	-	12/31/2018
Local 731, I.B. of T., Private Scavengers and Garage Attendants Pension Trust Fund	36-6513567 - 001	Green as of 10/1/2016	Green as of 10/1/2015	Not applicable	4,600	4,342	-	9/30/2018
					<u>\$ 13,026</u>	<u>\$ 12,038</u>	<u>\$ 4,001</u>	

- (a) Unless otherwise noted in the table above, the most recent Pension Protection Act zone status available in 2018 and 2017 is for the plans’ years ended December 31, 2017 and 2016, respectively.
- (b) The “FIP/RP Status” column indicates plans for which a Funding Improvement Plan (“FIP”) or a Rehabilitation Plan (“RP”) has been implemented.
- (c) A multiemployer defined benefit pension plan that has been certified as endangered, seriously endangered or critical may begin to levy a statutory surcharge on contribution rates. Once authorized, the surcharge is at the rate of 5% for the first 12 months and 10% for any periods thereafter, until certain conditions are met. The Company was not required to pay a surcharge to these plans during the years ended December 31, 2018 and 2017.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

The status is based on information that the Company received from the pension plans and is certified by the pension plans' actuary. Plans with "green" status are at least 80% funded. Plans with "yellow" status are less than 80% funded. Plans with "critical" status are less than 65% funded. The Company's contributions to each individual multiemployer pension plan represent less than 5% of total contributions to such plan. Under current law regarding multiemployer benefit plans, a plan's termination, the Company's voluntary withdrawal, or the withdrawal of all contributing employers from any underfunded multiemployer pension plan would require the Company to make payments to the plan for its proportionate share of the multiemployer plan's unfunded vested liabilities. The Company could have adjustments to its estimates for these matters in the near term that could have a material effect on its consolidated financial condition, results of operations or cash flows.

Deferred Compensation Plan: Effective for compensation paid on and after July 1, 2004, Old Waste Connections established a Deferred Compensation Plan for eligible employees, which was amended and restated effective January 1, 2008, January 1, 2010, September 22, 2011 and December 1, 2014, and as further amended on July 6, 2016 and October 25, 2017 (as amended to date, the "Deferred Compensation Plan"). The Deferred Compensation Plan was assumed by the Company on June 1, 2016. The Deferred Compensation Plan is a non-qualified deferred compensation program under which the eligible participants, including officers and certain employees who meet a minimum salary threshold, may voluntarily elect to defer up to 80% of their base salaries and up to 100% of their bonuses, commissions and restricted share unit grants. Effective as of December 1, 2014, Old Waste Connections' Board of Directors determined to discontinue the option to allow eligible participants to defer restricted share unit grants pursuant to the Deferred Compensation Plan. Members of the Company's Board of Directors are eligible to participate in the Deferred Compensation Plan with respect to their director fees. Although the Company periodically contributes the amount of its obligation under the plan to a trust for the benefit of the participants, the amounts of any compensation deferred under the Deferred Compensation Plan constitute an unsecured obligation of the Company to pay the participants in the future and, as such, are subject to the claims of other creditors in the event of insolvency proceedings. Participants may elect certain future distribution dates on which all or a portion of their accounts will be paid to them, including in the case of a change in control of the Company. Their accounts will be distributed to them in cash, except for amounts credited with respect to deferred restricted share unit grants, which will be distributed in the Company's common shares pursuant to the 2014 Plan or the 2004 Plan. In addition to the amount of participants' contributions, the Company will pay participants an amount reflecting a deemed return based on the returns of various mutual funds or measurement funds selected by the participants, except in the case of restricted share units that were deferred and not subsequently exchanged into a measurement fund pursuant to the terms of the Deferred Compensation Plan, which will be credited to their accounts as Company common shares. The measurement funds are used only to determine the amount of return the Company pays to participants and participant funds are not actually invested in the measurement fund, nor are any Company common shares acquired under the Deferred Compensation Plan. During each of the three years ended December 31, 2018, 2017 and 2016, the Company also made matching contributions to the Deferred Compensation Plan of 50% of every dollar of a participating employee's pre-tax eligible contributions until the employee's contributions equaled 6% of the employee's eligible compensation, less the amount of any match the Company made on behalf of the employee under the Waste Connections 401(k) Plan, and subject to certain deferral limitations imposed by the U.S. Internal Revenue Code on 401(k) plans, except that the Company's matching contributions under the Deferred Compensation Plan were 100% vested when made. The Company's total liability for deferred compensation at December 31, 2018 and 2017 was \$32,024 and \$25,992, respectively, which was recorded in Other long-term liabilities in the Consolidated Balance Sheets.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

17. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

The following table summarizes the Company's unaudited consolidated quarterly results of operations for 2018:

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenues	\$ 1,140,131	\$ 1,239,968	\$ 1,281,110	\$ 1,261,732
Operating income	188,707	210,688	232,869	199,980
Net income	125,032	138,814	150,766	132,543
Net income attributable to Waste Connections	124,869	138,682	150,843	132,478
Basic income per common share attributable to Waste Connections' common shareholders	0.47	0.53	0.57	0.50
Diluted income per common share attributable to Waste Connections' common shareholders	0.47	0.52	0.57	0.50

During the third quarter of 2018, the Company reversed \$6,257 of expenses recognized in prior periods to adjust the carrying cost of assets held for disposal to fair market value due to modifications to its divestiture plan and changes in the fair market value of the divested operations. During the third quarter of 2018, the Company also recorded \$5,005 in equity-based compensation expenses associated with adjusting common shares of Waste Connections, Inc. held in the Company's deferred compensation plan by certain key executives to fair value as a result of the shares being exchanged for other investment options. During the fourth quarter of 2018, the Company recorded \$11,043 for the potential settlement of a final judgment obtained against Progressive Waste Solutions of FL, Inc., now known as Waste Connections of Florida, Inc.

The following table summarizes the Company's unaudited consolidated quarterly results of operations for 2017:

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenues	\$ 1,091,266	\$ 1,175,569	\$ 1,206,478	\$ 1,157,175
Operating income (loss)	26,404	206,910	218,770	175,014
Net income (loss)	15,020	123,887	123,410	315,128
Net income (loss) attributable to Waste Connections	14,874	123,656	123,227	315,086
Basic income (loss) per common share attributable to Waste Connections' common shareholders	0.06	0.47	0.47	1.20
Diluted income (loss) per common share attributable to Waste Connections' common shareholders	0.06	0.47	0.47	1.19

During the first quarter of 2017, the Company recorded a goodwill impairment charge of \$77,343 at its E&P segment resulting from the Company's early adoption of a new accounting standard on January 1, 2017 which required the recognition of goodwill impairment by the amount which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. During the first quarter of 2017, the Company also recorded \$53,471 to adjust the carrying cost of assets held for disposal to fair market value and \$11,313 to increase the fair value of an amount payable under a liability-classified contingent consideration arrangement from an acquisition closed in 2015 by Progressive Waste. During the fourth quarter of 2017, the Company recorded a \$269,804 income tax benefit primarily resulting from the reduction to the corporate income tax rate due to the enactment of the Tax Act, a \$62,350 income tax expense due to a portion of its U.S. earnings no longer permanently reinvested and an \$11,038 impairment charge for landfill development costs capitalized in prior years associated with a project to develop a new landfill in its Central segment that the Company is no longer pursuing.

WASTE CONNECTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(DOLLAR AMOUNTS IN THOUSANDS OF U.S. DOLLARS, EXCEPT PER SHARE, PER TON AND PER GALLON AMOUNTS)

18. SUBSEQUENT EVENTS

In January 2019, the Company gave notice to redeem its LeMay Washington Bond with a remaining principal balance of \$15,930. The principal and accrued interest on this bond will be paid on March 6, 2019.

On February 13, 2019, the Company announced that its Board of Directors approved a regular quarterly cash dividend of \$0.16 per Company common share. The dividend will be paid on March 15, 2019, to shareholders of record on the close of business on March 1, 2019.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and our Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2018, at the reasonable assurance level such that information required to be disclosed in our Exchange Act reports: (1) is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms; and (2) is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. This process includes policies and procedures that: (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and any dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles; (3) provide reasonable assurance that receipts and expenditures of ours are being made only in accordance with authorizations of our management; and (4) provide reasonable assurance that unauthorized acquisition, use or disposition of our assets that could have a material affect on our financial statements would be prevented or timely detected.

We carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and our Chief Financial Officer, of the effectiveness of the design and operation of our internal control over financial reporting as of December 31, 2018. In conducting our evaluation, we used the framework set forth in the report titled "*Internal Control – Integrated Framework*" (2013) published by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the results of our evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2018.

The effectiveness of our internal control over financial reporting as of December 31, 2018, has been audited by Grant Thornton LLP, our independent registered public accounting firm, as stated in its report which appears in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

Based on an evaluation under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, there has been no change to our internal control over financial reporting that occurred during the three month period ended December 31, 2018, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Except as set forth above in Part I under “Executive Officers of the Registrant” and in the paragraph below, the information required by Item 10 has been omitted from this Annual Report on Form 10-K, and is incorporated by reference to the sections “Election of Directors,” “Corporate Governance and Board Matters” and “Section 16(a) Beneficial Ownership Reporting Compliance” in our definitive Management Information Circular and Proxy Statement for the 2019 Annual and Special Meeting of Shareholders, which we will file with the SEC pursuant to Regulation 14A within 120 days after the end of our 2018 fiscal year.

We have adopted a Code of Conduct and Ethics that applies to our officers, including our principal executive officer, principal financial officer, principal accounting officer and all other officers, directors and employees. We have also adopted Corporate Governance Guidelines and Board Charter to promote the effective functioning of our Board of Directors and its committees, to promote the interests of shareholders and to ensure a common set of expectations concerning how the Board, its committees and management should perform their respective functions. Our Code of Conduct and Ethics and our Corporate Governance Guidelines and Board Charter are available on our website at <http://www.wasteconnections.com> as are the charters of our Board’s Audit, Nominating and Corporate Governance and Compensation Committees. Information on or that can be accessed through our website is not incorporated by reference to this Annual Report on Form 10-K. We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding any amendments to, or waiver from, a provision of our Code of Conduct and Ethics by posting such information on our website.

Shareholders may also obtain copies of the corporate governance documents discussed above by contacting our Secretary at 3 Waterway Square Place, Suite 110, The Woodlands, Texas 77380, or (832) 442-2200.

ITEM 11. EXECUTIVE COMPENSATION

Information required by Item 11 has been omitted from this Annual Report on Form 10-K and is incorporated by reference to the sections “Executive Compensation” and “Corporate Governance and Board Matters” in our definitive Management Information Circular and Proxy Statement for the 2019 Annual and Special Meeting of Shareholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED SHAREHOLDER MATTERS

Information required by Item 12 has been omitted from this Annual Report on Form 10-K and is incorporated by reference to the sections “Principal Shareholders” and “Equity Compensation Plan Information” in our definitive Management Information Circular and Proxy Statement for the 2019 Annual and Special Meeting of Shareholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information required by Item 13 has been omitted from this Annual Report on Form 10-K and is incorporated by reference to the sections “Certain Relationships and Related Transactions” and “Corporate Governance and Board Matters” in our definitive Management Information Circular and Proxy Statement for the 2019 Annual and Special Meeting of Shareholders.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information required by Item 14 has been omitted from this Annual Report on Form 10-K and is incorporated by reference to the section “Appointment of Independent Registered Public Accounting Firm and Authorization of the Board of Directors to Fix the Remuneration of the Independent Registered Public Accounting Firm” in our definitive Management Information Circular and Proxy Statement for the 2019 Annual and Special Meeting of Shareholders.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

- (a) See Index to Consolidated Financial Statements on page 75. The following Financial Statement Schedule is filed herewith on page 152 and made a part of this Annual Report on Form 10-K:

Schedule II - Valuation and Qualifying Accounts

All other schedules for which provision is made in the applicable accounting regulations of the SEC are not required under the related instructions or are inapplicable, and therefore have been omitted.

- (b) Exhibits.

<u>Exhibit Number</u>	<u>Description of Exhibits</u>
2.1	Agreement and Plan of Merger, dated as of January 18, 2016, by and among the Registrant (f.k.a. Progressive Waste Solutions Ltd.), Water Merger Sub LLC, and Waste Connections US, Inc. (f.k.a. Waste Connections, Inc.) (incorporated by reference to Exhibit 99.2 of the Registrant's Form 6-K filed on January 20, 2016)
3.1	Articles of Amendment (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on May 26, 2017)
3.2	Articles of Amalgamation (incorporated by reference to Exhibit 3.2 of the Registrant's Form 8-K filed on June 7, 2016)
3.3	Articles of Amendment (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on June 7, 2016)
3.4	By-law No. 1 of the Registrant (incorporated by reference to Exhibit 3.3 of the Registrant's Form 8-K filed on June 7, 2016)
3.5	Form of Common Share Certificate (incorporated by reference to Exhibit 3.4 of the Registrant's Form 8-K filed on June 7, 2016)
4.1	Master Note Purchase Agreement, dated as of June 1, 2016 (incorporated by reference to Exhibit 4.2 of the Registrant's Form 8-K filed on June 7, 2016)
4.2	First Supplement to Master Note Purchase Agreement, dated as of February 13, 2017 (incorporated by reference to Exhibit 4.2 of the Registrant's Form 8-K filed on February 17, 2017)
4.3	Amendment No. 1 to Master Note Purchase Agreement, dated as of March 21, 2018 (incorporated by reference to Exhibit 4.2 of the Registrant's Form 8-K filed on March 27, 2018)
4.4	Master Note Purchase Agreement, dated July 15, 2008 (incorporated by reference to Exhibit 4.3 of the Registrant's Form 8-K filed on June 7, 2016)
4.5	Amendment No. 1 to Master Note Purchase Agreement, dated as of July 20, 2009 (incorporated by reference to Exhibit 4.4 of the Registrant's Form 8-K filed on June 7, 2016)
4.6	First Supplement to Master Note Purchase Agreement, dated as of October 26, 2009 (incorporated by reference to Exhibit 4.5 of the Registrant's Form 8-K filed on June 7, 2016)
4.7	Amendment No. 2 to Master Note Purchase Agreement, dated as of November 24, 2010 (incorporated by reference to Exhibit 4.6 of the Registrant's Form 8-K filed on June 7, 2016)
4.8	Second Supplement to Master Note Purchase Agreement, dated as of April 1, 2011 (incorporated by reference to Exhibit 4.7 of the Registrant's Form 8-K filed on June 7, 2016)

Exhibit Number	Description of Exhibits
4.9	Amendment No. 3 to Master Note Purchase Agreement, dated as of October 12, 2011 (incorporated by reference to Exhibit 4.8 of the Registrant's Form 8-K filed on June 7, 2016)
4.10	Amendment No. 4 to Master Note Purchase Agreement, dated August 9, 2013 (incorporated by reference to Exhibit 4.9 of the Registrant's Form 8-K filed on June 7, 2016)
4.11	Amendment No. 5 to Master Note Purchase Agreement, dated February 20, 2015 (incorporated by reference to Exhibit 4.10 of the Registrant's Form 8-K filed on June 7, 2016)
4.12	Third Supplement to Master Note Purchase Agreement, dated as of June 11, 2015 (incorporated by reference to Exhibit 4.11 of the Registrant's Form 8-K filed on June 7, 2016)
4.13	Amendment No. 6 to Master Note Purchase Agreement, dated June 1, 2016 (incorporated by reference to Exhibit 4.12 of the Registrant's Form 8-K filed on June 7, 2016)
4.14	Assumption and Exchange Agreement, dated June 1, 2016 relating to the Master Note Purchase Agreement dated July 15, 2008 as amended and supplemented through and including June 1, 2016 and as further modified by the Assumption and Exchange Agreement (incorporated by reference to Exhibit 4.13 of the Registrant's Form 8-K filed on June 7, 2016)
4.15	Amendment No. 7 to Master Note Purchase Agreement, dated March 21, 2018 (incorporated by reference to Exhibit 4.3 of the Registrant's Form 8-K filed on March 27, 2018)
4.16	Amended and Restated Revolving Credit and Term Loan Agreement, dated as of March 21, 2018 (incorporated by reference to Exhibit 4.1 of the Registrant's Form 8-K filed on March 27, 2018)
4.17	Indenture, dated as of November 16, 2018, by and between Waste Connections, Inc. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 of the Registrant's Form 8-K filed on November 16, 2018)
4.18	First Supplemental Indenture, dated as of November 16, 2018, by and between Waste Connections, Inc. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 of the Registrant's Form 8-K filed on November 16, 2018)
10.1 +	Form of Indemnification Agreement dated June 1, 2016, between Waste Connections, Inc. and each of its directors and officers (incorporated by reference to Exhibit 10.12 of the Registrant's Form 8-K filed on June 7, 2016)
10.2 +	Separation Benefits Plan and Employment Agreement by and between Waste Connections US, Inc. and Ronald J. Mittelstaedt, effective February 13, 2012 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on June 7, 2016)
10.3 +	Amendment to Separation Benefits Plan and Employment Agreement between Waste Connections US, Inc. and Ronald J. Mittelstaedt (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on June 7, 2016)
10.4 +	Second Amendment to Separation Benefits Plan and Employment Agreement between Waste Connections US, Inc. and Ronald J. Mittelstaedt (incorporated by reference to Exhibit 10.5 of the Registrant's Form 10-K filed on February 15, 2018)
10.5 +	Waste Connections, Inc. 2016 Incentive Award Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q filed on July 26, 2017)

