Individual - Solid Waste Processing Facility Permit Application - Yard Waste (Y), Organic Waste (O), or Mixed Solid Waste (S) Composting Facilities; Transfer Station (TS); SW Material Recovery (WRF); Construction and Demolition Recycling Facility (CDRF)

version 1.23

(Submission #: HPX-SWPP-XD68W, version 1)

Details

Submitted	9/22/2023 (3 days ago) by Stacie Whitmer
AFIN	03-00454
Reference #	0116-STSW-D; Doc ID 84667
Submission ID	HPX-SWPP-XD68W
Submission Reason	Modification
Submission Assigned Staff	Richard Bennett
Status	In Review

Fees

Fee	$900.00
Payments/Adjustments	$0.00
Balance Due	$900.00 (Due)

Form Input

Facility Identification

Facility Type
Solid Waste Transfer Station (TS)

Type of Application
Initial

Is the Facility New or Existing?
Existing

Fee Amount ($)
900

Facility Name
Gassville Solid Waste Transfer Station

Arkansas DEQ Facility Identification Number (AFIN), If Applicable
03-00454

Site Manager
James Mathis

Facility Location (Directions to the Facility)
In Baxter County, approximately 2 miles east-northeast of Gassville

Facility Contact and Physical Location (Site Address)

First Name	Last Name
James	*Mathis*

Title
Site Location

Phone Type	Number	Extension
Business	870-715-9363	

Email
James.Mathis@WasteConnections.com

Fax
NONE PROVIDED

Address
162 County Road 5
Gassville, AR 72635
Baxter

Please Provide the Latitude and Longitude of the Facility
36.2955,-92.4486

Section/Township/Range of the Facility
Section 26, Township 19 North, Range 14 West

Applicant Identification

Applicant Name
Waste Connections of Arkansas, Inc.

Is the applicant the Facility Owner?
Yes

Applicant Contact Person and Address

Applicant Contact

First Name	Last Name
James	*Mathis*

Phone Type	Number	Extension
Business	870-715-9363	

Email
James.Mathis@WasteConnections.com

Fax
NONE PROVIDED

Applicant Address
162 County Road 5
Gassville, AR 72635
[NO COUNTRY SPECIFIED]

Site Information

Legal Description

WASTE CONNECTIONS OF ARKANSAS INC-001-08585-000 - ARCountyData.com.pdf - 09/22/2023 05:41 PM

Comment

The W 1/2 of the NE 1/4 NE 1/4 of Section 26, Township 19 North, Range 14 West, lying North of Old Military Road, EXCEPTING that part of the NE 1/4 NE 1/4, Section 26, Township 19 North, Range 14 West, described as follows: Beginning at the NW corner of said forty and run thence East on the North line thereof 13 rods to a point, run thence South 25 rods to a point; run thence West 13 rods to the West line of said forty; run thence North 25 rods to the point of beginning.

Directions to the Facility Site

Start at the intersection of AR Highway 412 and Arkansas 126 in Gassville.
Head East on AR-Highway 412 for 1.9 miles. Turn right on to County Road 5. After 0.2 miles,
the site will be on the left.

Location of the Property Referenced to Known Landmarks Describing the Access Roads to Site

The site is east of the Great Escapes Supercenter.

Describe Site and Area Drainage

The Transfer Station has a General Industrial NPDES permit (ARR001234)
and has developed a Storm Water Pollution Prevention Plan (SWPPP)
to address stormwater discharges from the site.

Houses, Dwellings, and Places of Business Within 1/2 Mile of Site and the Method Used to Determine

This existing transfer station that has been operating with a general permit from DEQ since 2013.
All transfer station active areas are greater than 50 feet from the boundary. All neighboring structures are beyond the 200-foot buffer required by Rule 22.902(a)(5).

Water Supplies Within 1/2 Mile of Site and Method Used to Determine

All neighboring water wells are beyond the 200-foot buffer required by Rule 22.902(a)(5).
Searched with Radius Search at wise.er.usgs.gov.

Facility Information

Describe Facility Service Area

The geo-political jurisdictions served by the Transfer Station include all of Baxter County.

Identify the Average Weight or Volume of the Material That This Facility Will Receive or Process

Basis	Amount	Units
Amount Received Per Day	384.6	Tons
Amount Received Annually	120,000	Tons
Amount Per Day Residual (Enter 0 If Not Applicable)	0	Tons

Provide a Brief Description of the Disposition of Transferred/Processed Material, and, If Applicable, How Any Residual Material Will Be Disposed

The Transfer Station will accept Class 1 MSW, Class 4 Solid Waste, and certain recyclables. Any industrial process waste and/or infectious waste will not be accept. Asbestos waste is not sorted or directly handled onsite, only stored onsite until manifested and shipped to an appropriate landfill. All solid waste received will be transported to a DEQ permitted Class 1 landfill.

Identify the Average and Maximum Time That Waste is Anticipated to be Stored on Site

Basis	Time	Units
Average Time	1	Days
Maximum Time	3	Days

Required Attachments

Identify Below Each Design Drawing or Document Included with This Application

Drawing Number	Title	Date	Revision Number
1	Site Location Map	9/20/2023	0
2	Facility Map	9/20/2023	0

Drawing Number	Title	Date	Revision Number
3	Airport Restriction Map	9/20/2023	0
4	Flood Plains Map	12/23/2022	0
5	Wetlands Map	12/23/2022	0
6	Baxter County Map	9/20/2023	0
7	Water Well Locations	9/20/2023	0

Is the Applicant a Government Entity (Federal, State, County, Municipal, or Regional Solid Waste Authority)?
No

Disclosure Statement Form

Disclosure Statement
2022 Annual Report and Form 10-K.pdf - 09/22/2023 05:33 PM
Comment
Submitting WC's Annual Financial Report in place of a Disclosure Statement, pursuant to Rule 22.903(b).

USGS Map
Fig 3 Airport Radius-AR_Mountain_Home_West_20200729_TM_geo.pdf - 09/22/2023 05:41 PM
Comment
NONE PROVIDED

Appropriate Agency Documentation of Conformance
Figure 4 FIRMETTE_fdf286a7-89f4-402e-a07b-0e13a3edab08.pdf - 09/22/2023 05:44 PM
Figure 5 - Wetlands - Gassville.pdf - 09/22/2023 05:44 PM
Figure 7 - Waterwells.pdf - 09/22/2023 05:44 PM
Comment
This is an existing facility.

Legal Authority Proof
WASTE CONNECTIONS OF ARKANSAS INC-001-08585-000 - ARCountyData.com.pdf - 09/22/2023 05:44 PM
Comment
NONE PROVIDED

Is Local Authority Approval Required by Section 22.203, 22.204, or 22.205?
No

Site Location on City or County Map
Figure 6 - Zoning.pdf - 09/22/2023 05:45 PM
Comment
NONE PROVIDED

Are Notifications to Regional Solid Waste Management District, Local City, or County with Jurisdiction Over the Proposed Site Required by Rule 22.204?
No

Certificate of Need
OMSWD- Letter to Stacie Whitmer.pdf - 09/22/2023 05:46 PM
Comment
NONE PROVIDED

Site and 1/2 Mile Surrounding Land Use, Zoning, and Existing Features Map
Fig 3 Airport Radius-AR_Mountain_Home_West_20200729_TM_geo.pdf - 09/22/2023 05:47 PM
Figure 7 - Waterwells.pdf - 09/22/2023 05:47 PM
Comment
NONE PROVIDED

REQUIRED DOCUMENTS

A disclosure statement, if required;

A 7.5 minute quadrangle map showing the location of the facility property including processing facility boundaries, area dwellings and water supplies;

Documentation on whether the selected site in in conformance with the applicable airport safety, floodplain, wetlands, and separation distances location restrictions;

Assurance in the form of a deed, lease, option, license, or other document that the permit applicant has the legal authority to enter the lands for purposes of performing site investigations and studies and authority to process solid waste upon issuance of a permit;

Local authority approval if required by Section 22.203-22.205;

Location of the site in an appropriate scale on a city or county map;

Notification to Regional Solid Waste Management District and to local city or county with jurisdiction over the proposed site if required by Section 22.203 and a Certificate of Need from the Regional Solid Waste Management District for Transfer Stations or Solid Waste Recovery facilities (see 22.205);

See Rule 22, Chapter 8 for composting rules and requirements.
Fee Schedule

Additional Required Documents for Transfer Stations, Solid Waste Recovery and Construction & Demolition Recycling Facilities

Application fee as required by Rule 9 of the Department;

Location demonstration including a map or aerial photograph indicating land use and zoning within 1/2 mile of the facility and showing all residences, structures, surface waters, public and private water supply sources, access roads, airports and other existing and proposed man-made features relating to the project;

Maps showing the existence of any wetlands or floodplains on or adjacent to the site. To determine if the proposed site is in a floodplain, flood insurance rate maps (FIRMS) published by Federal Emergency Management Agency (FEMA) can be used;

Certificate of Need (TS & WRF) and other required approvals;

A site plan showing storage areas for incoming solid waste, location of existing and proposed access roads, site topography, existing and proposed drainage characteristics including any run-on and run-off control systems;

A design narrative or specifications describing the facility design;

Operating Plan or Narrative that addresses the criteria in Reg. 22 Section 22.904 or 22.1004;

Closure plan;

Any additional information deemed necessary by the Department;

See Rule 22, Chapter 9 for transfer stations/waste recovery facilities for rules and requirements; See Chapter 10 for CDRF rules and requirements.
Fee Schedule

REQUIRED DOCUMENTS

NONE PROVIDED
Comment
NONE PROVIDED

Site Plan

Figure 1 - Site Location.pdf - 09/22/2023 05:49 PM
Comment
NONE PROVIDED

Design Narrative or Specifications

Figure 2 - Site Layout.pdf - 09/22/2023 05:49 PM
Comment
NONE PROVIDED

Operating Plan or Narrative

Gassville TS Plan of Operations.pdf - 09/22/2023 05:49 PM
Comment
NONE PROVIDED

Closure Plan

Gassville TS Plan of Operations.pdf - 09/22/2023 05:50 PM

Comment

The Closure Plan is Section 17 of the Operating Plan.

Other Required Documents

This data has been deemed sensitive by the creator of this form and requires the 'Confidential Viewer' role.

Signatories

Applicant or Authorized Person as Defined in Rule 22.301(h)

First Name	Last Name
Joseph	*Vieceli*

Title

Senior Engineer

Phone Type	Number	Extension
Business	832.442.2906	

Engineer or Consultant in Accordance with Rule 22.301(i)

First Name	Last Name
Benjamin	*Reynolds*

Title

Senior Project Professional

Phone Type	Number	Extension
Business	5015034777	

Attachments

Date	Attachment Name	Context	User
9/22/2023 5:55 PM	CertificationForm.pdf	Unknown	Stacie Whitmer
9/22/2023 5:50 PM	Gassville TS Plan of Operations.pdf	Attachment	Stacie Whitmer
9/22/2023 5:49 PM	Gassville TS Plan of Operations.pdf	Attachment	Stacie Whitmer
9/22/2023 5:49 PM	Figure 1 - Site Location.pdf	Attachment	Stacie Whitmer
9/22/2023 5:49 PM	Figure 2 - Site Layout.pdf	Attachment	Stacie Whitmer
9/22/2023 5:47 PM	Figure 7 - Waterwells.pdf	Attachment	Stacie Whitmer
9/22/2023 5:47 PM	Fig 3 Airport Radius-AR_Mountain_Home_West_20200729_TM_geo.pdf	Attachment	Stacie Whitmer
9/22/2023 5:46 PM	OMSWD- Letter to Stacie Whitmer.pdf	Attachment	Stacie Whitmer
9/22/2023 5:45 PM	Figure 6 - Zoning.pdf	Attachment	Stacie Whitmer
9/22/2023 5:44 PM	WASTE CONNECTIONS OF ARKANSAS INC-001-08585-000 - ARCountyData.com.pdf	Attachment	Stacie Whitmer
9/22/2023 5:44 PM	Figure 7 - Waterwells.pdf	Attachment	Stacie Whitmer

Date	Attachment Name	Context	User
9/22/2023 5:44 PM	Figure 5 - Wetlands - Gassville.pdf	Attachment	Stacie Whitmer
9/22/2023 5:44 PM	Figure 4 FIRMETTE_fdf286a7-89f4-402e-a07b-0e13a3edab08.pdf	Attachment	Stacie Whitmer
9/22/2023 5:41 PM	WASTE CONNECTIONS OF ARKANSAS INC-001-08585-000 - ARCountyData.com.pdf	Attachment	Stacie Whitmer
9/22/2023 5:41 PM	Fig 3 Airport Radius-AR_Mountain_Home_West_20200729_TM_geo.pdf	Attachment	Stacie Whitmer
9/22/2023 5:33 PM	2022 Annual Report and Form 10-K.pdf	Attachment	Stacie Whitmer

Internal Data

Label	Value
Fee Code Amount	900
If a Hardcopy ePortal Certification Form was Submitted, Enter the Date It was Received	

WASTE CONNECTIONS

Connect with the Future®

2022 ANNUAL REPORT



DIFFERENTIATED FROM THE START



1997 — FOUNDED IN 1997 WITH FOCUS ON EXCLUSIVE AND SECONDARY MARKETS; $6M OF REVENUE



1998 — NASDAQ IPO



2002 — NYSE DEBUT; $499M OF REVENUE



2005 — ADOPTION OF SERVANT LEADERSHIP CULTURE

2007 — $959M OF REVENUE

2010 — INTRODUCTION OF REGULAR QUARTERLY DIVIDEND

2012 — $1.7B OF REVENUE

2016 — ACQUISITION OF PROGRESSIVE WASTE, EXPANDING U.S. FOOTPRINT AND ENTERING CANADA

2017 — $4.6B OF REVENUE

2020 — INTRODUCTION OF SUSTAINABILITY TARGETS WITH $500M COMMITMENT TOWARDS THEIR ACHIEVEMENT



2022 — $7.2B OF REVENUE; COMPLETED ACQUISITIONS WITH ~$640M OF ANNUALIZED REVENUE; 12TH CONSECUTIVE YEAR OF DOUBLE-DIGIT PERCENTAGE GROWTH IN CASH DIVIDEND

25 YEAR ANNIVERSARY

TO OUR SHAREHOLDERS

In 2022, Waste Connections entered its 25th anniversary year positioned for outsized growth and prepared to execute on a proven playbook. We knew that remaining Intentional about Strategy, Culture and Value Creation would be critical to our continuing success.

Looking back on a year of robust growth, differentiated results and stock market outperformance in 2022, we are proud of our accomplishments and are grateful for the commitment of our over 22,000 employees. Their tireless efforts positioned us to not only overcome the challenges of limited labor availability and elevated wage, fuel and inflationary pressures, compounded by a dramatic drop-off in recycled commodity values during the year, but also to emerge as a more cohesive and resilient team with strong momentum into 2023.

REFLECTING ON OUR 25TH ANNIVERSARY

Waste Connections' accomplishments, as measured by any number of financial or operational metrics, provide an enduring track record of growth and value creation over the past 25 years. From our beginnings in 1997 with a small presence in U.S. West coast franchise markets, we have expanded our footprint to 43 states and six provinces in Canada and are on pace to generate over $8 billion of revenue in 2023. Beyond these accomplishments, we are most proud of our Operating Values, which may be less prominent but are also enduring: safety, integrity, customer service, being a great place to work, and the premier waste services company in the U.S. and Canada. We maintain that these values and our servant leadership-based culture are ultimately what have driven success in our employees' personal and professional lives, and industry-leading shareholder value creation.