Exhibit Number	Description of Exhibits
10.6 +	Form of Restricted Share Unit Award Agreement (with One-Year Performance Period) under the Waste Connections, Inc. 2016 Incentive Award Plan (incorporated by reference to Exhibit 10.14 of the Registrant's Form 8-K filed on June 7, 2016)
10.7 +	Form of Performance-Based Restricted Share Unit Award Agreement (with Three-Year Performance Period) under the Waste Connections, Inc. 2016 Incentive Award Plan (incorporated by reference to Exhibit 10.15 of the Registrant's Form 8-K filed on June 7, 2016)
10.8 +	Form of Restricted Share Unit Agreement for Non-employee Directors under the Waste Connections, Inc. 2016 Incentive Award Plan (incorporated by reference to Exhibit 10.16 of the Registrant's Form 8-K filed on June 7, 2016)
10.9 +	Form of Restricted Share Unit Agreement under the Waste Connections, Inc. 2016 Incentive Award Plan (incorporated by reference to Exhibit 10.17 of the Registrant's Form 8-K filed on June 7, 2016)
10.10 +	Form of Deferred Share Unit Agreement for Non-Employee Directors under the Waste Connections, Inc. 2016 Incentive Award Plan (incorporated by reference to Exhibit 10.3 of the Registrant's Form 10-Q filed on October 31, 2016)
10.11 +	Form of Warrant to Purchase Common Shares of Waste Connections, Inc. under the Waste Connections, Inc. 2016 Incentive Award Plan (incorporated by reference to Exhibit 10.23 of the Registrant's Form 10-K filed on February 15, 2018)
10.12 +	Waste Connections US, Inc. 2014 Incentive Award Plan (incorporated by reference to Exhibit 10.20 of the Registrant's Form 8-K filed on June 7, 2016)
10.13 +	Form of Grant Agreement for Restricted Stock Units under Waste Connections US, Inc. 2014 Incentive Award Plan (incorporated by reference to Exhibit 10.21 of the Registrant's Form 8-K filed on June 7, 2016)
10.14 +	Form of Grant Agreement for Restricted Stock Units (with One-Year Performance Period) under Waste Connections US, Inc. 2014 Incentive Award Plan (incorporated by reference to Exhibit 10.26 of the Registrant's Form 10-K filed on February 15, 2018)
10.15 +	Form of Warrant to Purchase Common Stock under the Waste Connections US, Inc. 2014 Incentive Award Plan (incorporated by reference to Exhibit 10.24 of the Registrant's Form 8-K filed on June 7, 2016)
10.16 +	Waste Connections US, Inc. Third Amended and Restated 2004 Equity Incentive Plan (incorporated by reference to Exhibit 10.25 of the Registrant's Form 8-K filed on June 7, 2016)
10.17 +	Waste Connections US, Inc. Nonqualified Deferred Compensation Plan, amended and restated as of December 1, 2014 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q filed on August 5, 2016)
10.18 +	Amendment to the Waste Connections, Inc. Nonqualified Deferred Compensation Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on July 22, 2016)

Exhibit Number	Description of Exhibits
<u>10.19 +</u>	<u>Amendment No. 2 to the Waste Connections, Inc. Nonqualified Deferred Compensation Plan (incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q filed on October 26, 2017)</u>
<u>10.20 +</u>	<u>Waste Connections, Inc. Synergy Bonus Program (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on July 22, 2016)</u>
<u>10.21 +</u>	<u>Waste Connections, Inc. Compensation Recoupment Policy (incorporated by reference to Exhibit 10.35 of the Registrant's Form 10-K filed on February 15, 2018)</u>
<u>10.22 +</u>	<u>Separation Benefits Plan of Waste Connections US, Inc., effective July 24, 2018 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K/A filed on August 31, 2018)</u>
<u>10.23 +</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Worthing F. Jackman, effective August 30, 2018 (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K/A filed on August 31, 2018)</u>
<u>10.24 +</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Darrell W. Chambliss, effective October 19, 2018 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on October 19, 2018)</u>
<u>10.25 +</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Matthew S. Black, effective October 19, 2018 (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on October 19, 2018)</u>
<u>10.26 +</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and David G. Eddie, effective October 19, 2018 (incorporated by reference to Exhibit 10.3 of the Registrant's Form 8-K filed on October 19, 2018)</u>
<u>10.27 +</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and David M. Hall, effective October 19, 2018 (incorporated by reference to Exhibit 10.4 of the Registrant's Form 8-K filed on October 19, 2018)</u>
<u>10.28 +</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and James M. Little, effective October 19, 2018 (incorporated by reference to Exhibit 10.5 of the Registrant's Form 8-K filed on October 19, 2018)</u>
<u>10.29 +</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Patrick J. Shea, effective October 19, 2018 (incorporated by reference to Exhibit 10.6 of the Registrant's Form 8-K filed on October 19, 2018)</u>
<u>10.30 +</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Mary Anne Whitney, effective October 19, 2018 (incorporated by reference to Exhibit 10.7 of the Registrant's Form 8-K filed on October 19, 2018)</u>
<u>10.31 +</u>	<u>Third Amendment to Separation Benefits Plan and Employment Agreement, dated October 17, 2018, by and between Waste Connections US, Inc. and Ronald J. Mittelstaedt (incorporated by reference to Exhibit 10.8 of the Registrant's Form 8-K filed on October 19, 2018)</u>
<u>10.32 +*</u>	<u>Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Eric O. Hansen, effective February 12, 2019</u>
<u>21.1 *</u>	<u>Subsidiaries of the Registrant</u>
<u>23.1 *</u>	<u>Consent of Independent Registered Public Accounting Firm</u>
<u>23.2 *</u>	<u>Consent of Independent Registered Public Accounting Firm</u>

Exhibit Number	Description of Exhibits
24.1 *	Power of Attorney (see signature page of this Annual Report on Form 10-K)
31.1 *	Certification of Chief Executive Officer
31.2 *	Certification of Chief Financial Officer
32.1 *	Certificate of Chief Executive Officer
32.2 *	Certificate of Chief Financial Officer
101.INS *	XBRL Instance Document
101.SCH *	XBRL Taxonomy Extension Schema Document
101.CAL *	XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB *	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE *	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF *	XBRL Taxonomy Extension Definition Linkbase Document

* Filed herewith.

+ Management contract or compensatory plan, contract or arrangement.

SIGNATURES

Pursuant to the requirements of Sections 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Waste Connections, Inc.

By: /s/ Ronald J. Mittelstaedt
 Ronald J. Mittelstaedt
 Chief Executive Officer and Chairman

Date: February 14, 2019

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Ronald J. Mittelstaedt and Worthing F. Jackman, jointly and severally, his or her true and lawful attorneys-in-fact, each with the power of substitution, for him or her in any and all capacities to sign any amendments to this Annual Report on Form 10-K, and to file the same with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission and the securities commissions or similar regulatory authorities in Canada, hereby ratifying and confirming all that each of said attorneys-in-fact, or his or her substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Ronald J. Mittelstaedt</u> Ronald J. Mittelstaedt	Chief Executive Officer and Chairman (principal executive officer)	February 14, 2019
<u>/s/ Mary Anne Whitney</u> Mary Anne Whitney	Senior Vice President and Chief Financial Officer (principal financial officer)	February 14, 2019
<u>/s/ David G. Eddie</u> David G. Eddie	Senior Vice President and Chief Accounting Officer (principal accounting officer)	February 14, 2019
<u>/s/ Robert H. Davis</u> Robert H. Davis	Director	February 14, 2019
<u>/s/ Edward E. Guillet</u> Edward E. Guillet	Director	February 14, 2019
<u>/s/ Michael W. Harlan</u> Michael W. Harlan	Director	February 14, 2019
<u>/s/ Larry S. Hughes</u> Larry S. Hughes	Director	February 14, 2019
<u>/s/ Susan Lee</u> Susan Lee	Director	February 14, 2019
<u>/s/ William J. Razzouk</u> William J. Razzouk	Director	February 14, 2019

WASTE CONNECTIONS, INC.

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS
 Years Ended December 31, 2018, 2017 and 2016
 (in thousands of U.S. dollars)

Description	Balance at Beginning of Year	Additions		Deductions (Write-offs, Net of Collections)	Balance at End of Year
		Charged to Costs and Expenses	Charged to Other Accounts		
Allowance for Doubtful Accounts:					
Year Ended December 31, 2018	\$ 17,154	\$ 13,814	\$ -	\$ (14,208)	\$ 16,760
Year Ended December 31, 2017	13,160	14,363	-	(10,369)	17,154
Year Ended December 31, 2016	7,738	13,980	-	(8,558)	13,160



WASTE CONNECTIONS US, INC.

February 12, 2019

Eric O. Hansen
3 Waterway Square Place, Suite 110
The Woodlands, Texas 77380

Re: **The Waste Connections US, Inc. Separation Benefits Plan**

Dear Eric:

This letter agreement (this "**Letter Agreement**") relates to the Separation Benefits Plan (and Summary Plan Description) of Waste Connections US, Inc., a Delaware corporation (the "**Company**"), effective July 24, 2018 (the "**Plan**").

Through this Letter Agreement, you are being offered the opportunity to become a participant in the Plan (a "**Participant**"), and thereby to be eligible to receive the severance and change in control benefits set forth therein, effective as of February 12, 2019 (the "**Participant Effective Date**"). A copy of the Plan is attached to this Letter Agreement. You should read it carefully and become comfortable with its terms and conditions, and those set forth below.

By signing below, you will be acknowledging and agreeing to the following provisions:

1. that you have received and reviewed a copy of the Plan;
2. that terms not defined in this Letter Agreement but beginning with a capital letter have the meaning assigned to them in the Plan;
3. that participation in the Plan requires that you agree irrevocably and voluntarily to the terms of the Plan (including, without limitation, the covenants set forth in Sections 5, 6 and 12 of the Plan) and the terms set forth below; and
4. that you have had the opportunity to carefully evaluate this opportunity, and desire to participate in the Plan according to the terms and conditions set forth herein.



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Subject to the foregoing, we invite you to become a Participant in the Plan. Your participation in the Plan will be effective upon your signing and returning this Letter Agreement to the Company within thirty (30) days of your receipt of this Letter Agreement.

You and the Company (hereinafter referred to as the “parties”) hereby AGREE as follows:

1. Positions and Responsibilities. During the Term, you will be directly employed by the Company, will serve as Senior Vice President–Chief Information Officer of Waste Connections, Inc., a corporation organized under the laws of Ontario, Canada (the “**Parent**”) and certain of its subsidiaries, including the Company, and will perform such other duties and responsibilities as may be reasonably assigned to you from time to time by the Parent’s President (the “**President**”), Chief Executive Officer and/or Board of Directors (the “**Board**”). You will devote your attention, energies and abilities in those capacities to the proper oversight and operation of the business of the WCI Group to the exclusion of any other occupation. As Senior Vice President–Chief Information Officer of the Parent and certain of its subsidiaries, including the Company, you will: (i) report to the President or his designee, (ii) be based at the Parent’s principal administrative offices in The Woodlands, Texas, and (iii) be responsible for all duties, authority and responsibility customary for such positions. You will devote such time and attention to your duties as are reasonably necessary to the proper discharge of your responsibilities hereunder. You agree to perform all duties consistent with: (a) policies established from time to time by the WCI Group; and (b) all applicable legal requirements. For purposes of the Plan, you are hereby designated as an SVP Participant.
2. Compensation, Benefits and Reimbursement of Expenses.
 - a. Base Salary. The Company hereby agrees to pay you an annual base salary of Three Hundred Twenty Thousand Dollars (\$320,000) (“**Base Salary**”). Your Base Salary will be payable in accordance with the Company’s normal payroll practices, and your Base Salary is subject to withholding and social security, unemployment and other taxes. Further increases in Base Salary will be considered by the Board.
 - b. Performance Bonus. You shall be entitled to an annual cash bonus (the “**Bonus**”) based on the Parent’s attainment of reasonable financial objectives to be determined annually by the Board. Your target annual Bonus will equal Forty Percent (40%) of the applicable year’s ending Base Salary and will be payable if the Board determines, in its sole and exclusive discretion, that that year’s financial objectives have been fully met. Nothing in the Plan or in this Letter Agreement shall invalidate any cash bonus plan approval by the Board or a Committee of the Board providing for higher payments in the event extraordinary or “stretch” goals are met. The Bonus will be paid in accordance with the Parent’s bonus plan, as approved by the Board; provided, that in no case shall any portion of the Bonus with respect to any such fiscal year be paid more than three (3) months after the end of such fiscal year.



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- c. Grants of Equity Awards. You shall be eligible for annual grants of restricted share unit awards, performance share unit awards or other Equity Awards on such terms and to such level of participation as the Board or the Compensation Committee of the Board determines to be appropriate, bearing in mind your positions and responsibilities. The terms of any such Equity Awards shall be governed by the relevant plans under which they are issued and described in detail in applicable agreements between the Parent and you.
 - d. Other Benefits. You will be entitled to paid annual vacation, which will accrue on the same basis as for other employees of the Company of similar rank, but which will in no event be less than four (4) weeks for any twelve (12) month period commencing January 1st of each year. You also will be entitled to participate, on the same terms as other employees of the Company participate, in any medical, dental or other health plan, pension plan, profit-sharing plan and life insurance plan that the Company may adopt or maintain, any of which may be changed, terminated or eliminated by the Company at any time in its exclusive discretion.
 - e. Reimbursement of Other Expenses. The Company agrees to pay or reimburse you for all reasonable travel and other expenses incurred by you in connection with the performance of your duties on presentation of proper expense statements or vouchers. All such supporting information shall comply with all applicable Company policies relating to reimbursement for travel and other expenses.
3. Change in Control. For purposes of this Letter Agreement, in addition to the events described in the definition of “Change in Control” in Section 27(f) of the Plan, a Change in Control shall also occur if:
- a. any “person” (as defined in Section 13(d) and 14(d) of the Exchange Act), shall become the “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of fifty percent (50%) or more of the outstanding voting securities of a subsidiary of Parent that owns all or substantially all of the WCI Group’s United States operations;
 - b. there is a reorganization, merger or other business combination of a subsidiary of Parent that owns all or substantially all of the WCI Group’s United States operations with any other corporation, other than any such merger or other combination that would result in the voting securities of the subsidiary outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) at least fifty percent (50%) of the total voting power represented by the voting securities of the subsidiary or such surviving entity outstanding immediately after such transaction; or



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- c. there is a direct or indirect sale, lease, exchange or other transfer (in one transaction or a series of related transactions) by the WCI Group of all, or substantially all, of its United States operations.
4. **Property.** Section 6 of the Plan, as it applies to you, shall be amended by adding the following provisions as the second and third paragraphs of Section 6 of the Plan:
- “The Participant is only authorized to access WCI Group computers that are within the course and scope of the Participant’s duties, and may only do so while in the active employment of the Company. All such authorization ends immediately upon the termination of employment. The Participant is not authorized to access or use the WCI Group’s computers, email, or related computer systems to compete or to prepare to compete, or to otherwise compromise the WCI Group’s legitimate business interests, and unauthorized access to or use of the WCI Group’s computers in violation of the foregoing understanding may subject the Participant to civil and/or criminal liability.
- Upon request, the Participant will provide for inspection any personal electronic storage devices that the Company believes may contain confidential or proprietary business or technical information of the WCI Group, in a state that makes inspection possible, to permit the Company to confirm that the Participant has completely removed all such information from the devices. If the Participant stores any WCI Group information with any service provider (e.g., gmail, DropBox, iCloud), the Participant will provide the Company with any required passwords and access to inspect such account directly. Upon the Company’s request, the Participant will also consent to the service provider’s disclosure of such information to the Company. The Participant will, upon the Company’s request where allowed by law, execute any additional authorizations required by the service provider to disclose the WCI Group’s confidential or proprietary business or technical information to the Company.”
5. **Right to Other Payments.** In consideration of becoming eligible to receive the severance and change in control benefits provided under the terms and conditions of the Plan, in addition to providing the waiver required by Section 7(e) or Section 8(c) of the Plan, as applicable, you agree to waive any and all rights, benefits, and privileges to severance benefits that you might otherwise be entitled to receive under any other plan or arrangement.