Looking at Total Shareholder Returns[1], we outpaced the S&P 500 by over 1,600 basis points in 2022 and continued our long-term outperformance of sector and market indices for the 5- and 10-year periods ending December 31, 2022. Moreover, we have delivered Total Shareholder Returns[1] of 5,846% since going public in May 1998 through year-end 2022. These results are a testament to our model, which has delivered outsized results for 25 years: a purposeful culture, differentiated strategy and disciplined execution.

	1997	2002	2007	2012	2017	2022
Revenues ($M)	6	499	959	1,662	4,630	7,212
Locations	2	168	243	372	610	793
Employees	200	3,609	4,978	6,606	15,283	>22,000
Cumulative TSR[1]	N/A	170%	479%	718%	3,000%	5,846%

OUTPERFORMANCE SINCE 1998 IPO: WCN TSR[1] VS. S&P 500



LOOKING AT 2022

In 2022, we delivered strong results from price-led organic growth and acquisitions, outperforming the solid waste sector and market indices. Revenue grew 17.2% from the prior year to $7.212 billion and drove adjusted EBITDA[2] up by 15.7% to $2.221 billion, or 30.8% of revenue, with margins up year over year excluding the impact of acquisitions. Moreover, adjusted free cash flow[2] increased by 15.4% from the prior year to $1.165 billion, or 16.2% of revenue and 52.5% of adjusted EBITDA[2]. An acceleration in pricing throughout 2022 and acquisitions completed in the year provide strong momentum into 2023. Safety, employee retention, recruiting and engagement all showed improving trends as we exited the year.

Notably, we accomplished these results while implementing a 23% year-over-year step-up in capital expenditures, as we reinvested in the business while also completing 24 acquisitions with annualized revenues of approximately $640 million to strategically expand our business. In total, we deployed $3.25 billion for capital expenditures and acquisitions while maintaining balance sheet strength and flexibility for continuing growth. We also capitalized on favorable market conditions earlier in the year to issue $1.25 billion of 10-year fixed rate registered notes and later expanded our credit facilities by $800 million.

Industry-leading free cash flow conversion, a hallmark of our strategy, once again provided flexibility to fund outsized acquisition outlays and reinvestment in the business, while also increasing the return of capital to our shareholders. In 2022, we returned an aggregate of $668 million through opportunistic share repurchases of $425 million and cash dividends of $243 million. Our regular quarterly cash dividend has grown at a compound annual growth rate of 14.7% after twelve consecutive double-digit percentage annual per share increases since initiation.

SUSTAINING ABILITY AND SUSTAINABILITY

We believe our 25-year track record demonstrates sustaining ability, and we consider sustainability efforts as integral to our business and consistent with our objective of long-term value creation. There should be no trade-off between the two.

As detailed in our 2022 Sustainability Report, we have demonstrated progress towards achievement of ESG targets identified in 2020, introduced additional targets for emissions reductions, and are considering a Science-Based Target Initiative (SBTi) emissions reduction target. Since our introduction of targets in 2020, we reported an absolute reduction in Scope 1 and 2 emissions of 7% and an 18% reduction in emissions intensity. We also provided increased disclosure, including through our Environmental Justice (EJ) analysis, EE01 diversity statistics and reporting aligned with the Task Force on Climate-related Financial Disclosures (TCFD) framework.

At Waste Connections, we maintain that safety is our number one Operating Value and, as such, requires the commitment of every team member. Our 2022 results showed approximately 60% of operating locations posted either zero safety-related incidents or reduced incident frequency from the prior year. Further, our Total Recordable Injury Rate and cost of risk as a percentage of revenue remained well below industry averages.

We believe relationships drive results. At the heart of our safety-focused culture, servant leadership has been integral to Waste Connections' success and means putting employees first, as demonstrated by:

- continued elevated wage increases to improve employee recruiting and retention in a challenging labor environment and for employees to overcome macro-economic challenges;
- raised our minimum hourly wage target to $17 per hour in both the U.S. and Canada;
- enhanced income protection benefits and time-off plans to better accommodate the needs of our employees; and
- expanded training and development opportunities, with a return to the classroom and a 72% training participation rate in 2022.

And finally, it means fostering a culture of inclusivity and a sense of belonging through increased engagement and shared celebrations as we welcomed over 2,000 new employees from acquisitions alone in 2022.

LOOKING AHEAD AT 2023

We exited 2022 inspired by the commitment of our teams to overcome the challenging operating environment and drive continuing outperformance, and with greater visibility and upside potential in the current year. We believe 2023 is set up for double-digit revenue growth from the combination of solid waste price approaching 10% and over $350 million of revenue contribution from acquisitions already completed. We expect further adjusted EBITDA[2] margin expansion and growth in adjusted free cash flow[2] from our industry leading free cash flow conversion. Any moderation in inflationary pressures, increases in recycled commodity or renewable fuels values, or contribution from additional acquisitions would provide upside.

Following 25 years of differentiated growth, financial performance and total shareholder returns, Waste Connections may be bigger, but we have not lost sight of the fact that being intentional about Strategy, Culture and Value Creation sets us apart. We remain committed to our proven playbook as we continue on our path to $10 billion of revenue and beyond.

With gratitude for your continuing support,



RONALD J. MITTELSTAEDT
Executive Chairman



WORTHING F. JACKMAN
President and Chief Executive Officer



MARY ANNE WHITNEY
Executive Vice President and Chief Financial Officer

WHO WE ARE

Waste Connections is an integrated solid waste services company that provides non-hazardous waste collection, transfer and disposal services, along with resource recovery primarily through recycling and renewable fuels generation.

We serve more than eight million residential, commercial and industrial customers in mostly exclusive and secondary markets across 43 states in the U.S. and six provinces in Canada. We also provide non-hazardous oilfield waste treatment, recovery and disposal services in several basins across the U.S., as well as intermodal services for the movement of cargo and solid waste containers in the Pacific Northwest.

2022 PERFORMANCE HIGHLIGHTS

$7.212B
REVENUE, UP 17.2%

$836M
NET INCOME

$2.221B
ADJUSTED EBITDA[2], UP 15.7%

$2.022B
NET CASH FROM OPERATING ACTIVITIES, UP 19.1%

$3.25B
ACQUISITION OUTLAYS AND CAPITAL EXPENDITURES

~$640M
ACQUIRED ANNUALIZED REVENUES

TOTAL SHAREHOLDER RETURN[1]
~1,600 bps
ABOVE S&P 500

$668M
RETURNED TO SHAREHOLDERS

INCREASED PER SHARE DIVIDEND
▲ 10.9%

1. Total Shareholder Return ("TSR") defined as profit generated from all stock appreciation and dividends; Source – FactSet financial data and analytics and historical dividends.
2. Non-GAAP measure. See Non-GAAP Measures on pages 72–74 of our Annual Report on Form 10-K for the year ended December 31, 2022.
This 2022 Annual Report should be read together with our Annual Report on Form 10-K for the year ended December 31, 2022, including Item 1A - Risk Factors.

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, 2022

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
Connect with the Future®

(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.)
6220 Hwy 7, Suite 600
Woodbridge
Ontario L4H 4G3
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:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares, no par value	WCN	New York Stock Exchange ("NYSE") Toronto Stock Exchange ("TSX")

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 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 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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☑

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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, 2022, 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 $31,785,271,082.

Number of common shares outstanding as of February 3, 2023: 257,220,344

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Management Information Circular and Proxy Statement for the 2023 Annual 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 2022 fiscal year) are incorporated by reference into Part III hereof.

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

ITEM 1. BUSINESS

This Annual Report on Form 10-K contains forward-looking statements based on expectations, estimates, and projections as of the date of this filing. Actual results may differ materially from those expressed in forward-looking statements. See Item 7 of Part II – "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Our Company

Waste Connections, Inc. is the third largest solid waste services company in North America, providing non-hazardous waste collection, transfer and disposal services, along with resource recovery primarily through recycling and renewable fuels generation, in 43 states in the U.S. and six provinces in Canada. Waste Connections also provides non-hazardous oil and natural gas exploration and production, or E&P, waste treatment, recovery and disposal services in several basins across the U.S., as well as intermodal services for the movement of cargo and solid waste containers in the Pacific Northwest.

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 non-hazardous E&P waste treatment and disposal services, with similar characteristics. 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 churn 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.

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.

Manage on a Decentralized Basis. We manage our operations on a decentralized basis through five geographic operating segments. 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.

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 17 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.

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 several years, most notably with the acquisition of Advanced Disposal Services, Inc. by Waste Management, Inc. in October 2020 and our acquisition of Progressive Waste (as defined below) in June 2016. In spite of this consolidation, the solid waste services industry remains regional in nature, with acquisition opportunities available in select markets. In some markets in both municipal solid waste, or 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, 2022, we completed 24 acquisitions for consideration having a net fair value of $2.334 billion. During the year ended December 31, 2021, we completed 30 acquisitions for consideration having a net fair value of $1.069 billion. During the year ended December 31, 2020, we completed 21 acquisitions for consideration having a net fair value of $481.6 million.

HUMAN CAPITAL

We believe that people are our greatest differentiator. We aim to be an employer of choice that attracts and retains high performing talent with the mindset, skillset and commitment to uphold our values of safety, integrity, customer service, being a great place to work and the premier solid waste services company in the U.S. and Canada. Our goal is to create an environment where self-directed, empowered employees strive to consistently fulfill our constituent commitments and seek to create positive impacts through interactions with customers, communities and fellow employees, always relying on our Operating Values as the foundation for our existence. All employees are responsible for upholding the Waste Connections Vision and Values, and the Waste Connections Code of Conduct, which form the foundation of our policies and practices. Moreover, we are committed to an inclusive, supportive environment built on the principles of

Servant Leadership, valuing diversity and inspiring employee growth. As such, developing our talent and maintaining our culture through employee engagement are integral to the growth and sustainability of our business.

Our Workforce

As of December 31, 2022, our employee population consisted of 22,109 active employees, 10,866 of whom are commercial truck drivers and 1,815 of whom are mechanics. There were 18,799 employees located in the United States and 3,310 employees located in Canada. 40% of active employees are ethnic minorities, 17% are women, and 8% are from the armed services.

As of December 31, 2022, 3,323 employees, or approximately 15% 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. In 2022, we did not experience any work stoppages or have any days idle as a result of labor issues. We have 17 collective bargaining agreements covering 1,059 employees that have expired or are set to expire during 2023. We do not expect any significant disruption in our overall business in 2023 as a result of labor negotiations, employee strikes or organizational efforts by labor unions or their representatives.

COVID-19-Related Employee Support

Since the onset of the pandemic of coronavirus disease 2019, or COVID-19, protecting the health, safety and welfare of our employees has been our top priority. In order to support and protect our employees, we established protocols and implemented operational changes focused on the health and safety of our frontline employees and accommodated transitions to remote work environments for customer service representatives and other support personnel. In addition, recognizing the potential for financial hardship and other challenges, we looked to provide a safety net for our employees on issues of income and family health.

To that end, since the onset of the pandemic and through the end of 2022, we have incurred over $50 million in incremental COVID-19-related costs, including approximately $10 million in supplemental pay for frontline employees in 2022. COVID-19-related support included bonus payments as well as supplemental wages, which were provided to all frontline employees, whether union or non-union, remote or on-site, as well as temporary workers. We provided full base wages for employees feeling ill, under quarantine, or caring for family members, and two-thirds of base wages for up to 12 weeks for those unable to work due to childcare needs. We also expanded our Employee Relief Fund for those experiencing financial hardship, launched the Waste Connections Scholarship Program to assist our employees' children in pursuing their educational goals, covered COVID-19-related testing and medical costs, and expanded and extended access to medical benefits.

In addition to our COVID-19-related financial commitments, in 2020 we proactively raised our minimum U.S. hourly wage target to $15 per hour (CAD $16 per hour in Canada), which we increased to a target of $17 per hour (CAD $17 per hour in Canada) in 2022, in both cases exceeding many state, provincial and local wage requirements. Looking beyond our people, we also recognized the needs of the communities where we live and work, increasing the level of charitable contributions to assist food banks, families at risk, and organizations with a focus on addressing racial inequities at a local or national level, and providing meals for higher risk populations. In 2022, we maintained the higher levels of community support as we continued to focus on the well-being of our employees and the communities we serve.

Safety

Safety is our first operating value at Waste Connections. We are committed to the safety of our employees, customers, and the communities we serve. Our ultimate goal is to "Drive to ZERO", that is, to work toward achieving zero incidents and accidents. Our success in safety is driven by our self-directed and empowered employees taking personal ownership for their safety and the safety of those around them. As servant leaders, we endeavor every day to protect our employees and the communities we are privileged to work in and around. We utilize on-board event recording technology to identify both risky behavior, which is coached, and best practices, which are reinforced and rewarded with safety bonuses. We

have developed a risk-based scoring system for our drivers to improve their safe driving skills and hold our leaders responsible for the performance of the employees they are privileged to serve.

In 2022, this behavior-based approach to safety resulted in approximately 60% of our operating locations posting zero safety-related incidents or reduced incident frequency over the prior year. In addition, our Total Recordable Incident Rate (TRIR) remains well below industry averages.

Safety training is an integral part of our culture of safety. To reinforce safe driving skills and safe work practices throughout Waste Connections, we require both initial training for all new driver employees and reinforcement training each year. Areas of focus in training include: "Target 4" defensive driving, Smith System driving fundamentals, Injury & Illness prevention, and Safe Work Practices training. We further emphasize the importance of safety through regular tailgate safety meetings and rollout safety instructions for our drivers, and through the utilization of electronic safety communication boards, safety alerts, and other communications to heighten awareness and maintain focus every day on the importance of safety.

While we attribute our successful safety record to our culture and behavior-based approach, we recognize that advances in fleet design and technology can be important tools in identifying risky behaviors and providing coaching opportunities to further our efforts to achieve our long-term, aspirational target of a 25% reduction in incident rates as described in our 2022 Sustainability Report (www.wasteconnections.com/sustainability). To that end, in 2022, we completed a multi-year implementation of an over $10 million fleet-wide upgrade of our on-board event recording technology, adding Machine Vision and Artificial Intelligence to identify at-risk behaviors. We also expanded our use of Freightliner EconicSD trucks, which provide enhanced safety features, as well as an integrated collision mitigation system, enhanced visibility, and several ergonomic improvements.

Culture/Servant Leadership

At Waste Connections, we maintain that our purposeful culture drives differentiated results; therefore, investing in our people is a priority as we employ an approach guided by Servant Leadership. This concept inverts the traditional management hierarchy, positioning leaders to serve their employees both professionally and personally. The philosophy empowers employees by prioritizing their needs, sharing responsibility and driving personal development. As a result, a significant amount of management time and resources are dedicated to leadership training and development.

Training and Development

In late 2022, we launched our revamped new driver training program, called Making the Connection. Designed specifically for our Company as a blended learning experience, with on-the-job learning, one-on-one coaching and a series of eLearning modules, our newly hired drivers will be provided a best-in-class onboarding and training experience. In addition, we have dedicated training resources to certify our Driver Trainers across the U.S. and Canada to deliver quality, interactive training experiences. These efforts are all focused on training and retaining the safest drivers in our industry.

Our leadership development efforts focus on multi-day Servant Leadership training sessions, in which approximately 38% of our leadership team participated in 2022, following 24% participation in 2021, as we generally returned to in-person training, with online options also available. These leadership training sessions are developed and administered by dedicated internal resources and also include participation by the senior leadership team.

In addition, the Company provides a broad range of other training and on-the-job learning opportunities, including district management training, varying leadership webinar topics, and other safety, sales, maintenance, operations and financial training courses engaging every level of our employees throughout the Company. In 2022, we expanded our retention-focused program called "Intentional Retention" to our leadership training and development efforts with a focus on skills in key areas that influence employee tenure.