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6. Entire Agreement. You understand that the waiver set forth in Section 5 above is irrevocable and that this Letter Agreement and the Plan set forth the entire agreement between the parties with respect to any subject matter covered herein. You agree and acknowledge that this Letter Agreement and the Plan supersede and replace that certain letter agreement between you and the Company, dated December 19, 2018.
7. Survival. Your participation in the Plan will continue in effect following any termination that occurs while you are a Participant in the Plan with respect to all rights and obligations accruing as a result of such termination.
8. Counterparts. This Letter Agreement may be executed in any number of counterparts, each of which shall be enforceable against the parties actually executing such counterparts, and all of which together shall constitute one instrument. A facsimile, telecopy or other reproduction of this Letter Agreement may be executed by one or more parties and delivered by such party by facsimile or any similar electronic transmission device pursuant to which the signature of or on behalf of each such party can be seen. Such execution and delivery shall be considered valid, binding and effective for all purposes.
9. Miscellaneous. This Letter Agreement and the Plan set forth the entire agreement between the WCI Group and you concerning the subject matter described herein, and fully supersede any and all prior oral or written agreements, promises or understandings between the WCI Group and you concerning the subject matter described herein including, without limitation, any acceleration provisions set forth in any agreement evidencing an Equity Award held by you. Further, you represent and acknowledge that in executing this Letter Agreement, you do not rely, and have not relied, on any prior oral or written communications by the WCI Group, and you expressly disclaim any reliance on any prior oral or written communications, agreements, promises, inducements, understandings, statements or representations in entering into this Letter Agreement. Therefore, you understand that you are precluded from bringing any fraud or fraudulent inducement claim against the WCI Group associated with any such communications, agreements, promises, inducements, understandings, statements or representations. The Company and you are entering into this Letter Agreement based on each party's own judgment.
10. Execution. You recognize and agree that your execution of this Letter Agreement results in your enrollment and participation in the Plan, that you agree to be bound by the terms and conditions of the Plan and this Letter Agreement, and that you understand that this Letter Agreement may not be amended or modified except pursuant to Section 20 of the Plan.

[Remainder of page left intentionally blank. Signatures to follow.]



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IN WITNESS WHEREOF, the parties have executed this Letter Agreement, which shall be deemed effective as of the Participant Effective Date.

WASTE CONNECTIONS US, INC.

By: /s/ Ronald J. Mittelstaedt
Ronald J. Mittelstaedt
Chief Executive Officer

PARTICIPANT

/s/ Eric O. Hansen
Eric O. Hansen



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EXHIBIT 21.1

SUBSIDIARIES OF WASTE CONNECTIONS, INC.

<u>Subsidiary</u>	<u>Jurisdiction of Formation</u>	<u>Other Names Under Which Conducts Business</u>
1755869 ALBERTA ULC	Alberta	
1895548 ONTARIO LIMITED	Ontario	
1922464 ALBERTA LTD.	Alberta	
19TH & LOWER BUCKEYE, LLC	Delaware	
2900 DEDE ROAD, LLC	Maryland	
9164-9608 QUEBEC INC.	Quebec	
9199-5290 QUEBEC INC.	Quebec	
A.C.M.S., INC.	Florida	Heart of Florida Environmental
ACE SOLID WASTE, INC.	Minnesota	
ADVANCED SYSTEMS PORTABLE RESTROOMS, INC.	Oregon	Advanced Mobile Storage Advanced Systems Portable Restrooms McDonald Portable Toilets
ALASKA WASTE-DENALI, LLC	Alaska	
ALASKA WASTE-DUTCH HARBOR, LLC	Alaska	
ALASKA WASTE-INTERIOR, LLC	Alaska	
ALASKA WASTE-JUNEAU, LLC	Alaska	
ALASKA WASTE-KENAI PENINSULA, LLC	Alaska	
ALASKA WASTE-KETCHIKAN, LLC	Alaska	
ALASKA WASTE-MAT-SU, LLC	Alaska	
ALASKA WASTE-NOME, LLC	Alaska	
ALASKA WASTE-SITKA, LLC	Alaska	
AMERICAN DISPOSAL COMMERCIAL SERVICES, INC.	Virginia	
AMERICAN DISPOSAL COMPANY, INC.	Washington	Vashon Disposal
AMERICAN DISPOSAL MAINTENANCE SERVICES, INC.	Virginia	
AMERICAN DISPOSAL PROPERTY HOLDINGS, LLC	Delaware	
AMERICAN DISPOSAL RECYCLING SERVICES, INC.	Virginia	
AMERICAN DISPOSAL ROLL-OFF SERVICES, INC.	Virginia	
AMERICAN DISPOSAL SERVICES, INC.	Virginia	
AMERICAN DISPOSAL SERVICE OF GEORGIA, INC.	Georgia	
AMERICAN DISPOSAL SERVICES OF MARYLAND, INC.	Virginia	
AMERICAN DISPOSAL SERVICES OF COLORADO, INC.	Colorado	
AMERICAN RECYCLING CENTER, INC.	Virginia	
ANDERSON COUNTY LANDFILL, INC.	Delaware	Anderson County Landfill
ANDERSON REGIONAL LANDFILL, LLC	Delaware	
ARKANSAS RECLAMATION COMPANY, LLC	Arkansas	
AULC HOLDINGS, LLC	Delaware	
AUSTIN LANDFILL HOLDINGS, INC.	Delaware	
BAY DISPOSAL, LLC	Virginia	
BAY DISPOSAL HOLDINGS, INC.	Delaware	
BAY DISPOSAL PROPERTY HOLDINGS, LLC	Delaware	
BETHLEHEM LANDFILL COMPANY	Delaware	Bethlehem Landfill Company
BISON BUTTE ENVIRONMENTAL, LLC	Minnesota	
BITUMINOUS RESOURCES, INC.	Kentucky	Hopkins County Regional Landfill
BLUE RIDGE LANDFILL COMPANY	Pennsylvania	Blue Ridge Landfill Company
BRENT RUN LANDFILL, INC.	Delaware	Brent Run Landfill
BROADACRE LANDFILL, INC.	Colorado	Pueblo Landfill and Recycling Center
BUTLER COUNTY LANDFILL, INC.	Nebraska	
CALPET, LLC	Wyoming	
CAMINO REAL ENVIRONMENTAL CENTER, INC.	New Mexico	
CAPITAL REGION LANDFILLS, INC.	New York	
CAROLINA LANDFILL, LLC	South Carolina	
CAROLINA PROCESSING & RECYCLING, LLC	South Carolina	
CAROLINA WASTE & RECYCLING LLC	South Carolina	
CARPENTER WASTE HOLDINGS, LLC	New York	Carpenter Waste Carpenter Waste Removal