Through our Learning Management System, or LMS, we track employee progress and can utilize the LMS to share new course topics and additional content. We continued to expand training opportunities available to our employees and

increased the number of sessions offered by over 40% in 2022 from the prior year, with approximately 72% of all employees participating in either a virtual or in-person training.

Employee Pay and Benefits

We strive to make Waste Connections a great place to work. Our approach to attracting safe, productive workers includes a focus on providing full time, stable, local jobs with competitive pay and benefits.

Our pay and benefits strategy is designed to provide programs and services that help meet the varying needs of our employees, particularly during challenging periods like the COVID-19 pandemic, when we increased our targeted minimum wage and introduced the Waste Connections Scholarship Program, in addition to providing discretionary supplemental pay and benefits, including expanded access to our Employee Relief Fund. Our total rewards package for frontline employees includes market-competitive pay, bonus opportunities, affordable and comprehensive healthcare plans, market-leading retirement benefits, generous and flexible time off plans, and the opportunity to share in the Company's success through an Employee Share Purchase Plan. Our leaders also are eligible for incentive compensation programs consisting of an annual cash bonus, equity, or both, dependent on their contributions to improving safety, financial results, and key human capital measures like turnover, employee development and employee survey scores.

In 2022, we expanded our income protection benefits and time-off plans to better accommodate the needs of our U.S. employees, including those early in their employment with Waste Connections, to balance work and homelife as they address personal and family needs. For employees who are ill or injured outside of work, we reduced the waiting period for short term disability benefits and increased the income replacement rate and maximum benefit amounts. We also introduced additional parental time off for men and women taking time for the birth, adoption, or foster placement of a new child.

In 2022, we continued to grow the Waste Connections Scholarship Program, launched in 2020, as a way to help our employees' children achieve their vocational, technical and university education goals. The scholarship program awards renewable scholarships to children of Waste Connections' employees based on academic record, demonstrated leadership, participation in school activities, work experience, career goals and family circumstances. Determined by an impartial third party, award recipients receive $2,500 each per academic year for up to four years. To date, the program has 125 recipients with financial contributions from Waste Connections that exceed $300,000 and a total commitment of up to $1.25 million.

Employee Engagement

Beyond compensation and benefits, we believe employee engagement includes increased investments in training and development of our leaders and frontline employees, along with new technology offerings to expand connectivity both inside and outside of the Company. We also recognize the importance of engagement in driving culture and increasing retention, which has been magnified since 2020, when the COVID-19 pandemic necessitated the use of remote alternatives to in-person training and development and highlighted the importance of connectivity both inside and outside of the Company. In response, we launched *Workplace*, our internal, mobile-friendly collaborative software platform that allows all employees, employee resource groups and leaders to share a steady stream of news and stories to connect, inform and further increase employee engagement.

We conduct an annual Servant Leadership survey, which provides employees the opportunity to evaluate their managers on an anonymous basis and provide written feedback. We target continuous improvement in the scores as an element of the long-term, aspirational goals outlined in our 2022 Sustainability Report. In 2022, we experienced continued improvement in our managers' Servant Leadership scores, with an employee response rate of over 86%.

Diversity and Inclusion

We are committed to building and developing diverse teams that function in an environment of mutual respect, where employees feel valued, empowered to contribute and positioned for success.

In keeping with our efforts to support and encourage diversity and inclusion, we have undertaken several initiatives, including adopting in 2019 a formal Diversity Policy for our Board of Directors and Senior Management with aspirational targets for female Board representation, which have been achieved through the addition of two female Board members since that time, and additional disclosure on workforce composition. Since that time, we incorporated diversity and inclusion into Servant Leadership training, expanded our annual Servant Leadership assessments of our managers by employees to incorporate a diversity and inclusion score, and introduced a monthly educational program focused on diversity and inclusion that is available to all employees through our LMS with additional discussion tools provided to our leadership team. In addition, we expanded our resources focused on encouraging diversity and inclusion through the addition of a Director of Experience, Inclusion and Diversity in 2022. We also enhanced recruiting practices to ensure the broadest candidate pools, established financial commitments to organizations that focus on racial inequities and that support women and children at risk, and supported the development of resource groups including our Women's Network and Veterans' S.E.R.V.E. Network. Waste Connections is a signatory to the CEO Action for Diversity & Inclusion, the largest CEO-driven business commitment to advance diversity and inclusion within the workplace.

Employee Recruiting

In 2022, we hired 6,713 employees through our network of internal recruiters operating on a divisional and regional basis. Our internal recruiting team endeavors to not only fill open positions, but to partner with hiring managers to continuously improve our efforts with respect to marketing, screening, interviewing, onboarding and employee retention. In addition to recruiting locally in the communities we serve, we use job fairs, open house events, employee referral programs, social media channels, local radio and television advertising, and school to work partnerships.

Our job opportunities are hosted on https://careers.wasteconnections.com, posted on www.indeed.com, www.linkedin.com, as well as state and provincial job boards, and syndicated to expand our reach to dozens of diversity-oriented and military-focused recruiting websites such as https://honorher.works, https://jobs.vetjobs.org, https://diversity.dejobs.org, https://enableamerica.dejobs.org and www.campuspride.jobs.

SUSTAINABILITY/ENVIRONMENTAL SOCIAL AND GOVERNANCE, OR ESG

Environmental, organizational and financial sustainability initiatives have been key components of our success since we were founded in 1997. We continuously monitor and evaluate new technologies and investments that can enhance our commitment to the environment, to our employees and to the communities we serve. These investments align with our focus on value creation for all stakeholders and we remain committed to expanding these efforts as our industry and technology continue to evolve. To that end, we have committed $500 million to the advancement of long-term, aspirational ESG targets established in 2020, with updates on progress towards their achievement provided in our 2022 Sustainability Report.

These targets include reducing environmental impact through expanded resource recovery capacity, increased landfill gas recovery and development of new renewable natural gas facilities, and increased on-site leachate treatment at our landfills. In addition, they focus on enhancing employee safety and engagement through reducing safety incident rates, continuous improvement in voluntary turnover, and increased Servant Leadership scores. In 2022, we expanded our ESG targets to include reductions in absolute emissions and reductions in emissions intensity. We also increased our ESG transparency in 2022 by introducing the Task Force on Climate-Related Financial Disclosure framework detailing climate-related risks and opportunities, in addition to an Environmental Justice analysis on our footprint and expanded diversity statistics through our EE0-1 disclosure. Moreover, since 2021, we have incorporated our ESG targets into executive compensation metrics.

We recognize the importance of disclosure surrounding these initiatives and strive to become increasingly transparent through the continued use and adoption of new ESG frameworks, expansion of ESG-related data points, as well as participation at ESG-related industry events and other investor engagements.

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, 2022, we owned or operated 75 MSW landfills, nine E&P waste landfills, which only accept E&P waste and 16 non-MSW landfills, which only accept construction and demolition, industrial and other non-putrescible waste. Eight of our MSW landfills also received E&P waste during 2022. 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.

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.

Based on remaining permitted capacity as of December 31, 2022, 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 31 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 10 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 35 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):

	2022			2021		
	Permitted	Probable Expansion	Total	Permitted	Probable Expansion	Total
Balance, beginning of year	1,474,754	212,722	1,687,476	1,383,123	158,522	1,541,645
Acquired landfills	92,270	—	92,270	41,374	—	41,374
Developed landfills	—	—	—	65,288	—	65,288
Divested landfills	(31,179)	(18,920)	(50,099)	(7,169)	—	(7,169)
Permits granted	35,128	(35,128)	—	36,778	(36,778)	—
Airspace consumed	(47,229)	—	(47,229)	(46,632)	—	(46,632)
Expansions initiated	—	9,720	9,720	—	84,342	84,342
Changes in engineering estimates	16,789	12,284	29,073	1,992	6,636	8,628
Balance, end of year	1,540,533	180,678	1,721,211	1,474,754	212,722	1,687,476

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, 2022, and December 31, 2021, are shown in the tables below. The estimated remaining operating lives include assumptions that the operating permits are renewed.

	2022						
	0 to 5	6 to 10	11 to 20	21 to 40	41 to 50	51+	Total
Owned and operated landfills	5	5	18	37	6	17	88
Operated landfills under life-of-site agreements	—	—	—	2	—	3	5
	5	5	18	39	6	20	93

	2021						
	0 to 5	6 to 10	11 to 20	21 to 40	41 to 50	51+	Total
Owned and operated landfills	3	6	15	35	9	19	87
Operated landfills under life-of-site agreements	—	—	—	2	—	3	5
	3	6	15	37	9	22	92

The disposal tonnage that we received in 2022 and 2021 at all of our landfills is shown in the tables below (tons in thousands):

	Three Months Ended								Twelve Months Ended
	March 31, 2022		June 30, 2022		September 30, 2022		December 31, 2022		
	Number of Sites	Total Tons	Number of Sites	Total Tons	Number of Sites	Total Tons	Number of Sites	Total Tons	December 31, 2022
Owned operational landfills and landfills operated under life-of-site agreements	89	10,987	89	12,416	91	11,888	93	11,938	47,229
Operated landfills	5	150	5	146	5	153	7	171	620
	94	11,137	94	12,562	96	12,041	100	12,109	47,849

	Three Months Ended								Twelve Months Ended
	March 31, 2021		June 30, 2021		September 30, 2021		December 31, 2021		
	Number of Sites	Total Tons	Number of Sites	Total Tons	Number of Sites	Total Tons	Number of Sites	Total Tons	December 31, 2021
Owned operational landfills and landfills operated under life-of-site agreements	87	10,189	87	12,433	89	12,545	92	11,465	46,632
Operated landfills	4	127	4	147	5	147	5	159	580
	91	10,316	91	12,580	94	12,692	97	11,624	47,212

The expiration dates for the seven operated landfills range from 2023 to 2042. We are seeking or intend to seek renewal of all seven contracts prior to, or upon, their expiration.

Transfer Station 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.

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 and operate recycling operations and market 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 Canada, as well as 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. We also believe that the costs of processing recyclables, including the costs of contamination, 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 for the collection of recyclables and for processing 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.

Beneficial Reuse of Landfill Gas

We develop, own and operate projects for the beneficial reuse of landfill gas through our landfill network. Over time, landfill gas is produced as waste decomposes at landfills, and the methane component is a readily available renewable energy source that can be gathered and converted into a valuable source of clean energy as recognized by the United States Environmental Protection Agency, or the EPA, in the same category as wind, solar, and geothermal resources. As of December 31, 2022 we have gas recovery systems at 55 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. For 17 of these beneficial reuse projects, the processed gas is used to fuel electricity generators. The electricity is then sold to public utilities. For 10 of these projects, the landfill gas is processed to pipeline quality natural gas and sold to natural gas companies. In some cases, landfill gas generated at our landfills qualifies as a renewable fuel for which renewable fuel credits may be available.

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 waste customers are oil and natural gas exploration and production companies operating in the areas that we serve. E&P waste 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 waste 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 non-hazardous 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 publicly-held solid waste companies—Waste Management, Inc., Republic Services, Inc. and GFL Environmental, 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., Nuverra Environmental Solutions, Trinity Environmental Services, LLC, Ecoserv, Oilfield Water Logistics

LLC and others. In addition, customers in many markets have the option of using internal disposal methods or outsourcing to another third-party disposal company.

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 discharged or emitted into the environment in connection with our operations; impose cleanup 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 ownership or operations; and impose specific standards addressing worker protection and health. Compliance is often costly or difficult to achieve, 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 potentially 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, state environmental agencies, and other federal, state and local authorities having jurisdiction over our U.S. operations.

The environmental legislation affecting 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, liability for violations of environmental and health and safety laws 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 cleanup or remediation liability on responsible parties, which are discussed in more detail below. Substances subject to cleanup 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 or 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 and related rules, 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 statutes, regulations and applicable standards they impose.

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, and in some instances, states have enacted more stringent requirements.

Waste related to oil and gas exploration and production, or E&P, is typically regulated differently than those wastes designated as "hazardous waste." 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. 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 tank 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 cleanup 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 cleanup 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 cleanup costs, notwithstanding its individual contribution. Generally, responsible parties are current owners and/or 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, cleanup 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 cleanup 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. Additionally, the EPA is considering the possible inclusion of certain additional contaminants to CERCLA's list of hazardous substances. Among these substances are per- and polyfluoroalkyl substances, PFAS, and bisphenol A, or BPA. Regarding PFAS, EPA issued a proposal on August 26, 2022 to designate two of the most widely used PFAS—Perfluorooctanoic Acid, or PFOA, and Perfluorooctanesulfonic Acid, or PFOS,—as CERCLA hazardous substances. The inclusion of these substances in CERCLA's definition of hazardous substances may alter or increase cleanup liabilities associated with ongoing cleanup activities, or potentially give rise to additional liability, including for acts or conditions that were in compliance with applicable laws when they occurred.

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 has 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 has 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 categories of responsible persons, including 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 management or control over lands or the source of the contamination. Responsible parties can bear liability under an order without fault. 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 cleanup 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 facilities, 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 WOTUS must have a permit authorizing that discharge. If certain materials such as run-off, collected leachate, or other contaminants from our owned or operated facilities, including landfills, transfer stations, or other facilities, are discharged into streams, rivers or other regulated waters, the Clean Water Act requires a discharge permit. These permits typically contain 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 or treatment, 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 unsettled, and the determination therefore will be based upon the outcome of regulatory promulgations and associated litigation, that 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. Eventually, in October 2019, the 2015 Clean Water Rule was repealed, effectively reverting to the pre-2015 regulatory definition as of December 23, 2019. On April 21, 2020, the EPA published a new Navigable Waters Protection Rule, or NWPR, narrowing the scope of federal jurisdiction over waterways and wetlands. This rule went into effect on June 22, 2020. In 2021, the NWPR was vacated and remanded by two separate federal district courts. In response to these decisions, the EPA halted implementation of the NWPR, stating that it would now be "interpreting [WOTUS] consistent with the pre-2015 regulatory regime until further notice." On December 7, 2021, the EPA and the Corps published a proposed rule restoring definitions used before the 2015 Rule, relying on case-by-case wetland and waterway determinations. Subsequently, on December 30, 2022, the EPA and the Corps announced the final Revised Definition of Waters of the United States rule, which it based largely on the pre-2015 definition, and provided several implementation memoranda. The rule provides categories of waterbody type, implements both the "relatively permanent standard" and the "significant nexus standard" and seeks to account for regional differences in waters through use of the EPA's regionally-tailored implementation tools. Further litigation may be brought regarding this new rule. If the proposed rule is upheld as published, it is likely that the scope of the jurisdiction under the Clean Water Act regarding WOTUS will be expanded. As a result, we could face increased costs and delays in obtaining permits under the Clean Water Act. Further, this regulatory uncertainty may increase costs to our customers. As a result, an expansion of the scope of the WOTUS definition could adversely affect our business.

Additionally, the Clean Water Act's spill prevention, control and countermeasure requirements require development of site-specific plans, and 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 that can prohibit development or require permitting before construction 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, including regulating discharges to state waters in addition to WOTUS.

2. Safe Drinking Water Act, or SDWA

Our United States E&P underground injection operations are subject to, among other laws, 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 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.

The EPA has been reviewing whether management and disposal of E&P wastes should be subject to additional regulation. 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. Moreover, in May 2019, EPA issued its draft Study of Oil and Gas Extraction Wastewater Management Under the Clean Water Act regarding EPA's examination of whether to alter its regulation of the treatment and discharge of E&P wastewater. The final report was released in May 2020. The EPA has yet to determine its next steps for managing E&P wastewater under the Clean Water Act. If regulations requiring reuse or treatment are developed and implemented on a broad scale, it may increase our (or our customers') compliance costs or reduce the volume of E&P wastes that may be disposed of via underground injection, which could have an adverse effect on our business.

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 are discharged or migrate into waters and cause 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, generally a facility deemed to be a major source must be authorized by a permit, known as a federal operating permit. Additional or more stringent regulations of our facilities may occur in the future, which could increase operating costs or impose additional compliance burdens.

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 air emissions permitting of landfill facilities, such permitting may be required for the construction of gas collection and flaring systems, composting and other operations giving rise to emissions. In some instances, major source 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. For example, in certain instances, major sources are subject to emissions limitations known as maximum achievable control technology, or MACT. The EPA has promulgated regulations requiring MACT on large MSW landfills. The MACT standards imposed on landfill emissions often require installation of landfill gas collection systems. The EPA has also issued what are known as new source performance standards, or NSPS, which detail requirements regarding control of landfill gases from new, modified, or reconstructed, among other things, MSW landfills. Regarding facilities that are not subject to the NSPS, the EPA has promulgated emissions guidelines, specifying standards of performance for existing MSW landfills. The emissions guidelines are implemented and enforced by states through State Implementation Plans, or SIPs, which contain the state-specific regulations and guidance directly applying the emissions guidelines to affected sources in the state through permitting, monitoring, and other means. If one or more states do not submit approvable SIPs by the emissions guideline's prescribed deadline, the EPA is required to promulgate what is known as a Federal Implementation Plan, or FIP, for the emissions guideline, which then governs the operation of covered sources in states and territories without SIPs in place.

Applicability of NSPS, emissions guidelines, and implementation plans generally depends on whether the MSW landfill facility is a "new source" or an "existing source." New sources, which are subject to NSPS requirements, generally are those MSW landfill facilities that were constructed, modified or reconstructed after July 17, 2014. Existing sources, which are subject to the emissions guidelines and their associated state and federal implementation plans, are generally those landfills that commenced construction, modification, or reconstruction on or before July 17, 2014.

New sources are subject to NSPS under Title 40, Part 60, Subpart XXX of the Code of Federal Regulations (Subpart XXX), which were issued on August 29, 2016. Subpart XXX specifies standards for landfill gas control. The Subpart XXX NSPS reduces the threshold for non-methane organic compounds at which new, reconstructed or modified MSW landfills must install emission controls. Subpart XXX also requires monitoring surface emissions of methane, monitoring of temperature and pressure at the wellhead of landfill gas collection systems and imposes other requirements.

Existing landfills, which are not subject to NSPS Subpart XXX, are indirectly governed by the emissions guidelines and the SIPs or FIPs implementing these requirements. The EPA promulgated what are known as the Subpart Cf emissions guidelines on August 29, 2016. These emissions guidelines triggered a requirement for states to submit SIPs implementing the emissions guidelines limits. In February 2020, the EPA found that 42 states and territories had failed to submit approvable SIPs by the deadline, which had been extended to 2019. The EPA published its proposed FIP in August 2019, and finalized it in May 2021 with an effective date of June 21, 2021. The FIP imposed compliance requirements consistent with Subpart Cf for existing sources in those states without an EPA-approved SIP. The FIP also replaced compliance obligations under certain legacy regulations. Together, the Subpart XXX and Subpart Cf regulations lower the non-methane organic compounds applicability threshold at which both new and existing MSW landfills must install a gas collection and control system, and impose other regulatory requirements. As a result of this and other regulatory actions affecting air emissions from our facilities, it is possible that we could face greater operational burdens and costs, as well as other requirements could have a material effect on landfill operations, and adversely affect our business.

Additionally, in March 2020, the EPA finalized amendments to the most recent MSW Landfill NSPS and emission guidelines that would allow regulated entities to demonstrate compliance with landfill gas control, operating, monitoring, recordkeeping and reporting requirements by following the corresponding requirements in the MSW Landfills National Emissions Standards for Hazardous Air Pollutant, or NESHAP, regulations at Subpart AAAA. These amendments were intended to improve compliance and implementation of the regulations. Compliance with these regulatory requirements could result in significant additional costs, which we will incur in our ordinary course of business. In addition, state air regulatory agencies may request delegation of authority to implement the FIP and state law 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 that could increase our compliance costs. For example, the EPA has discussed modifying national ambient air quality standards, or NAAQS, applicable to carbon monoxide and oxides of sulfur and nitrogen, as well as other standards, to make them more stringent. The NAAQS standards for particulate matter, published December 18, 2020, retained the NAAQS levels from 2012, and the ozone NAAQS, published December 31, 2020, retained 2015 NAAQS levels. On June 10, 2021, the EPA announced it will reconsider the December 2020 decision. These standards must be reviewed every five years, and the current administration may propose more restrictive standards in the future. It is possible these additional regulations could result in, among other things, additional capital or operating expenditures. 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, increase the operating costs and otherwise impact financial condition and operating results.

Further, the EPA published a proposed rule in November 2021 aimed at reducing GHG emissions from the oil and natural gas sector by limiting methane and VOC emissions from new sources constructed or modified after November 2021, proposing Emission Guidelines for certain existing sources and amending NSPS OOOOa to rescind changes made during the prior administration. As further detailed below, in November 2022, the EPA issued a supplemental proposal seeking to implement more stringent standards than those in the 2021 proposed rule and adding proposed requirements for sources not previously covered. While these changes should not directly affect our waste disposal operations, if finalized as proposed, their applicability to our customers in the E&P industry may result in decreased development and, therefore, decreased waste production. If these rules are enacted as written, we may experience a decreased demand for E&P waste disposal services.

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 or province 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 in the United States 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 the environment, including drinking water supplies. 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's promulgation and subsequent revision of methane and VOC rules between 2016 and 2021 caused regulatory uncertainty for oil and gas exploration and production facilities, including hydraulic fracturing operations. In November 2021, the EPA again proposed rules to regulate methane and VOCs from the oil and gas industry sources. The proposed rules would enact a new NSPS, under Subpart OOOOb, which would include standards for emission sources not regulated previously under the 2016 NSPS OOOOa. Additionally, the proposed rules include the first oil and gas emissions guidelines for existing sources, known as Subpart OOOOc. If finalized, the emissions guidelines will require states to submit and implement SIPs to enforce the guidelines on existing oil and gas emissions sources. These emissions guidelines will include fugitive leak detection surveys for smaller well site sources and regular leak detection surveys using optical gas imaging for larger sources well site sources, compressor stations and pneumatic controllers. If leaks are detected at covered sources, equipment repair or replacement would be required within a certain time period. In November 2022, the EPA proposed a rule to implement more stringent requirements than those in the 2021 proposed rule and to regulate additional sources not previously regulated. If finalized, the rule would, among other things, increase fugitive emissions monitoring requirements for all sites and would no longer exclude wellhead-only sites; require monitoring at all well sites for the life of the site until plugged; create a Super-Emitter Response Program to quickly identify large leaks for mitigation; increase stringency of equipment regulations; and revise leak detection protocols. If these rules are enacted as proposed, they may require oil and gas operators to expend material sums on compliance, including on equipment repair or replacement. The costs associated with OOOOc compliance 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 or even more stringent than 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 rulemaking that could affect the exploration and production industry sector. 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 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. EPA has yet to implement regulations or guidelines based on this study. 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 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 in the United States 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 from our operations could increase our costs to operate by increasing control technology requirements or changing regulatory obligations. In the United States, the EPA's current and proposed regulation of GHG emissions may adversely impact our operations. Pursuant to the EPA's rulemakings and interpretations, certain air 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, but future regulations may revise these requirements. Additionally, regulations in the Subpart OOO Federal Implementation Plan, the NSPS in Subpart XXX require the reduction of GHG emissions from new or modified landfills, 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, or GGPPA, which established a national carbon-pricing regime starting in 2019 for provinces and territories in Canada where there is no provincial regime in place or where the provincial regime does not meet the federal benchmark. Often referred to as the federal backstop, the federal carbon-pricing regime consists of a carbon levy that is applied to certain fossil fuels and an output-based pricing system, or OBPS, that is applied to certain industrial facilities with reported emissions of 50,000 tonnes of carbon dioxide equivalent, or CO2e, or more per year. The minimum national price on carbon established by the GGPPA was equivalent to CAD $50 per tonne of CO2e in 2022. An Order Amending Schedule 4 to the Greenhouse Gas Pollution Pricing Act came into force on October 21, 2022, and implements an annual increase of CAD $15 per year to this carbon price for the calendar years 2023 – 2030. The price on carbon under the GGPPA rose to the equivalent of CAD $65 tonne of CO2e in 2023 and will reach CAD $170 per tonne of CO2e by 2030. The Canadian Net-Zero Emissions Accountability Act, which received royal assent on June 29, 2021, establishes Canada's federal framework for national GHG emissions reduction targets to attain net-zero emissions by 2050. While this new Act does not impose direct emission reduction obligations on our operations in Canada, it signifies the Canadian federal government's commitment to achieve GHG emissions reductions.

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, affects 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. As discussed above, recently proposed EPA air emission rules applicable to oil and gas production sources in the United States may require 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 or even more stringent than 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, and International 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.

Changes to international waste importation and exportation laws may affect the price of recyclable scrap commodities. Price fluctuations, in turn, may adversely affect our business. For example, the Chinese government banned the importation of all materials classified by China as solid waste and virtually all recyclables (except for certain metallic recyclables) as of January 1, 2021. Other international restrictions also limit the transportation of waste and recyclable scrap. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, or the Convention, is an international multilateral agreement regulating the export and import of waste, including hazardous waste, for recovery and disposal. The Convention also prohibits the movement of waste between parties to the Convention and non-parties unless the waste is moved pursuant to a separate agreement. Canada is a party to the Convention and has implemented domestic legislation to implement Canada's commitment to the Convention and other similar international commitments. The Convention was amended, effective January 1, 2021, to restrict the movement of non-hazardous plastic scrap in certain circumstances. In 2022, the Convention was amended to list both hazardous and non-hazardous e-waste in the Annexes of the Convention. The amendments will become effective January 1, 2025. Federal waste regulations in Canada impose restrictions and permitting requirements with respect to transboundary movements of certain hazardous wastes and recyclable materials. The United States is not a party to the Convention; however, Canada and the United States have a separate agreement with respect to the transboundary movements of hazardous wastes. Increased restriction of transboundary waste shipment could create additional burdens associated with recyclable commodity fluctuation. These restrictions, in addition to circumstances caused by the COVID-19 pandemic, have caused and may continue to cause supply chain disruptions in the recycling industry. Further legal restrictions to recyclable scrap shipments may increase the cost of doing business and/or cause disruptions in our operations.

6. Regulation of Per- and Polyfluoroalkyl Substances, or PFAS, and Other Emerging Contaminants

At this time, several substances are being reviewed by governmental authorities for potential heightened regulation, including PFAS. PFAS, a class of man-made chemicals, have been in use since the 1940s and are found in many consumer products including textiles, fire suppressants, cookware, packaging and plastics. These types of products and materials can be found in wastes that our facilities accept and have accepted for management and disposal. PFAS are environmentally persistent and tend to bioaccumulate in exposed populations. PFAS contamination has been found in the air, soil and water, including drinking water. This contamination has prompted action by Congress, EPA and several states.

EPA has begun to examine the potential regulation of PFAS materials under the SWDA, RCRA, CERCLA and TSCA. EPA established lifetime health advisories for PFAS materials in May 2016. The PFAS Act of 2019, as part of the National Defense Authorization Act for Fiscal Year 2020, directed the EPA Administrator to take certain actions with regard to PFAS; it also immediately added certain PFAS to the list of chemicals covered by the TRI under EPCRA Section 313 and provided a framework for additional PFAS to be added to TRI on an annual basis. Under the 2019 PFAS Act, EPA was further directed to include PFAS substances in the SDWA monitoring program for unregulated contaminants and to promulgate a rule requiring PFAS data submission under TSCA. Since that time, EPA has taken a significant number of steps regarding PFAS.

In addition to the PFAS Act of 2019, EPA has undertaken actions that indicate further PFAS regulation is likely forthcoming. For example, on October 18, 2021, EPA announced its PFAS Strategic Roadmap wherein it laid out a whole-of-agency approach to addressing PFAS. The roadmap sets timelines by which EPA planned to take specific actions and commits to more stringent PFAS policies. EPA released its one-year PFAS Roadmap Progress Report in November 2022, and simultaneously announced plans to hold virtual community engagement events in 2023.

Additionally, in an October 26, 2021 letter to the Governor of New Mexico, the EPA Administrator announced the EPA would initiate a proposed rulemaking to list four PFAS chemicals as "hazardous constituents" under RCRA. The Administrator also stated that EPA would amend its regulations to clarify that "emerging contaminants such as PFAS" can be addressed through the RCRA Corrective Action Program, which gives the EPA authority to require investigation and cleanup for hazardous wastes.

On August 26, 2022, EPA issued a proposal to designate as CERCLA hazardous substances two of the most widely used PFAS—Perfluorooctanoic Acid, or PFOA, and Perfluorooctanesulfonic Acid, or PFOS. Listing PFAS as a CERCLA hazardous substance would potentially expand the universe of substances giving rise to cleanup liability. EPA has published Action Plans to potentially address the risk of PFAS contamination.

In April 2022, EPA issued a memorandum to seek to minimize PFAS pollution in surface water as EPA works to set effluent guidelines, develop analytical methods and issue water quality criteria for PFAS. Subsequently, in December 2022, EPA issued a follow-up memorandum recommending states and municipalities use the most current sampling and analysis methods in their NPDES programs to identify known or suspected sources of PFAS and to take actions using their pretreatment and permitting authorities, such as imposing technology-based limits on sources of PFAS discharges.

State governments are also beginning to regulate PFAS. Certain states have taken action to limit exposure to PFAS and require remediation of PFAS-related environmental contamination. Much of the state action has been directed at drinking water limits, but in some instances, bills and policies have included PFAS prohibitions in food packaging, consumer products, and firefighting products.

The EPA is also considering regulation of other contaminants of concern, including bisphenol A, or BPA, and phthalates, which are common in PVC products. If the EPA moves forward with regulating these or other contaminants of concern, we may face higher compliance costs for, among other things, treatment of leachate and landfill gas.

PFAS are the subject of environmental and health reviews by the federal government in Canada. PFAS, including PFOS, PFOA and certain long chain perfluorocarboxylic acids, or LC-PFCA, are listed as toxic substances on Schedule 1 of the Canadian Environmental Protection Act, 1999 and are subject to restrictions on their use in Canada. Environmental screening values and standards, and drinking water guidelines, exist in some jurisdictions in Canada in relation to some PFAS substances. Additionally, the Canadian federal government published on April 24, 2021 a notice of its intent to move forward with additional actions to address the broader class of PFAS, including research and monitoring of PFAS, reviewing PFAS as a class of chemicals and reviewing policy developments in other jurisdictions. Given the increasing concern regarding PFAS in the environment, including PFAS in groundwater and in leachate at waste disposal sites, increased regulatory requirements may be imposed in Canada in the future.

Increased regulation of PFAS and other emerging contaminants could adversely affect our operations. Our already-substantial financial obligations associated with post-closure maintenance at our existing landfills may increase and accruals for these obligations may also need to be increased. Guidance calling for enhanced treatment of landfill leachate and landfill gas could potentially increase burdens for disposal of PFAS-containing materials generated by our facilities or accepted at our facilities, some of which may potentially need to be upgraded to accept PFAS-containing waste. Finally, regulation of PFAS as an air contaminant and/or waste water effluent pollutant could increase the cost to conduct our business, including, without limitation, potentially requiring greater capital expenditures to meet control requirements as well as operation and maintenance costs.