CH4, LLC	Illinois	
CHAMBERS DEVELOPMENT OF NORTH CAROLINA, INC.	North Carolina	Anson County Landfill
CHAMP LANDFILL COMPANY, LLC	Missouri	Champ Landfill Company
CHEROKEE SANITARY LANDFILL COMPANY	Arkansas	Cherokee Sanitary Landfill Company
CHIMNEY BUTTE ENVIRONMENTAL L.L.C.	Minnesota	
CHIQUITA CANYON, INC.	Delaware	
CHIQUITA CANYON, LLC	Delaware	Chiquita Canyon Landfill
CLAY BUTTE ENVIRONMENTAL, LLC	Minnesota	
CLIFTON ORGANICS, LLC	New York	
COLD CANYON LAND FILL, INC.	California	Cold Canyon Processing Facility
COLUMBIA RESOURCE CO., L.P.	Washington	
COLUMBIA RIVER DISPOSAL, INC.	Washington	Bingen Garbage Service Skamania County Sanitary Service
COMMUNITY REFUSE DISPOSAL, INC.	Nebraska	
COMPLEXE ENVIRO CONNEXIONS LTEE	Canada	
CORRAL DE PIEDRA LAND COMPANY	California	
COUNTY WASTE -- ULSTER, LLC	New York	Big Top Disposal
COUNTY WASTE AND RECYCLING SERVICE, INC.	New York	Ace Carting County Waste D.J.'s Roll Off Service Hardesty and Sons Sanitation Spaulding Waste Services Superior Waste Troy Transfer Troy Transfer Station
COUNTY WASTE TRANSFER CORP.	New York	
COWLITZ COUNTY LANDFILL, INC.	Washington	
CRI HOLDINGS, LLC	Delaware	
CURRY TRANSFER & RECYCLING, INC.	Oregon	City Transfer and Recycling County Transfer & Recycling Country Transfer & Recycling Harrell's Septic Roto-Rooter of Curry County
CWR HOLDINGS, LLC	South Carolina	
D.M. DISPOSAL CO., INC.	Washington	American Portable Storage D.M. Recycling Superior Refuse Removal
DENVER REGIONAL LANDFILL, INC.	Colorado	
DNC'S PROPERTIES, LLC	Arizona	
DURHAM REGIONAL LANDFILL, INC.	Delaware	
DURHAM REGIONAL LANDFILL, LLC	Arizona	
EAGLE FORD RECLAMATION COMPANY, LLC	Texas	
ECOSORT, L.L.C.	Oregon	
EL PASO DISPOSAL, LP	Texas	El Paso Disposal
ELKO SANITATION COMPANY	Nevada	Waste Connections of Nevada
EMPIRE DISPOSAL, INC.	Washington	
ENTECH ALASKA, LLC	Alaska	
ENTERPRISES SANITAIRE F.A. LTEE.	Canada	
ENVIRONMENTAL TRUST COMPANY	Tennessee	
EVERGREEN DISPOSAL, INC.	Montana	Glacier Disposal
FINLEY-BUTTES LIMITED PARTNERSHIP	Oregon	Finley Buttes Landfill Company
FINNEY COUNTY LANDFILL, INC.	Delaware	
FLORIDA WASTE HOLDINGS, INC.	Delaware	Waste Connections of FL
FORT ANN TRANSFER STATION, LLC	New York	
FRONT RANGE LANDFILL, INC.	Delaware	Front Range Landfill
F.W. DISPOSAL, L.L.C.	Missouri	Valley Park Transfer Station
FW DISPOSAL SOUTH, LLC	Missouri	
G&P DEVELOPMENT, INC.	Nebraska	
GOD BLESS THE USA, INCORPORATED	North Carolina	
GOLD RIVER HOLDINGS, LLC	Delaware	
GREEN WASTE SOLUTIONS OF ALASKA, LLC	Alaska	
GROOT, INC.	Illinois	
GROOT INDUSTRIES, INC.	Delaware	
GROOT RECYCLING & WASTE SERVICES, INC.	Illinois	Accurate Document Destruction Accurate Document Destruction, Inc.
GROVELAND TRANSFER AND RECYCLING, INC.	Florida	

HAMPTON ROADS RECOVERY CENTER, LLC
HARDIN SANITATION, INC.
HAROLD LEMAY ENTERPRISES, INCORPORATED

Virginia
Idaho
Washington

Idaho Garbologist
AA Better Trash & Junk Clean Up
AA Lucky Portable Storage
Aberdeen Sanitation Co.
Butler's Cove Refuse Service
City Sanitary Co.
Eastern Grays Harbor Disposal
EGH Disposal
Harbor Disposal Co.
Harold LeMay Enterprises
HE Recycling
Joes Refuse Service
Lakewood Recycling Service
Lakewood Refuse Service
LeMay Inc
LeMay Mobile Shredding
LeMay Transportation Services
Pacific Disposal
Pierce County Refuse
Recycle Services
Rural Garbage Service
White Pass Garbage

HIGH DESERT SOLID WASTE FACILITY, INC.
HUDSON VALLEY WASTE HOLDING, INC.
IESI-BFC HOLDINGS, INC.
ISLAND DISPOSAL, INC.
J BAR J LAND, INC.
LAKESHORE DISPOSAL, INC.
LAUREL RIDGE LANDFILL, L.L.C.
LEALCO, INC.

New Mexico
Delaware
Ontario
Washington
Nebraska
Idaho
Delaware
Texas

Whidbey Recycling Services

ABC Waste Collection
Pro Star Waste
Waste Connections of Texas
Waste Connections of Texas Rio Grande Valley

LES ENTREPRISES RAYLOBEC INC.
LIGHTNING BUTTE ENVIRONMENTAL, LLC
LOUISIANA RECLAMATION COMPANY, L.L.C.
LOUISIANA REGIONAL LANDFILL COMPANY
MADERA DISPOSAL SYSTEMS, INC.

Quebec
Minnesota
Louisiana
Delaware
California

Timberlane Landfill Company
Allied Disposal Company
Avenal Landfill
Bishop Waste Disposal
Coastal Rolloff Service
Riverdale Disposal Service
Sierra Disposal

MAMMOTH DISPOSAL COMPANY
MANAGEMENT ENVIRONMENTAL NATIONAL, INC.
MASON COUNTY GARBAGE CO., INC.
MBO, LLC
MDSI OF LA, INC.
MILLENNIUM WASTE INCORPORATED
MISSION COUNTRY DISPOSAL
MORRO BAY GARBAGE SERVICE
MURREY'S DISPOSAL COMPANY, INC.
NEBRASKA ECOLOGY SYSTEMS, INC.
NOBLES COUNTY LANDFILL, INC.
NORTHWEST CONTAINER SERVICES, INC.
OKLAHOMA CITY WASTE DISPOSAL, INC.
OKLAHOMA LANDFILL HOLDINGS, INC.
OSAGE LANDFILL, INC.
PIERCE COUNTY RECYCLING, COMPOSTING AND DISPOSAL, LLC
POTRERO HILLS LANDFILL, INC.
PRAIRIE DISPOSAL LLC
PRAIRIE LIQUIDS, LLC
PSI ENVIRONMENTAL SERVICES, INC.
PSI ENVIRONMENTAL SYSTEMS, INC.

California
Washington
Washington
Delaware
California
Indiana
California
California
Washington
Nebraska
Minnesota
Oregon
Oklahoma
Delaware
Oklahoma
Washington
California
North Dakota
Delaware
Indiana
Indiana