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 and Canada 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, including the required volumes promulgated by the EPA. The EPA annually establishes the renewable fuel volumes required under the RFS for the following year. The 2020 renewable fuel and 2021 biomass-based diesel volume requirements were published on February 6, 2020, increasing required volumes from 2019 requirements. The regulation was judicially challenged in the D.C. Circuit, but the challenge was held in abeyance and remains unresolved. On December 7, 2021, EPA proposed a series of actions setting biofuel volumes for 2020, 2021 and 2022, and introducing other regulatory changes. EPA also proposed to add a 250-million-gallon "supplemental obligation" to the volumes proposed for 2022 and stated its intent to add another 250 million gallons in 2023 to address the outcome of prior litigation. Subsequently, on June 3, 2022, the EPA finalized a set of actions establishing 2020, 2021 and 2022 renewable fuel volume blending obligations for the refining industry under the RFS Program. Multiple EPA actions were announced simultaneously to address several outstanding, delayed and challenged EPA decisions regarding the RFS program, including denying and restoring blending volume obligations waived through small refinery exemptions. EPA also announced $700 million in CARES Act funding through the Biofuel Producer Program paid as compensation to eligible biofuels producers for COVID-19 related market losses. On December 1, 2022, EPA announced a proposed rule to establish 2023, 2024 and 2025 RFS volumes and percentage standards. The proposed rule additionally includes regulatory changes that prescribe how RINs from renewable electricity, or eRINs, would be implemented and managed under the RFS program, which would allow parties to register with EPA and generate eRINs produced from qualifying renewable biomass used as transportation fuel.

These volume proposals may be met with opposition, consistent with action taken regarding prior regulations. If successful, efforts to cause 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. As recently as October 2019, House Energy and Commerce Committee members, Representatives Shimkus and Flores, introduced the 21st Century Transportation Fuels Act that aims to eliminate volume-based renewable fuels mandates and instead rely upon the transition to a national octane standard and automobile manufacturing standards to govern fuel composition. This bill was referred to the Subcommittee on Environment and Climate Change in October 2019, but no further action has been taken. Various parties have also sought for the executive branch to revise 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. Further, uncertainty associated with RFS regulatory requirements may increase volatility of RIN prices, which may adversely affect our business.

The Clean Fuel Regulations, or CFRs, under the Canadian Environmental Protection Act, 1999 were registered and came into force on June 21, 2022 (with the exception of two sections that will come into force on September 30, 2024) The CFRs will replace the Renewable Fuel Regulations, or RFRs, which were established in August 2010 and require primary suppliers to have an average renewable content of at least 5% for gasoline that they produce in Canada and/or import, and 2% for diesel fuel and heating distillate oil. The CFRs maintain these volumetric requirements in addition to the obligations discussed below.

Unlike the RFRs, the CFRs require greenhouse gas, or GHG, reductions on a lifecycle basis, accounting for emissions from the extraction, processing, distribution and end use of the fuel. The CFRs establish lifecycle carbon intensity, or CI, limits for each fuel type (gasoline and diesel), expressed in grams of carbon dioxide equivalent per megajoule (gCO2e/MJ). Gasoline and diesel producers and importers must lower the CI of the gasoline and diesel that they produce in Canada and/or import in accordance with these limits. Rather than requiring each primary supplier to calculate the current CI of their unique gasoline and diesel pools, the CFRs establish a baseline CI for each fuel. Primary suppliers must lower the CI of their gasoline and diesel pools by an amount equal to the difference between the baseline CI for that fuel and the CI limit for the corresponding compliance period.

The CFRs require gasoline and diesel producers and importers in 2023 to reduce the CI of the gasoline and diesel they produce in, and import into, Canada from 2016 CI levels by 3.5 gCO2e/MJ. The reductions will iteratively become more stringent over the years, increasing to a 14 gCO2e/MJ reduction below 2016 levels by 2030. Compliance requirements under the CFR will come into effect on July 1, 2023, with the first compliance review in December 2023.

The CFRs establish a credit market, and each compliance credit is equivalent to a one-tonne reduction of life cycle CO2e emissions for the applicable compliance period. During each compliance period, primary suppliers must use the number of credits necessary to meet their reduction requirement. Compliance credits can either be created by primary suppliers or transferred to them by other "registered creators." Compliance credits are the only mechanism for primary suppliers to achieve compliance with their reduction requirement. There are three main categories of credit-creating action: undertaking projects that reduce the lifecycle CI of liquid fossil fuels; supplying low carbon fuels and supplying fuel or energy to advanced vehicle technology. Primary suppliers may also create a compliance credit if they make a contribution to a registered funding program to satisfy 10% of their total reduction requirement for that compliance period for all types of fuels. Several Canadian provinces have also promulgated legislation and regulations to implement low carbon fuel policies. At this time, we do not know how the new CFRs in Canada will impact demand for, or value of, our renewable fuel in Canada.

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. For example, both Maine and Oregon enacted EPR legislation in 2021. Colorado and California enacted similar rules in 2022. These statutes require brands to provide funding to improve recycling infrastructure statewide. 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. Right to Repair

President Joe Biden issued Executive Order 14036 on July 9, 2021**,** directing the Federal Trade Commission, or FTC, in the United States to draft regulations that limit the ability of original equipment manufacturers, or OEMs, to restrict independent repairs of their products. This order aims to reduce the amount of waste produced by electronics and other goods by reducing the cost to repair or refurbish damaged items rather than discarding them. On July 21, 2021, the Federal Trade Commission, or FTC, voted unanimously to increase enforcement against practices that limit consumer repair choices, and brought its first right-to-repair cases in 2022. On December 29, 2022, New York Governor Kathy Hochul signed the Digital Fair Repair Act into law, the first major "right-to-repair" state legislation.

Similar regulatory initiatives have been proposed in Canada at the federal level and in some provinces. If such rules are issued or new regulatory requirements come into force, demand for electronic waste disposal could be reduced, potentially representing a reduction in demand for our services.

J. 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.

K. Inflation Reduction Act

The Inflation Reduction Act, or IRA, of 2022 put in place broad-reaching tax, loan, incentive and other programs. The IRA's provisions include, but are not limited to: a lower eligibility threshold and higher dollar value for the updated 45Q tax credit for carbon capture and sequestration; new and expanded tax credits for certain renewable energy projects as well as tax credits for certain biogas projects for which construction is initiated by December 31, 2024; commercial electric vehicle credits; a charge on methane emissions from selected entities in the oil and gas industry; and reinstatement of the hazardous substance Superfund financing rate, among others. It is possible that as implemented, the IRC could increase the costs of operation for certain of our customers, including in the oil and gas industry. In the event that the IRA as implemented increases operational costs for our customers or reduces oil and gas E&P activities by our customers, it could, therefore, adversely affect our business. At this time, however, it is unclear how these credits, fees, and programs will impact our business or the businesses of our customers.

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 risk management programs are designed, we believe, to ensure that our facilities are in material compliance 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 $250,000 to $2 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.

Under our current insurance program for our U.S. operations, we carry per incident deductibles or self-insured retentions ranging from $350,000 to $15 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, transfer stations and other facilities, subject to the policy terms and conditions. From time to time, actions filed against us include claims for punitive damages, which are generally excluded from coverage under our liability insurance policies. 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 $350,000 to $5 million for automobile liability claims, property claims, employment practices liability 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, 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, 2022 and 2021, we had provided customers and various regulatory authorities with surety bonds in the aggregate amount of approximately $811.2 million and $744.0 million, respectively, to secure our asset closure and retirement requirements and $636.2 million and $556.6 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.

SEASONALITY

Based on historic trends, excluding any impact from the COVID-19 pandemic or an economic recession, we would 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 10%. 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.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following table sets forth certain information concerning our executive officers as of February 3, 2023:

Name	Age	Positions
Ronald J. Mittelstaedt	59	Executive Chairman
Worthing F. Jackman	58	President and Chief Executive Officer
Darrell W. Chambliss	58	Executive Vice President and Chief Operating Officer
James M. Little	61	Executive Vice President – Engineering and Disposal
Patrick J. Shea	52	Executive Vice President, General Counsel and Secretary
Mary Anne Whitney	59	Executive Vice President and Chief Financial Officer
Matthew S. Black [(a)]	50	Senior Vice President and Chief Tax Officer
Robert M. Cloninger	50	Senior Vice President, Deputy General Counsel and Assistant Secretary
Jason J. Craft	47	Senior Vice President – Operations
David G. Eddie [(a)]	53	Senior Vice President and Chief Accounting Officer
Eric O. Hansen	57	Senior Vice President – Chief Information Officer
Susan R. Netherton	53	Senior Vice President – People, Training and Development
Andrea R. Click	46	Vice President – Tax
Keith P. Gordon	59	Vice President – Information Systems
Michelle L. Little	49	Vice President – Engagement Solutions
Shawn W. Mandel	56	Vice President – Safety and Risk Management
John M. Perkey	41	Vice President, Deputy General Counsel – Compliance and Government Affairs
Jason W. Pratt	43	Vice President – Corporate Controller
Kurt R. Shaner	57	Vice President – Engineering and Sustainability
Gregory Thibodeaux	56	Vice President – Maintenance and Fleet Management
Colin G. Wittke	60	Vice President – Sales

(a) On December 1, 2022, the Company named Matthew S. Black as the Company's Senior Vice President – Chief Accounting Officer, effective February 20, 2023. Mr. Black will assume the role from David G. Eddie, who will transition on that same date to a new role of Senior Vice President – Performance Optimization.

Ronald J. Mittelstaedt has been Executive Chairman of the Company since July 2019. From its formation in 1997 to that date, Mr. Mittelstaedt served as Chief Executive Officer of the Company. Mr. Mittelstaedt has served as a director of the Company since its formation, was elected Chairman in January 1998 and serves on the Executive Committee. He also served as President of the Company from its formation through August 2004. Mr. Mittelstaedt has more than 30 years of experience in the solid waste industry. He 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 and Chief Executive Officer of the Company since July 2019. He has also served as a director of the Company since that date. From July 2018 to July 2019, Mr. Jackman served as President of the Company. From September 2004 to July 2018, Mr. Jackman served as Executive Vice President and Chief Financial Officer of the Company. From April 2003 to September 2004, he served as Vice President – Finance and Investor Relations of the Company. 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 the Company since October 2003. From October 1, 1997 to that date, Mr. Chambliss served as Executive Vice President – Operations of the Company. Mr. Chambliss has more than 30 years of experience in the solid waste industry. Mr. Chambliss holds a B.S. degree in Business Administration from the University of Arkansas.

James M. Little has been Executive Vice President – Engineering and Disposal of the Company since July 2019. From February 2009 to that date, Mr. Little served as Senior Vice President – Engineering and Disposal of the Company. From September 1999 to February 2009, Mr. Little served as Vice President – Engineering of the Company. 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 Executive Vice President, General Counsel and Secretary of the Company since July 2019. From August 2014 to that date, Mr. Shea served as Senior Vice President, General Counsel and Secretary of the Company. From February 2009 to August 2014, Mr. Shea served as Vice President, General Counsel and Secretary of the Company. He served as General Counsel and Secretary of the Company from February 2008 to February 2009 and Corporate Counsel of the Company 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 Executive Vice President and Chief Financial Officer of the Company since February 2021. From July 2018 to that date, Ms. Whitney served as Senior Vice President and Chief Financial Officer of the Company. From February 2018 to July 2018, Ms. Whitney served as Senior Vice President - Finance of the Company. From March 2012 to February 2018, Ms. Whitney served as Vice President - Finance of the Company. From November 2006 to March 2012, Ms. Whitney served as Director of Finance of the Company. 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.

Matthew S. Black has been Senior Vice President and Chief Tax Officer of the Company since January 2017. From March 2012 to that date, Mr. Black served as Vice President and Chief Tax Officer of the Company. From December 2006 to March 2012, Mr. Black served as Executive Director of Taxes of the Company. 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.

Robert M. Cloninger has been Senior Vice President, Deputy General Counsel and Assistant Secretary of the Company since February 2022. From August 2014 to that date, Mr. Cloninger served as Vice President, Deputy General Counsel and Assistant Secretary of the Company. From February 2013 to August 2014, Mr. Cloninger served as Deputy General Counsel of the Company. He served as Corporate Counsel of the Company 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.

Jason J. Craft has been Senior Vice President – Operations of the Company since July 2020. From December 2014 to that date, Mr. Craft served as a Regional Vice President of the Company. From February 2010 to December 2014, Mr. Craft served as a Divisional Vice President of the Company. From July 2006 to February 2010, Mr. Craft served as a District Manager of the Company, and from November 2003 to July 2006 he served as a member of the Company's Operations Analysis and Integrations department. From April 2003 until November 2003, Mr. Craft served as a member of the Company's Internal Audit department. Mr. Craft held various accounting positions with The Newark Group Inc. from June 2000 to April 2003. Mr. Craft spent seven years in the military, both in the U.S. Navy and the Army National Guard. Mr. Craft holds a B.S. degree in Accounting from Montana State University.

David G. Eddie has been Senior Vice President and Chief Accounting Officer of the Company since January 2011. From February 2010 to that date, Mr. Eddie served as Vice President – Chief Accounting Officer of the Company. From March 2004 to February 2010, Mr. Eddie served as Vice President – Corporate Controller of the Company. From

April 2003 to February 2004, Mr. Eddie served as Vice President – Public Reporting and Compliance of the Company. From May 2001 to March 2003, Mr. Eddie served as Director of Finance of the Company. 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 the Company's Manager of Financial Reporting. From September 1994 to September 1999, Mr. Eddie held various positions, including Audit Manager, for PricewaterhouseCoopers LLP. Mr. Eddie holds a B.S. degree in Accounting from California State University, Sacramento.

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

Susan R. Netherton has been Senior Vice President – People, Training and Development of the Company since February 2022. From July 2013 to that date, Ms. Netherton served as Vice President – People, Training and Development of the Company. From February 2007 to July 2013, Ms. Netherton served as Director of Human Resources and Employment Manager of the Company. 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.

Andrea R. Click has been Vice President – Tax of the Company since February 2023. From February 2017 to that date, Ms. Click served as Executive Director of Tax of the Company. From February 2015 to January 2017, Ms. Click served as Tax Director of the Company. From February 2009 to February 2015, Ms. Click served as Tax Manager of the Company. From January 2007 to January 2009, Ms. Click served as Tax Analyst of the Company. Ms. Click served as Tax Analyst for The McClatchy Company from October 2004 to December 2006. Ms. Click is a Certified Public Accountant and holds a B.S. degree in Business Administration with a concentration in Accounting from California State University, Stanislaus.

Keith P. Gordon has been Vice President – Information Systems of the Company since January 2017. From September 2010 to that date, Mr. Gordon served as Director of Information Systems of the Company. Prior to joining the Company, 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 – Engagement Solutions of the Company since February 2023. From August 2019 to that date, Ms. Little served as Executive Director – Engagement Solutions/HRIS of the Company. From January 2017 to August 2019, Ms. Little served as Vice President – Accounting of the Company. From December 2007 to January 2017, Ms. Little served as Director of Accounting of the Company. 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 the Company since January 2017. From May 2011 to that date, Mr. Mandel served as Director of Safety of the Company. 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.

John M. Perkey has been Vice President, Deputy General Counsel – Compliance and Government Affairs of the Company since February 2022. From August 2017 to that date, Mr. Perkey served as Associate General Counsel – Director of Compliance of the Company. He served as Operations Counsel of the Company from June 2011 to July 2017. Mr. Perkey practiced corporate, real estate, and mergers and acquisitions law with Roetzel & Andress, LPA in Columbus, Ohio

from 2006 - 2011. Mr. Perkey holds a B.A. degree in Political Science from Ohio Wesleyan University and a J.D. degree from the University of Pittsburgh.

Jason W. Pratt has been Vice President – Corporate Controller of the Company since February 2020. From June 2016 to that date, Mr. Pratt served as Region Controller - Canada of the Company. From October 2012 to May 2016, Mr. Pratt served as Region Controller – Western Region of the Company. From January 2007 to September 2012, Mr. Pratt served as Division Controller – Mountain West Division and Division Controller – Northern Washington Division of the Company. From July 2005 to December 2006, Mr. Pratt held various Assistant Controller and District Controller positions with the Company. From August 2003 to June 2005, Mr. Pratt served as Tax Accountant for LeMaster and Daniels, PLLC. Mr. Pratt holds a B.S. degree in Business Administration with a concentration in Accounting and an M.B.A with a concentration in Finance from the University of Portland in Oregon.

Kurt R. Shaner has been Vice President – Engineering and Sustainability of the Company since November 2020. From April 2002 to that date, Mr. Shaner served as the Eastern Region Engineering Manager of the Company. Mr. Shaner held various positions at Waste Management, Inc. and its predecessor companies from June 1990 through March 2002. From February 1988 through June 1990, Mr. Shaner worked as a consulting engineer focused on landfill design and permitting. Mr. Shaner is a professional engineer and received a B.S. degree in Civil Engineering from the University of Miami.

Gregory Thibodeaux has been Vice President – Maintenance and Fleet Management of the Company since January 2011. From January 2000 to that date, Mr. Thibodeaux served as Director of Maintenance of the Company. Mr. Thibodeaux has more than 35 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 the Company, Mr. Thibodeaux served as corporate Director of Maintenance for Texas Disposal Systems.

Colin G. Wittke has been Vice President – Sales and Customer Engagement since April 2022. From June 2016 to that date, Mr. Wittke was Vice President – Sales of the Company. From June 2011 to May 2016, 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.

AVAILABLE INFORMATION

Our corporate website address is 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 www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The references in this Annual Report on Form 10-K to our website address or any third party's website address, including but not limited to the SEC's website and any websites 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 unless otherwise expressly stated.

ITEM 1A. RISK FACTORS

This Annual Report on Form 10-K and the documents incorporated herein by reference contain forward-looking statements based on expectations, estimates, and projections as of the date of this filing. Actual results may differ materially from those expressed in forward-looking statements. See Item 7 of Part II – "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Risk Factors Related to Our Company and Industry

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 our competitors may be able to provide or be willing to bid their services at lower prices than we may be willing to offer, which could impact our ability to win new business or retain existing business, including municipal contracts that come up for renewal. We also compete with counties, provinces, municipalities and solid waste districts that maintain or could develop their own waste collection and disposal operations. These operators may have financial advantages over us because of their access to user fees and similar charges, tax revenues and tax-exempt financing. 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. In addition, existing and future competitors may develop or offer new services or technologies, new facilities or other advantages. Our inability to compete effectively could hinder our growth or negatively impact our operating results.

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. Continuing outsized inflationary pressures may outpace price increases or drive the need for additional price increases; and, contractual, general economic, competitive or market-specific conditions sometimes limit our ability to raise prices or otherwise impact our plans with respect to implementing price increases. 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.

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 factors impacting the environment for attractive investments, including inflationary pressures and higher interest rates, 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 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.

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 362 contracts, representing approximately 3.0% of our annual revenues, which are set for expiration or automatic renewal on or before December 31, 2023. 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, have and others 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. 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. Municipalities sometimes also promulgate “flow control” laws and regulations requiring 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.

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

We currently own and/or operate 100 landfills throughout the United States and Canada. Our ability to meet our financial and operating objectives depends in part on our ability to acquire, lease, or renew landfill operating permits, expand existing landfills and develop new landfill sites. 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. In addition, approvals may include operating restrictions or additional requirements, which could impact financial results. Although generally less time consuming, 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, requiring numerous hearings and compliance with zoning, environmental and other requirements.

States and municipalities are also increasingly adopting requirements for environmental justice reviews as part of certain permitting decisions. These policies generally require permitting agencies to give heightened attention to the potential for projects to disproportionately impact low-income and minority communities. The permitting and approval process is frequently challenged by special interest and other groups, including those utilizing social media to further their objectives, 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. For

example, see the discussions regarding the Los Angeles County, California Landfill Expansion Litigation—A. Chiquita Canyon, LLC Lawsuit Against Los Angeles County in Note 13, "Commitments and Contingencies," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K. 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.

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. A shortage of qualified employees in our markets, including due to impacts dating back to the COVID-19 pandemic, 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. As a result of the COVID-19 pandemic and subsequent labor constraints, we have experienced increased competition with other businesses in our markets for qualified employees, which has driven higher turnover and increased the time it takes to fill job openings. Moreover, through January 2022 we continued to provide supplemental pay for our frontline workforce in response to labor constraints associated with the COVID-19 pandemic.

Increases in capital expenditures and the timing of receipt of fleet and equipment could impact our financial results.

Increases in fleet, equipment and landfill construction costs due to cost pressures, acquisitions and new contracts could result in capital expenditures being higher than anticipated. In addition, supply chain disruptions and inflationary pressures, including those related to the COVID-19 pandemic, have and are expected to continue to result in higher costs, delays or lack of availability of fleet, equipment or supplies. This could impact our ability to generate free cash flow in line with our expectations, the timing of our free cash flow generation, or otherwise adversely affect our financial results.

The level of exploration, development and production activity of E&P companies will impact the demand for our E&P waste services.

The value of crude oil has impacted and may in the future impact the level of drilling activity in the basins where we operate; however, 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. The level of investment and the amount of linear feet drilled in the basins where we operate 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. Energy transition, or a transformation of the global energy sector from fossil-based systems of energy production and consumption to renewable energy sources, could also affect investments by E&P companies in the basins where we operate. See the section Impairments of Property and Equipment and Finite-Lived Intangible Assets in Note 3, "Summary of Significant Accounting Policies," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K regarding the impairment charges recorded during the years ended December 31, 2021 and 2020 on property and equipment in our E&P waste operations.

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

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 or the value of recycled commodities, market position, competition, customer base, loss of key employees, third-party legal challenges or governmental actions. In addition, acquisitions 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. As a successor owner, we may be legally responsible for those liabilities that arise from businesses that we acquire, whether we expressly assume them or not, including as a result of sellers not having sufficient funds to perform their obligations or liabilities being 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, provincial and local regulations 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.

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

Based on historic trends, excluding any impact from the COVID-19 pandemic or an economic recession, we would 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 10%. 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 recyclables we process for sale include paper products and plastics that are shipped primarily to customers in the United States, as well as other markets, including Asia. The sale prices of and the demand for recyclable commodities are frequently volatile and when they decline, our revenues, operating results and cash flows will be affected. The value of recyclables may be impacted by factors including: changes to international waste importation and exportation laws; quality concerns; the volatility of crude oil prices, which impacts plastic; and the demand for paper products, which impacts fiber, along with the extent to which manufacturers rely on recycled feedstock. During 2022, the value of recycled commodities decreased as a result of lower demand for fiber and other commodities associated with expectations of an economic slowdown. The pace of any recovery and the degree to which demand increases may impact the timing and extent of any recovery of recycled commodity values.

Singlestream recycling facilities process a wide range of commingled materials and tend to receive a higher percentage of non-recyclables, particularly in residential collection, which results in increased processing and residual disposal costs to achieve quality standards. 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 recycling facilities, 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. To the extent that there is an economic slowdown, a resulting decline in demand for recycled commodities has and could in the future impact our revenues, operating results and cash flow.

Our results will be affected by changes in the value of renewable fuels and quantities of gas generated and beneficially reused.

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 in the United States and Canada 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 addition, demand for RINs can be impacted by the ability of refineries to obtain small refinery exemptions, or SREs, through the EPA. Any reductions or limitations on the requirement to blend renewable fuel and any related waivers including SREs, would likely reduce the demand for RINs, which could impact the value of RINs. Pursuant to the Canadian Environmental Protection Act, 1999, the Canadian federal government has promulgated the Clean Fuel Regulations (CFRs), which will replace the Renewable Fuel Regulations. Under the CFRs, gasoline and diesel producers and importers (primary suppliers) must lower the carbon intensity of the gasoline and diesel that they produce in Canada and/or import in accordance with prescribed limits through the use of compliance credits. Compliance credits can be created by primary suppliers or acquired from other registered creators of credits in accordance with the credit-creating mechanisms set out in the CFRs. At this time, we do not know how the new CFRs in Canada will impact the demand for, or value of, our renewable fuel in the future.

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. To manage a portion of this risk, we may enter into contractual agreements to sell RINs at a fixed price. As of December 31, 2022, we had no contractual fixed price agreements in place.

Variations in the volume of methane gas generated, marketed and sold by our landfill gas recovery operations also affect our results. Our operations and gas generation rates are impacted by many variables, including the maintenance and operations of recovery wells and gas generation systems, the amount and type of waste in our landfills, the age of the landfill, weather and related temperature. In addition, there may be variability in the extent to which we are able to beneficially market and sell for beneficial reuse the gas generated and captured, including as a result of delays in the start-up of new facilities or other impacts to operations.

Climate change, including adverse weather and the adoption of climate change legislation or regulations restricting emissions of greenhouse gases, could adversely affect our operations and increase operating costs.

Our operations and assets are subject to risks associated with the effects of climate change and adverse weather conditions. Risks associated with climate change, such as increased frequency and/or intensity of weather events, flooding, wildfires, sea level rise, and other weather- and climate-related events, could negatively impact our operations. For example, these events could disrupt or result in suspension of collection activities, disrupt landfill and transfer station operations, or hinder landfill development or expansion. It is also possible that these events could disrupt our customers' businesses, thereby reducing the amount of waste generated by their operations.

Additional laws and regulations related to climate change, including restricting emissions of greenhouse gases, could also be promulgated, which could result in increased operational costs or disruption to our clients' business, thereby impacting our operational results and financial condition. Conversely, favorable investor expectations regarding potential investment tax credits or other benefits stemming from the Inflation Reduction Act of 2022 may not materialize or could fail to meet expectations.

Increases in insurance costs and the amount that we self-insure for various risks or limitations of our insurance coverage 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 on a covered claim, 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, as well as higher deductibles or self-insured retentions, could reduce our margins.

Increases in the price of diesel or compressed natural gas, or CNG, 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, which have fluctuated significantly in recent years, including as a result of geopolitical events or inflationary pressures, as experienced recently. This 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 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 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 as well as for landfills we operate under 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. The potential increased regulation of per- and polyfluoroalkyl substances ("PFAS"), bisphenol A ("BPA") phthalates, methane and other emerging contaminants could result in greater expenditures for closure and post-closure costs. It is also possible that accruals may need to be expanded and that costs incurred related to these activities could be accelerated. Paying additional amounts for closure or post-closure costs and/or for environmental remediation and/or for litigation could harm our financial condition, operating results, or cash flow.

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 accounting guidance. 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 additional impairment charge in the future, which could have a significant adverse impact on our reported results. See the sections Goodwill and Indefinite-Lived Intangible Assets and Impairments of Property and Equipment and Finite-Lived Intangible Assets in Note 3, "Summary of Significant Accounting Policies," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K regarding the impairment charges recorded during the years ended December 31, 2021 and 2020 on indefinite-lived intangible assets, definite-lived intangible assets and property and equipment in our E&P waste operations.

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

As of December 31, 2022, we had approximately $6.963 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 to the extent that a 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.

A portion of our indebtedness is at variable rates which are based on the Canadian Dollar Offered Rate, or CDOR, which will cease publication by June 28, 2024. The Canadian Alternative Reference Rate working group, or CARR, supports the transition to Canadian Overnight Repo Rate Average, or CORRA, rate. We are developing a plan to transition our indebtedness from CDOR to CORRA. In addition, $891.0 million of our indebtedness, including interest rate swaps, is at variable rates which are based on the Secured Overnight Financing Rate, or SOFR, as a result of the transition from the London Interbank Offered Rate, or LIBOR. Although SOFR has been endorsed by the Alternative Reference Rate Committee as its preferred replacement for LIBOR, it remains uncertain whether or when SOFR or other alternative reference rates will be widely accepted by lenders as the replacement for LIBOR. This may, in turn, impact the liquidity of the SOFR loan market, and SOFR itself, with the risk of increased volatility, which could result in higher borrowing costs for us. Further, as the use of SOFR-based rates is relatively new, there could be unanticipated difficulties, disruptions or methodological or other changes with the calculation and publication of SOFR based rates, which in turn could trigger another benchmark transition or otherwise cause a reliance on an alternate base rate. This could also result in increased borrowing costs for us and thereby adversely affect our financial condition and earnings.

Our ability to execute our financial strategy and our ability to incur indebtedness is somewhat dependent upon our ability to maintain investment grade credit ratings on our senior debt. The credit rating process is contingent upon our credit profile and several other factors, many of which are beyond our control, including methodologies established and

interpreted by third-party rating agencies. If we were unable to maintain our investment grade credit ratings in the future, our interest expense would increase and our ability to obtain financing on favorable terms could be adversely affected.

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 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, 2022, we had $1.447 billion of such surety bonds in place and $127.1 million of letters of credit issued and outstanding. 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.

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 MSW 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 laws, 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 17 "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 have established long-term, aspirational targets associated with ESG and sustainability-related investments and projects which may or may not be achieved.

Stakeholder input, business considerations, and potential regulation have reinforced the importance of developing and implementing environmental, social, and governance, or ESG, and sustainability initiatives. In 2020, we adopted long-term, aspirational sustainability targets, which we expanded in 2022; we also committed over $500 million for investments and projects to support these efforts. Our ability to achieve these targets will depend significantly on, among other things, the success of these investments and projects and our ability to meet our financial and operating objectives, which can be impacted by the numerous risks and uncertainties associated with our business and the industry in which we operate. There is a risk that some or all of the expected benefits of these investments and projects may fail to materialize, may cost more to achieve or may not occur within the anticipated time periods, including as a result of limitations on technology or supply chain disruptions. In addition, there is a risk that the actions taken by us to achieve these targets may have a negative impact on our existing business and increase capital expenditures, which could adversely affect our operating results. Our failure to achieve these targets, or a perception among key stakeholders that such targets are insufficient or unattainable, could damage our reputation, competitive position and share price.

There is increasing interest in companies developing and implementing more robust environmental, social, and governance policies and practices and disclosure around climate-related risk identification and mitigation. In addition, certain investors and lenders are incorporating ESG factors into their investment or lending process, alongside traditional financial considerations. Developing and implementing policies and practices, and developing additional disclosure in relation to climate change and other environmental and social risk issues, can involve significant costs and require a significant time commitment from our Board of Directors, management and employees. In addition, our failure to implement such policies, practices and disclosure could adversely affect our reputation, competitive position and share price and our ability to raise capital, even if our operating results or prospects have not changed.

Our Company published its 2022 Sustainability Report, available at www.wasteconnections.com/sustainability, to communicate our efforts to our investors and stakeholders. The 2022 Sustainability Report does not constitute part of, and is not incorporated by reference into, this Annual Report on Form 10-K or any other report we provide to the SEC or other securities regulators.

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 operating a commercial truck fleet and 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 and the use of personal protective equipment, 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.

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. 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.

General Risk Factors

Our results are vulnerable to economic conditions.

Our business and results of operations may be adversely affected by changes in national or global economic conditions, including higher inflation rates and economic slowdowns.