Lacassine Oilfield Services

Quad Cities Landfill

Olympic Disposal

LRI
Potrero Hills Landfill

PSI WASTE
PSI WASTE

PWS FINANCE LUXEMBOURG S.A.R.L.	Luxembourg	
R360 ARTESIA, LLC	Delaware	
R360 ENVIRONMENTAL SOLUTIONS, LLC	Delaware	
R360 ENVIRONMENTAL SOLUTIONS HOLDINGS, INC.	Delaware	
R360 ENVIRONMENTAL SOLUTIONS OF LOUISIANA, LLC	Delaware	
R360 ENVIRONMENTAL SOLUTIONS OF MISSISSIPPI, LLC	Delaware	
R360 ENVIRONMENTAL SOLUTIONS OF TEXAS, LLC	Delaware	
R360 ES HOLDINGS, INC.	Delaware	
R360 HITCHCOCK, LLC	Delaware	
R360 OKLAHOMA, LLC	Delaware	J. Scott Mudd Disposal
R360 PERMIAN BASIN, LLC	New Mexico	
R360 RED BLUFF, LLC	Texas	
R360 SHUTE CREEK, LLC	Delaware	
R360 SILO, LLC	Delaware	
R360 WILLISTON BASIN, LLC	Delaware	
R.A. BROWNRIGG INVESTMENTS, INC.	Oregon	Cascade Disposal Company Cascade Recycling Co. Kelvic Disposal Co. Kelvic Dropbox Company Sun Country Disposal
RAILROAD AVENUE DISPOSAL, LLC	Delaware	
RED CARPET LANDFILL, INC.	Oklahoma	
RENSSELAER REGION LANDFILLS, INC.	Delaware	
RH FINANCIAL CORPORATION	Washington	
RICH VALLEY, LLC	Minnesota	
RIDGE (CHATHAM) HOLDINGS G.P. INC.	Canada	
RIDGE (CHATHAM) HOLDINGS LP	Manitoba	
RIGHT AWAY DISPOSAL, L.L.C.	Arizona	Arizona Sanitation Services Sun Lakes Disposal
RIP, INC.	Florida	
R.J.C. TRUCKING CO.	Oregon	Eugene Drop Box
ROCHELLE WASTE DISPOSAL, L.L.C.	Illinois	
ROCK RIVER ENVIRONMENTAL SERVICES, INC.	Illinois	
ROCK RIVER ENVIRONMENTAL SOLUTIONS, LLC	Illinois	
ROLL-OFF EXPRESS, INC.	Maryland	
RRD HOLDING COMPANY	Illinois	Disposal Services of Belvidere, Inc. G&B Disposal, Inc. Gill's Freeport Disposal, Inc. Illinois Valley Waste Services, Inc. Marengo Disposal Company MDC Environmental Services, Inc. Northern Illinois Disposal Services, Inc. Rock River Disposal Services, Inc.
S.A. DUNN & COMPANY, LLC	New York	
SANFORD RECYCLING AND TRANSFER, INC.	Florida	
SANIPAC, INC.	Oregon	Star Garbage
SAN LUIS GARBAGE COMPANY	California	
SCOTT SOLID WASTE DISPOSAL COMPANY	Tennessee	Volunteer Landfill
SCOTT WASTE SERVICES, LLC	Kentucky	
SEABREEZE RECOVERY, INC.	Delaware	Seabreeze Environmental Seabreeze Environmental Landfill
SECTION 18, LLC	Minnesota	
SEDALIA LAND COMPANY	Colorado	
SENECA MEADOWS, INC.	New York	
SERVICES ENVIRONNEMENTAUX RICHELIEU INC.	Quebec	
SHALE GAS SERVICES, LLC	Arkansas	
SIERRA HOLDING GROUP, LLC	New York	
SIERRA PROCESSING, LLC	New York	
SILVER SPRINGS ORGANICS L.L.C.	Washington	
SJ RECLAMATION, INC.	Delaware	
SKB ENVIRONMENTAL, INC.	Minnesota	Shamrock Trucking
SKB ENVIRONMENTAL CLOQUET LANDFILL, INC.	Minnesota	
SLD LANDFILL, INC.	Delaware	
SMOKY BUTTE ENVIRONMENTAL, LLC	Minnesota	
SOUTH COUNTY SANITARY SERVICE, INC.	California	

STEAMBOAT CREEK TERMINALS, INC.	Virginia	
STUTZMAN REFUSE DISPOSAL INC.	Kansas	
SUMTER RECYCLING AND SOLID WASTE DISPOSAL, INC.	Florida	
SUN COUNTRY MATERIALS, LLC	Delaware	
TACOMA RECYCLING COMPANY, INC.	Washington	
TAFT RECYCLING, INC.	Florida	
TENNESSEE WASTE MOVERS, INC.	Delaware	TWM-Landfill
TEXAS REGIONAL LANDFILL COMPANY LP	Texas	Bowie Transfer Station Buffalo Creek Landfill East Texas Regional Landfill Company Fort Worth C&D Landfill Jacksboro Landfill Travis County Landfill Turkey Creek Landfill Weatherford Landfill
THUNDER BUTTE ENVIRONMENTAL, LLC	Minnesota	
TIMBER RIDGE LANDFILL COMPANY	Missouri	Timber Ridge Landfill Company
US LIQUIDS OF LA., L.P.	Delaware	R360 Environmental Solutions, Inc.
WASCO COUNTY LANDFILL, INC.	Delaware	
WASTE CONNECTIONS BAYOU, INC.	Delaware	Delta Disposals WC of Louisiana
WASTE CONNECTIONS HOLDINGS LTD.	Canada	
WASTE CONNECTIONS LONE STAR, INC.	Texas	Archer Waste Corpus Christi Disposal Service Crouch Sanitation and Disposal Eagle Disposal Good Ol' Boys Curbside GW Waste Services Main Street Disposal Salford Disposal Skid-O-Kan Texas Jack Triple H Trash Solutions Waste Connections of TX Waste Wranglers WC of Texas
WASTE CONNECTIONS MANAGEMENT SERVICES, INC.	Delaware	
WASTE CONNECTIONS OF ALABAMA, INC.	Delaware	Competitive Waste Systems Rumsey Environmental Alaska Green Waste Solutions Alaska Pacific Environmental Services Anchorage Alaska Waste Alaska Waste - Anchorage Alaska Waste Transfer Anchorage Refuse Commercial Refuse DH Transit Eagle River Refuse Green Waste Kodiak Sanitation Peninsula Sanitation Valley Refuse Wasilla Refuse
WASTE CONNECTIONS OF ALASKA, INC.	Delaware	
WASTE CONNECTIONS OF ARIZONA, INC.	Delaware	
WASTE CONNECTIONS OF ARKANSAS, INC.	Arkansas	WCN of Arkansas Amador Disposal Service Ebbetts Pass Disposal Service El Dorado Disposal Service Green Team of Los Angeles GreenTeam GreenTeam of San Jose GreenWaste of Tehama SEI Debris Box SEI Solid Waste West LA Reclamation Western El Dorado Recovery Systems
WASTE CONNECTIONS OF CALIFORNIA, INC.	California	

WASTE CONNECTIONS OF CANADA INC.	Ontario	
WASTE CONNECTIONS OF COLORADO, INC.	Delaware	All Trash Service Aspen Waste Aspen Waste Systems Community Recycling Denver Roll-Off Service Diamond Disposal Eagle Waste & Recycling Service Eagle Waste Services Eagle Waste Services, Inc. Eagle Roll-Off, Inc. El Paso Disposal Services Fremont Disposal Horizon Property Management Platte Valley Disposal Pueblo Disposal Pueblo Disposal & Recycling Service Snowy Peaks Trash Company Solid Waste Transfer Services Southside Landfill The Trash Company Town & Country Disposal U.S. Disposal U.S. Disposal Services Good Fella's Roll-Off & Waste Disposal Waste Connections of Florida
WASTE CONNECTIONS OF FLORIDA, INC.	Delaware	
WASTE CONNECTIONS OF GEORGIA, INC.	Delaware	
WASTE CONNECTIONS OF IDAHO, INC.	Indiana	Mountain Jack Environmental Services T, T & R Enterprises Valley Waste and Recycling Millennium Waste - IL E-Z Sanitation Stone Sanitation Town & Country Disposal Whaley Waste Systems Anderson Trash Service Best Yet Refuse Collectia LTD. Dual County Sanitation Northend Disposal Plumb Thicket Landfill R-Arrow Salina Waste Systems Schaben Sanitation Stutzman Refuse Disposal Kentucky Waste Systems, Inc. Mid-State Recycling Waste Disposal Mid-State Recycling Waste Systems Mid-State Waste Delta Disposals Diamond Disposal Good Neighbor Disposal
WASTE CONNECTIONS OF ILLINOIS, INC.	Delaware	
WASTE CONNECTIONS OF IOWA, INC.	Iowa	
WASTE CONNECTIONS OF KANSAS, INC.	Delaware	
WASTE CONNECTIONS OF KENTUCKY, INC.	Delaware	
WASTE CONNECTIONS OF LOUISIANA, INC.	Delaware	
WASTE CONNECTIONS OF MARYLAND, INC.	Delaware	
WASTE CONNECTIONS OF MINNESOTA, INC.	Minnesota	Hendrickson Sanitation L & L Sanitation Schaap Sanitation Scotting Sanitation Ulrich Sanitation
WASTE CONNECTIONS OF MISSISSIPPI DISPOSAL SERVICES, LLC	Mississippi	
WASTE CONNECTIONS OF MISSISSIPPI, INC.	Delaware	Asco Sanitation Buck Run Landfill Northeast Mississippi Regional Landfill Waste Connections of Cape Girardeau Waste Connections of St. Louis Waste Connections Timber Ridge
WASTE CONNECTIONS OF MISSOURI, INC.	Missouri	