Macroeconomic pressures, such as the outsized inflationary cost pressures experienced in 2022, have had and continue to have a significant impact on our operating costs and capital expenditures. Significant components of our operating expenses, including labor and third-party services relying largely on labor and fuel, have been impacted by increased inflation rates. We may be limited in our ability to dynamically address these impacts on a significant portion of our revenue under long-term contracts due to contractual provisions which may include limitations on the level of cost recovery through rate adjustments or a lag in any such recovery. Efforts to recover cost increases may also be limited by ongoing or increasing inflationary pressures and competitive market responses to higher pricing and continued cost pressures. The inability to adequately increase prices to offset increased costs and inflationary pressures, or otherwise mitigate the impact of these macroeconomic conditions on our business, may impact our financial results.

In an economic slowdown, we may experience the negative effects of the following, any of which could adversely impact our operating income and cash flows: decreased waste generation, increased competitive pricing pressure, increased customer turnover, and reductions in customer service requirements. In a recessionary environment, two of our business lines that could see a more immediate impact are construction and demolition debris and E&P waste disposal, as demand for new construction or energy exploration decreases. Our commercial and industrial collection activity and the related demand for our landfill disposal and other services may also be impacted, depending on the drivers of the economic

slowdown. 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 that any improvement in economic conditions after such a slowdown will result in an immediate, if at all, positive improvement in our operating results or cash flows.

Public health crises and the effects of related governmental initiatives have adversely affected and may continue to adversely affect our business, financial condition and results of operations.

Public health crises, such as the COVID-19 pandemic, may impact our operations or our customers' operations in ways that adversely affect our business, results of operations and financial condition. The COVID-19 pandemic has resulted in adverse impacts to our business. Fear of such events and their duration and spread might also alter consumer confidence, behavior and spending patterns, resulting in an economic slowdown that could continue to affect demand for our services.

The ultimate extent of the impact of the COVID-19 pandemic on our business, results of operations, financial condition and cash flows will depend largely on future developments, including the duration and spread of the outbreak in the U.S. and Canada, its severity, the actions to contain the novel coronavirus or treat its impact, including the distribution, acceptance and effectiveness of vaccines, the severity of COVID-19 variants, and how quickly and to what extent normal economic and operating conditions can resume, all of which are uncertain and cannot be predicted at this time.

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, or GAAP, 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.

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.

Changes in our tax provision or an increase to our tax liabilities, whether due to legislation commonly referred to as the Tax Cut and Jobs Act ("Tax Act") or interpretations of the Tax Act, such as through final regulations and the potential reversal of its provisions by a subsequent federal administration, or a final determination of tax audits or otherwise, 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, or OECD, 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, including in the area of base erosion and

profit shifting, or BEPS, where payments are made between affiliates from a jurisdiction with high tax rates to a jurisdiction with lower tax rates. In 2019, Canada ratified the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting, or the MLI, as part of the OECD/G20 initiative to counter what was perceived as BEPS. The MLI entered into force in Canada on December 1, 2019 and entered into effect with respect to certain of Canada's tax treaties on January 1, 2020 for withholding taxes and with respect to certain other taxes (including capital gains taxes) for tax years beginning on or after June 1, 2020 (which, for us and our affiliates, in general, was January 1, 2021). The MLI may enter into effect at a later date for certain of Canada's tax treaties with countries that have not yet completed their domestic procedures to cause the MLI to come into effect. The MLI does not impact the tax treaty between Canada and the U.S. In addition, in the 2021 Canadian federal budget, the Canadian government indicated it would introduce measures consistent with the OECD's recommendations in the area of hybrid mismatch arrangements and introduced draft hybrid mismatch legislation on April 29, 2022 for public consultation, with those proposals applying, if they are implemented, as of July 1, 2022. A second Canadian legislative package is anticipated to be released, which would comprise the rules consistent with the OECD proposals that were not previously addressed. The international tax environment continues to change as a result of these and related tax policy initiatives and reforms. Although the timing and methods of implementation vary, numerous countries have responded to the BEPS project by implementing, or proposing to implement, changes to tax laws and tax treaties, at a rapid pace. As a result of these 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. As a result of the rapidly changing and increasingly complex tax environment, our cost of tax compliance may increase and adversely affect 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, including those resulting from the impact of the COVID-19 pandemic, would have an adverse effect on our financial performance and reported results of operations.

Technology and Information Security Risks

We are increasingly dependent on technology in our operations and a failure of our technology 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.

A cybersecurity incident could negatively impact our business and our relationships with customers, vendors and employees and expose us to increased liability. 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.

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.

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.

Legal, Regulatory and Compliance Risks

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. Further, under the new federal administration that took office in 2021 in the United States, it is possible that policies and initiatives of the prior administration could be reconsidered or even reversed, which could adversely affect our operating results. For example, a policy shift away from curtailment of regulation, narrowing Clean Water Act jurisdiction, or enabling oil and gas development on federal lands could adversely affect our business and our customers' business. 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 as well as purported class actions based on nuisance and negligence claims related to alleged landfill odors have proliferated, along with the use of social media to drive such efforts. In addition, 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 the movement or disposal within their jurisdictions of certain types of waste generated outside their jurisdictions. 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 implemented 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 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 established a national carbon-pricing regime starting in 2019 for provinces and territories in Canada where there is no provincial regime in place or where the provincial regime does not meet the federal benchmark. The minimum national price on carbon in Canada is equivalent to CAD $65 per tonne CO2e in 2023 and will increase to CAD $170 per tonne of CO2e by 2030. The Canadian Net-Zero Emissions Accountability Act, which received royal assent on June 29, 2021, establishes Canada's federal framework for national GHG emissions reduction targets to attain net-zero emissions by 2050. 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, affects 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. Further, governmental authorities have considered or have begun to implement increased regulation of PFAS and potentially other emerging contaminants, which could adversely affect our operations. The regulation of these substances could increase or accelerate our financial obligations associated with closure obligations, post-closure maintenance and other environmental remediation related to our solid waste facilities. Further, more stringent permitting obligations, including those relating to air and wastewater, as well as enhanced treatment of landfill leachate and landfill gas could adversely affect our operations in various ways, including without limitation, increased operational expenses as well as treatment and disposal costs, greater capital expenditures to meet control requirements, costs of compliance with permitting and health and safety requirements, and litigation risk.

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 current or former operations that could interrupt or limit the scope of our business or result in adverse judgments or settlements requiring substantial payments. For example, see the discussion regarding the Jefferson Parish, Louisiana Landfill Litigation in Note 13, “Commitments and Contingencies,” of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K. 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, purported class actions based on claims related to allegedly unlawful landfill odors and rates and fees charged under certain contracts for collection services have proliferated, as have citizen suits brought pursuant to environmental laws, such as those regulating the treatment of storm water runoff. 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 13, "Commitments and Contingencies," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

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, including an increased regulation of PFAS, 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.

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 the transportation, treatment or disposal of which 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. New or increased regulation of substances, such as PFAS or other emerging contaminants, could also lead to increased or previously unauthorized remediation costs or litigation risk. 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.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

As of December 31, 2022, we owned 359 solid waste collection operations, 157 transfer stations, 63 MSW landfills, nine E&P waste landfills, 16 non-MSW landfills, 79 recycling operations, four intermodal operations, 22 E&P liquid waste injection wells and 18 E&P waste treatment and oil recovery facilities, and operated, but did not own, an additional 52 transfer stations, 12 MSW landfills and two intermodal operations, in 43 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 Woodbridge, Ontario, Canada, where we occupy approximately 15,000 square feet of space. In addition, we lease our administrative and regional offices in The Woodlands, Texas, where we occupy approximately 96,000 square feet of space. We also maintain regional administrative offices in each of our other 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 13 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K 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

Waste Connections, Inc. is a corporation organized under the laws of Ontario, Canada. In 2016, the predecessor corporation, Waste Connections, Inc., a Delaware corporation, entered into a business combination with Progressive Waste Solutions Ltd., a corporation organized under the laws of Ontario, Canada ("Progressive Waste" and the transaction, the "Progressive Waste acquisition"). References to the "Company" and "Waste Connections" in this Annual Report on Form 10-K refer to the combined business after the business combination and to the Delaware corporation, now known as "Waste Connections US, Inc., before the Progressive Waste acquisition. 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.

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 3, 2023, there were 75 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.

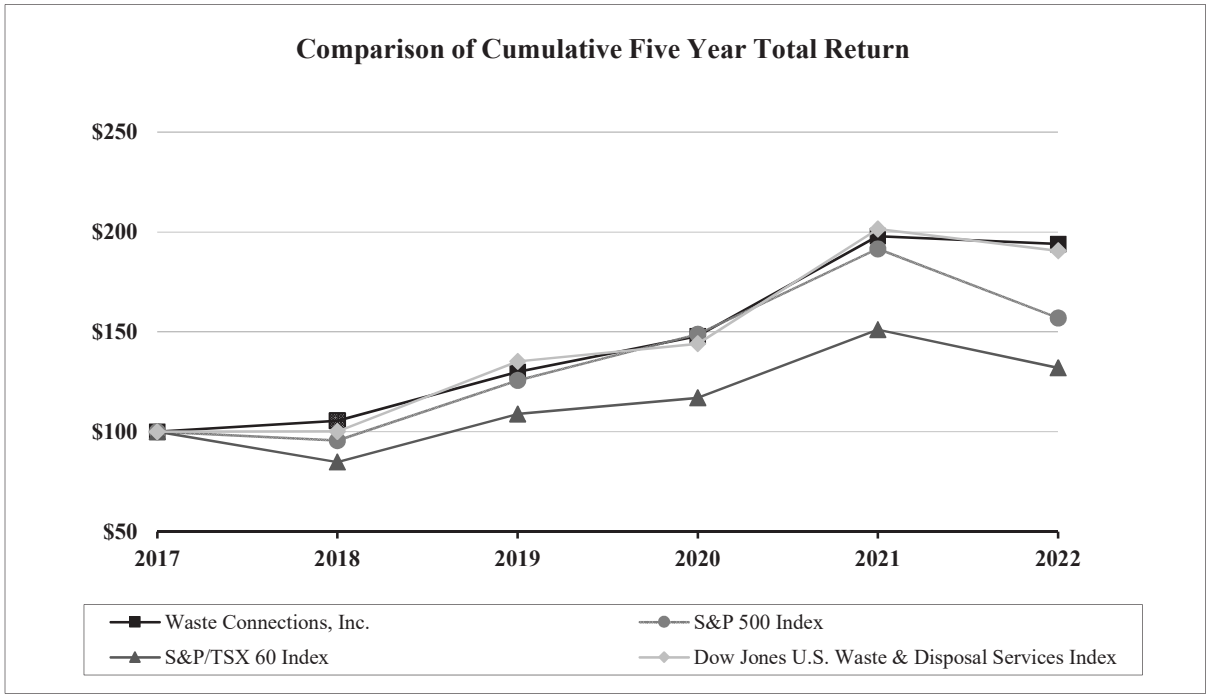
On February 15, 2023, we announced that our Board of Directors approved a regular quarterly cash dividend of $0.255 per common share. All dividends paid by us on our common shares after June 1, 2016 are designated as "eligible dividends" for Canadian federal income tax purposes and such treatment will continue unless 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 as to the amounts or timing of future dividends. We have the ability under our Credit Agreement and Term Loan Agreement (both as defined below) to repurchase our common shares and pay dividends provided we maintain specified financial ratios.

On July 26, 2022, 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 12,859,066 of our common shares during the period of August 10, 2022 to August 9, 2023 or until such earlier time as the NCIB is completed or terminated at our option. Shareholders may obtain a copy of our TSX Form 12 – Notice of Intention to Make a Normal Course Issuer Bid, without charge, by request directed to our Executive Vice President and Chief Financial Officer at (832) 442-2200. 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 will be immediately cancelled following their repurchase. Information regarding our NCIB plan can be found under the section Normal Course Issuer Bid in Note 14, "Shareholders' Equity," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K and is incorporated herein by reference.

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.

The graph depicts a five-year comparison of cumulative total returns for our common shares. The graph assumes an investment of $100 in our common shares on December 31, 2017, and the reinvestment of all dividends. This chart has been calculated in compliance with SEC requirements and prepared by S&P Global Inc. 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.

	Base Period	Indexed Returns Years Ending				
Company Name / Index	Dec17	Dec18	Dec19	Dec20	Dec21	Dec22
Waste Connections, Inc.	$ 100	$ 105.47	$ 129.93	$ 147.93	$ 197.93	$ 193.93
S&P 500 Index	$ 100	$ 95.62	$ 125.72	$ 148.85	$ 191.58	$ 156.88
S&P/TSX 60 Index	$ 100	$ 84.78	$ 108.88	$ 116.99	$ 151.09	$ 132.06
Dow Jones U.S. Waste & Disposal Services Index	$ 100	$ 100.11	$ 135.25	$ 144.12	$ 201.48	$ 190.59

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

ITEM 6. [RESERVED]

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

The following discussion should be read in conjunction with our consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K.

We make statements in this Annual Report on Form 10-K that are forward-looking in nature. These include:

- Statements regarding our landfills, including capacity, duration, special projects, demand for and pricing of recyclables, landfill alternatives and related capital expenditures;
- Discussion of competition, loss of contracts, price increases and additional exclusive and/or long-term collection service arrangements;
- Forecasts of cash flows necessary for operations and free cash flow to reduce leverage as well as our ability to draw on our credit facility and access the capital markets to refinance or expand;
- Statements regarding our ability to access capital resources or credit markets at all or on favorable terms;
- Plans for, and the amount of, certain capital expenditures for our existing and newly acquired properties and equipment;
- Statements regarding fuel, oil and natural gas demand, prices, and price volatility;
- Assessments of regulatory developments and potential changes in environmental, health, safety and tax laws and regulations; and
- Other statements on a variety of topics such as the COVID-19 pandemic, inflation, credit risk of customers, seasonality, labor/pension costs and labor union activity, operational and safety risks, acquisitions, litigation results, goodwill impairments, insurance costs and cybersecurity threats.

These statements can be identified by the use of forward-looking terminology such as "believes," "expects," "intends," "may," "might," "will," "could," "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 under the heading "ITEM 1A. Risk Factors" 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 that could have an adverse impact on our business. We make no commitment to revise or update any forward-looking statements to reflect events or circumstances that may change, unless required under applicable securities laws.

Industry Overview

The solid waste industry is local and highly competitive in nature, requiring substantial labor and capital resources. We 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 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, including as a result of macroeconomic and geopolitical conditions, which may impact levels of exploration and production activity, with a corresponding impact to our E&P waste activity. Most recently, in 2022, sustained increases in prices of crude oil as a result of inflationary pressures, the uncertainty associated with the Ukrainian conflict and any related bans on oil sales from Russia or supply chain disruptions as recently experienced contributed to increased levels of drilling activity and demand for our E&P waste services. Conversely, in 2020 and 2021, a significant decline in oil prices driven by both surplus production and supply, as well as the decrease in demand caused by factors including the COVID-19 pandemic, resulted in decreased levels of E&P drilling activity and a corresponding decrease in demand for our E&P waste services. Additionally, across the industry there was uncertainty regarding future demand for oil and related services, as noted by several energy companies, many of whom are customers of our E&P waste services. These energy companies wrote down the values of their oil and gas assets in anticipation of the potential for the decarbonization of their energy product mix given an increased global focus on reducing greenhouse gases and addressing climate change. At that time, the uncertainty regarding global demand had a significant impact on the investment and operating plans of our E&P waste customers in the basins where we operate.