WASTE CONNECTIONS OF MONTANA, INC.	Delaware	Bitterroot Disposal Valley Recycling Victor Transfer
WASTE CONNECTIONS OF NEBRASKA, INC.	Delaware	Allied Refuse Art's Garbage Service B&B Sanitary Service Big Red Roll Off Central Waste Disposal Countryside Services Duren Sanitation J&J Sanitation Junk in the Box Midwest Refuse Service Commercial Omega Systems Papillion Sanitation Sanitation Systems Saunders County Disposal Schaben Sanitation SGS Sanitation Shrader Refuse and Recycling Service Company Steve's Sanitation Steve's Sanitation Service The Garbage Company Ummel Sanitation Wahoo Sanitation White Sanitation
WASTE CONNECTIONS OF NEW JERSEY, INC.	Delaware	
WASTE CONNECTIONS OF NEW MEXICO, INC.	Delaware	Silva Sanitation Southwest Disposal
WASTE CONNECTIONS OF NEW YORK, INC.	Delaware	County Waste Waste Connections
WASTE CONNECTIONS OF NORTH CAROLINA, INC.	Delaware	Queen City Transfer Station Waste Connections of the Carolinas
WASTE CONNECTIONS OF NORTH DAKOTA, INC.	Delaware	Armstrong Sanitation Plus
WASTE CONNECTIONS OF OKLAHOMA, INC.	Oklahoma	B & B Sanitation Metropolitan Waste Services Oklahoma Disposal & Sanitation Waste Connections American Sanitary Service Arrow Sanitary Service Babe's Garbage Service Bandon Disposal & Recycling Clatskanie Sanitary Service EWSI Environmental Waste Systems Hood River Garbage Service Hudson Portable Toilet Service Hudson Garbage Service Hudson's Garbage Service Les' County Sanitary Les' Sanitary Service North Bend Sanitation Service Oregon Paper Fiber Public Disposal and Recycling Center Sweet Home Sanitation Service Sweet Home Transfer & Recycling The Dalles Disposal The Dalles Transfer Station Wally's Portable Restrooms
WASTE CONNECTIONS OF OREGON, INC.	Oregon	
WASTE CONNECTIONS OF OSCEOLA COUNTY, LLC	Florida	J.E.D. Landfill
WASTE CONNECTIONS OF PENNSYLVANIA, INC.	Delaware	Waste Connections of Pennsylvania
WASTE CONNECTIONS OF RHODE ISLAND, INC.	Delaware	Patriot Disposal Patriot Hauling
WASTE CONNECTIONS OF SOUTH CAROLINA, INC.	Delaware	Waste Connections of the Carolinas

WASTE CONNECTIONS OF SOUTH DAKOTA, INC.	South Dakota	A & C Keiffer Sanitation Art's Garbage Service Cook's Wastepaper & Recycling Dakota Data Shred Envirotech Waste Services Kieffer Sanitation Novak Enterprises Novak Sanitary Service Pierre Recycling Center Ron's Dray Sioux Valley Sanitation Service Steve's Garbage Service Walker Refuse
WASTE CONNECTIONS OF TENNESSEE, INC.	Delaware	Asco Sanitation Clarksville Disposal Cumberland Waste Cumberland Waste Disposal Ocoee Environmental Services Scott Solid Waste Southern Disposal
WASTE CONNECTIONS OF TEXAS, LLC	Delaware	Caprock Waste Hardy Road Transfer Station Hill Country Refuse Vaquero Waste & Recycling Waste Connections of Texas West Texas Disposal
WASTE CONNECTIONS OF UTAH, INC.	Delaware	City Sanitation Roche & Sons
WASTE CONNECTIONS OF WASHINGTON, INC.	Washington	Buchmann Sanitation Service Empire Disposal Hauling Lakeside Disposal & Recycling Company The Disposal Group Triangle Resources Twin City Sanitary Service Vancouver Sanitary Service Waste Connections of Spokane
WASTE CONNECTIONS OF WYOMING, INC.	Delaware	American Disposal American Disposal, Inc. BW Waste Edwal Services Green River Valley Refuse Kieffer Sanitation Ryan Sanitation
WASTE CONNECTIONS PALMETTO, INC.	Delaware	
WASTE CONNECTIONS US, INC.	Delaware	
WASTE CONNECTIONS US HOLDINGS, INC.	Delaware	
WASTE INNOVATIONS, LLC	Arizona	Waste Innovations Waste Innovations Leasing
WASTE REDUCTION SERVICES, L.L.C.	Oregon	
WASTE SERVICES OF N.E. MISSISSIPPI, INC.	Mississippi	
WASTE SOLUTIONS GROUP OF SAN BENITO, LLC	Delaware	John Smith Road Landfill
WATERWAY TRAILS INC.	Texas	
WCI AUSTIN LANDFILL, LLC	Minnesota	
WCI-WHITE OAKS LANDFILL, INC.	Delaware	White Oaks Landfill
WCN ACQUISITION SUB JANUARY 2017, INC.	Texas	
WCN DE LP CORPORATION	Delaware	
WCN TX GP CORPORATION	Delaware	
WEST BANK ENVIRONMENTAL SERVICES, INC	Indiana	Leftovers of Wyoming Westbank Sanitation
WEST COAST RECYCLING AND TRANSFER, INC.	Oregon	Public Disposal and Recycling Center Store-It
WEST VALLEY COLLECTION & RECYCLING, LLC	California	
WINNEBAGO LANDFILL COMPANY, LLC	Illinois	
WINNEBAGO RECLAMATION SERVICE, INC.	Illinois	
WYOMING ENVIRONMENTAL SERVICES, INC.	Indiana	Wyoming Waste Systems
YAKIMA WASTE SYSTEMS, INC.	Washington	

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our reports dated February 14, 2019, with respect to the consolidated financial statements and internal control over financial reporting included in the Annual Report of Waste Connections, Inc. on Form 10-K for the year ended December 31, 2018. We hereby consent to the incorporation by reference of said reports in the Registration Statements of Waste Connections, Inc. on Forms S-8 (Nos. 333-168064, 333-212245, 333-212244, and 333-212243) and Form S-3 (333-225219).

/s/ GRANT THORNTON LLP
Houston, Texas
February 14, 2019

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-168064, 333-212245, 333-212244, and 333-212243) and on Form S-3 (No. 333-225219) of Waste Connections, Inc. of our report dated February 27, 2017, except for the effects of the share split and the change in composition of reportable segments discussed in Notes 11 and 14 to the consolidated financial statements, respectively, and the manner in which the Company accounts for deferred income taxes discussed in Note 1 (not presented herein) to the consolidated financial statements appearing under Item 8 of the Company's 2017 annual report on form 10-K, as to which the date is February 15, 2018 and except for the change in the manner in which the Company accounts for restricted cash discussed in Note 1 to the consolidated financial statements, as to which the date is February 14, 2019, relating to the financial statements and financial statement schedule, which appears in this form 10-K.

/s/ PricewaterhouseCoopers LLP

Houston, Texas
February 14, 2019

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO EXCHANGE ACT RULE 13a-14(a) OR RULE 15d-14(a) AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Ronald J. Mittelstaedt, certify that:

1. I have reviewed this Annual Report on Form 10-K of Waste Connections, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

- b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 14, 2019

/s/ Ronald J. Mittelstaedt

Ronald J. Mittelstaedt
Chairman and
Chief Executive Officer

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO EXCHANGE ACT RULE 13a-14(a) OR RULE 15d-14(a) AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mary Anne Whitney, certify that:

1. I have reviewed this Annual Report on Form 10-K of Waste Connections, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

- b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 14, 2019

/s/ Mary Anne Whitney

Mary Anne Whitney
Senior Vice President and
Chief Financial Officer

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER

**Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)**

I, Ronald J. Mittelstaedt, being the duly elected and acting Chief Executive Officer of Waste Connections, Inc., a corporation organized under the laws of Ontario, Canada (the "Company"), hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. The Annual Report of the Company on Form 10-K for the year ended December 31, 2018 (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 14, 2019

By: /s/ Ronald J. Mittelstaedt
Ronald J. Mittelstaedt
Chief Executive Officer

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. Section 1350, and shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and shall not be deemed to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing, except to the extent that the Company specifically incorporates it by reference.

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER

**Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)**

I, Mary Anne Whitney, being the duly elected and acting Chief Financial Officer of Waste Connections, Inc., a corporation organized under the laws of Ontario, Canada (the "Company"), hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. The Annual Report of the Company on Form 10-K for the year ended December 31, 2018 (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 14, 2019

By: /s/ Mary Anne Whitney
Mary Anne Whitney
Senior Vice President and
Chief Financial Officer

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. Section 1350, and shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and shall not be deemed to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing, except to the extent that the Company specifically incorporates it by reference.