If the prices of crude oil and natural gas substantially decline, it could lead to declines in the level of drilling 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 waste operations. See the section Impairments of Property and Equipment and Finite-Lived Intangible Assets in Note 3, "Summary of Significant Accounting Policies," of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K for a discussion of the impairment charges recorded during the years ended December 31, 2021 and 2020.

Executive Overview

We are an integrated solid waste services company that provides non-hazardous waste collection, transfer and disposal services, along with resource recovery primarily through recycling and renewable fuels generation, in mostly exclusive and secondary markets across 43 states in the U.S. and six provinces in Canada. Waste Connections also provides E&P waste services in several basins across the U.S., as well as intermodal services for the movement of cargo and solid waste containers in the Pacific Northwest.

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 non-hazardous E&P waste treatment, recovery and disposal services.

The COVID-19 Pandemic's impact on our Results of Operations

March 11, 2022 marked the two-year anniversary of COVID-19 being declared a global pandemic by the World Health Organization. The related economic disruptions largely associated with closures or restrictions put into effect following the onset of the COVID-19 pandemic in the first quarter of 2020 resulted in declines in solid waste commercial collection, transfer station and landfill volumes, and roll off activity. Throughout the remaining fiscal year 2020 and during 2021, solid waste revenue and reported volumes largely reflected the pace and shape of the closures and subsequent

reopening activity, with the timing and magnitude of recovery varying by market. Most of the impacts to solid waste volumes associated with the pandemic have largely abated, with landfill volumes and roll off pulls returning to pre-pandemic levels. In certain markets, commercial collection volumes have not returned to pre-pandemic levels. The COVID-19 pandemic also contributed to a decline in demand for and the value of crude oil, which impacted E&P drilling activity and resulted in lower E&P waste revenue during 2020 and 2021. During 2022, E&P waste revenue increased on higher levels of drilling activity in several of the major basins.

Since the onset of the COVID-19 pandemic, protecting the health, welfare and safety of our employees has been our top priority. Recognizing the potential for financial hardship and other challenges, we have looked to provide a safety net for our employees on issues of income and family health. To that end, since the onset of the pandemic through year-end 2022, we incurred over $50 million in incremental COVID-19-related costs, primarily supplemental pay and benefits for frontline employees, including approximately $10 million during 2022.

As a result of the COVID-19 pandemic and subsequent reopening activity, we have also experienced an impact to our operating costs as a result of factors including supply chain disruptions and labor constraints, as demand has recovered and competition has increased. As a result, we have incurred incremental costs associated with higher wages, increased overtime as a result of higher turnover, and increased reliance on third party services.

The impact of the COVID-19 pandemic on our business, results of operations, financial condition and cash flows in future periods will depend largely on future developments, including the duration and spread of the outbreak in the U.S. and Canada, the rate of vaccinations, the severity of COVID-19 variants, the actions to contain such coronavirus variants, and how quickly and to what extent normal economic and operating conditions can resume.

2022 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 2022 increased 17.2% to $7.212 billion from $6.151 billion in 2021. Acquisitions closed during, or subsequent to, the prior year, net of divestitures, accounted for $552.0 million in incremental revenues in 2022. Excluding the impact of such acquisitions, revenues increased 8.3% due predominantly to higher internal growth in solid waste. Solid waste internal growth was positive 7.4%, due to higher price increases and higher surcharges, partially offset by lower volumes and lower recycled commodities. Pricing growth was 9.2%, with core pricing up 7.7%, plus materials and environmental surcharges of positive 1.5%. Volumes decreased by 1.1% due primarily to the purposeful non-renewal of two residential hauling contracts, and decreases in the value of recycled commodities resulted in a 0.7% decrease to internal solid waste growth. Higher E&P waste activity resulted in a 1.2% increase to overall growth, and increases in landfill gas sales, including renewable energy credits, contributed 0.2% to overall growth.

Net income attributable to Waste Connections increased 35.2% to $835.7 million in 2022, from $618.0 million in 2021. In 2022, adjusted earnings before interest, taxes, depreciation and amortization, or adjusted EBITDA, a non-GAAP financial measure (refer to page 73 of this Annual Report on Form 10-K for a definition and reconciliation to Net income attributable to Waste Connections), increased 15.7% to $2.221 billion, from $1.919 billion in 2021. As a percentage of revenue, adjusted EBITDA decreased from 31.2% in 2021, to 30.8% in 2022. This 0.40 percentage point decrease reflects a 0.50 percentage point decrease from the margin dilutive impact of acquisitions completed during the period, as price-led organic growth in solid waste and higher E&P waste activity offset the impacts of lower recycled commodity values and continued inflationary pressures. Adjusted net income attributable to Waste Connections, a non-GAAP financial measure

(refer to page 74 of this Annual Report on Form 10-K for a definition and reconciliation to Net income attributable to Waste Connections), in 2022 increased 16.4% to $985.3 million from $846.6 million in 2021.

Adjusted Free Cash Flow

Net cash provided by operating activities increased 19.1% to $2.022 billion in 2022, from $1.698 billion in 2021. Capital expenditures for property and equipment increased from $744.3 million in 2021 to $912.7 million in 2022, an increase of $168.4 million, or 22.6%. Adjusted free cash flow, a non-GAAP financial measure (refer to page 72 of this Annual Report on Form 10-K for a definition and reconciliation to Net cash provided by operating activities), increased by $155 million to $1.165 billion in 2022, from $1.010 billion in 2021. Adjusted free cash flow as a percentage of revenues was 16.2% in 2022, as compared to 16.4% in 2021.

Return of Capital and Distributions to Shareholders

In 2022, we distributed $668.0 million to shareholders through a combination of cash dividends and share repurchases. We paid $243.0 million to shareholders through cash dividends declared by our Board of Directors, which also increased the quarterly cash dividend by 10.9%, from $0.23 to $0.255 per common share in November 2022. Cash dividends increased $22.8 million, or 10.4%, from $220.2 million in 2021 due to a 12.2% increase in the quarterly cash dividend declared by our Board of Directors in October 2021, followed by the additional increase in November 2022 and reflects the reduced share count resulting from repurchases. In 2022, we also repurchased 3.4 million common shares at an aggregate cost of $425 million pursuant to our Normal Course Issuer Bid, which was renewed in August and which provides for repurchases of up to 12,859,066 shares, being 5% of the shares outstanding as of August 2, 2022. 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. 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 as to the amounts or timing of future share repurchases or dividends. We have the ability under our Credit Agreement and Term Loan Agreement to repurchase our common shares and pay dividends provided that we maintain specified financial ratios.

Capital Position

We target a Leverage Ratio, as defined substantially identically in both our Credit Agreement and Term Loan Agreement, of approximately 2.5x – 3.0x total debt to EBITDA. The Leverage Ratio is a non-GAAP ratio (refer to page 74 of this Annual Report on Form 10-K for more information on this ratio). Higher debt resulting primarily from acquisition outlays in 2022 was partially offset by higher EBITDA in 2022, resulting in an increase in our Leverage Ratio from 2.50x at December 31, 2021 to 2.93x at December 31, 2022. Cash balances decreased from $147.4 million at December 31, 2021 to $78.6 million at December 31, 2022, and we had $1.194 billion of remaining borrowing capacity under our Credit Agreement, which matures in July 2026. In total, we had $1.163 billion in prepayable debt outstanding at December 31, 2022.

Critical Accounting Estimates and Assumptions

The preparation of financial statements in conformity with GAAP 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.

We believe that of our significant accounting policies, which are described in Note 3 of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K, the following accounting policies involve a greater degree of judgment and complexity. Accordingly, we believe these are the most critical to fully understand and evaluate our financial condition and results of operations.

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 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, 2022, 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 $3.9 million.

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 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, including as a result of inflation, 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 2022 and 2021 "layers" for final capping, closure and post-closure obligations is based on our long-term credit adjusted risk free rate. Our discount rate ranged from 3.25% to 5.50% for 2022 and was 3.25% for 2021. Our long-term inflation rate assumption ranged from 2.25% to 2.75% for 2022 and was 2.25% for 2021. 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.

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 a segment; or
- current period or expected future operating cash flow losses.

As part of our goodwill impairment test, we estimate the fair value of each of our reporting units using discounted cash flow analyses. Our reporting units consisted of our five geographic solid waste operating segments at December 31, 2022, 2021 and 2020. We compare the fair value of each reporting unit with the carrying value of the net assets assigned to the 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. 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.

Discounted cash flow analyses 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, growth rates and income tax 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 operating segments for the year ended December 31, 2022, we determined that the indicated fair value of each of our reporting units exceeded their carrying value in excess of 200% and, therefore, we did not record an impairment charge. The detailed results of our 2022, 2021 and 2020 impairment tests are described in Note 3 of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

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 the 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 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.

Our revenues from recycling services result from the sale of recycled commodities, which 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. We own and operate recycling operations and market collected recyclable materials to third parties for processing before resale. In some instances, we utilize a third party to market recycled materials. In certain instances, we issue recycling rebates to municipal or commercial customers, which can be based on the price we receive upon the sale of recycled commodities, a fixed contractual rate or other measures. We also receive rebates when we dispose of recycled commodities at third-party facilities.

Other revenues consist primarily of the sale of methane gas and renewable energy credits 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 (in thousands of U.S. dollars).

	Years Ended December 31,		
	2022	2021	2020
Commercial	$ 2,176,295	$ 1,813,426	$ 1,610,313
Residential	1,891,108	1,673,819	1,528,217
Industrial and construction roll off	1,183,624	954,181	833,148
Total collection	5,251,027	4,441,426	3,971,678
Landfill	1,328,942	1,233,499	1,146,732
Transfer	1,026,050	859,113	777,754
Recycling	204,876	205,076	86,389
E&P	210,562	138,707	159,438
Intermodal and other	188,471	152,194	118,396
Intercompany	(998,069)	(878,654)	(814,397)
Total	$ 7,211,859	$ 6,151,361	$ 5,445,990

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 2022 were labor, employee benefits, third-party disposal and transportation, vehicle, equipment and property 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 lease cost 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, permits and other agreements. We use an accelerated or straight-line basis for amortization, depending on the attributes of the related intangibles. 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.

Presentation of Results of Operations, Segment Reporting, and Liquidity and Capital Resources

The following discussion and analysis of our Results of Operations, Segment Reporting, and Liquidity and Capital Resources includes a comparison for the year ended December 31, 2022 to the year ended December 31, 2021. A similar discussion and analysis that compares the year ended December 31, 2021 to the year ended December 31, 2020 can be found in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2021.

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,			
	2022	% of Revenues	2021	% of Revenues
Revenues	$ 7,211,859	100.0 %	$ 6,151,361	100.0 %
Cost of operations	4,336,012	60.1	3,654,074	59.4
Selling, general and administrative	696,467	9.7	612,337	10.0
Depreciation	763,285	10.6	673,730	10.9
Amortization of intangibles	155,675	2.2	139,279	2.3
Impairments and other operating items	18,230	0.2	32,316	0.5
Operating income	1,242,190	17.2	1,039,625	16.9
Interest expense	(202,331)	(2.8)	(162,796)	(2.6)
Interest income	5,950	0.1	2,916	0.0
Other income, net	3,154	0.0	6,285	0.1
Loss on early extinguishment of debt	—	—	(115,288)	(1.9)
Income tax provision	(212,962)	(2.9)	(152,253)	(2.5)
Net income	836,001	11.6	618,489	10.0
Net income attributable to noncontrolling interests	(339)	(0.0)	(442)	(0.0)
Net income attributable to Waste Connections	$ 835,662	11.6 %	$ 618,047	10.0 %

Years Ended December 31, 2022 and 2021

Revenues. Total revenues increased $1.060 billion, or 17.2%, to $7.212 billion for the year ended December 31, 2022, from $6.151 billion for the year ended December 31, 2021.

During the year ended December 31, 2022, incremental revenue from acquisitions closed during, or subsequent to, the year ended December 31, 2021, increased revenues by approximately $563.1 million.

Operations that were divested in 2022 and the full year impact of operations that were divested in 2021, decreased revenues by $11.1 million for the year ended December 31, 2022.

During the year ended December 31, 2022, the net increase in prices charged to our customers at our existing operations was $541.7 million, consisting of $455.8 million of core price increases and surcharges of $85.9 million.

During the year ended December 31, 2022, we recognized volume losses totaling $63.2 million, which was comprised of $51.8 million of declines associated with the aforementioned residential collection contracts, lower post-collection volumes related to transportation shortages, partially offset by increases primarily attributable to commercial and roll off collection.

E&P waste revenues at facilities owned during the years ended December 31, 2022 and 2021 increased $75.8 million due to increases in overall demand for our E&P waste services resulting from higher demand for crude oil contributing to increases in drilling and production activity levels.

Revenues from sales of recyclable commodities at facilities owned during the years ended December 31, 2022 and 2021 decreased $45.0 million. Prices for old corrugated cardboard, aluminum, plastics and other paper products increased from the prior period during the six months ended June 30, 2022 before declining during the six months ended December 31, 2022.

A decrease in the average Canadian dollar to U.S. dollar currency exchange rate resulted in a decrease in revenues of $32.4 million for the year ended December 31, 2022. The average Canadian dollar to U.S. dollar exchange rates on our Canadian revenues were 0.7682 and 0.7982 for the years ended December 31, 2022 and 2021, respectively.

Other revenues increased $31.6 million during the year ended December 31, 2022, due primarily to a $14.1 million increase in landfill gas revenues and renewable energy credits, a $12.1 million increase in intermodal revenues and a $5.4 million increase in other non-core revenue sources.

Cost of Operations. Total cost of operations increased $681.9 million, or 18.7%, to $4.336 billion for the year ended December 31, 2022, from $3.654 billion for the year ended December 31, 2021. The increase was primarily the result of $369.4 million of additional operating costs from acquisitions closed during, or subsequent to, the year ended December 31, 2021 and an increase in operating costs at our existing operations of $337.8 million, assuming foreign currency parity, partially offset by a decrease in operating costs of $16.9 million resulting from a lower average foreign currency exchange rate in effect during the current period and a decrease of $8.4 million from operations divested subsequent to the year ended December 31, 2021.

The increase in operating costs of $337.8 million, assuming foreign currency parity, at our existing operations for the year ended December 31, 2022 consisted of an increase in labor and recurring incentive compensation expenses of $92.2 million due primarily to employee pay increases, an increase in fuel expense of $73.1 million due to higher diesel and natural gas prices, an increase in third-party trucking and transportation expenses of $52.9 million due primarily to increased landfill special waste volumes requiring trucking and transportation services to our landfills and higher rates charged by third-party providers, an increase in truck, container, equipment and facility maintenance and repair expenses of $43.1 million due primarily to increased collection routes and equipment operating hours and parts and service rate increases, an increase in third-party disposal expenses of $17.7 million due primarily to rate increases at third-party post-collection sites, an increase in expenses for auto and workers' compensation claims of $9.1 million due primarily to increased claim severity and inflation-led cost increases, an increase in supplemental compensation to non-management personnel of $9.0 million to provide financial assistance associated with the impact of the COVID-19 pandemic, an increase in taxes on revenues of $8.9 million due primarily to increased revenues, an increase in intermodal rail expenses of $6.1 million due to higher cargo volumes, an increase in expenses for purchasing and processing recyclable commodities of $4.9 million due to processing expenses charged by third parties increasing as recyclable commodity values decline in certain regulated operating markets, an increase in subcontracted hauling services at our solid waste operations of $3.8

million due to higher costs charged by third-party providers, an increase in landfill maintenance, environmental compliance and daily cover expenses of $3.2 million due to increased compliance requirements under our landfill operating permits, an increase in 401(k) matching expenses of $2.0 million due to higher employee earnings, an increase in property tax expense of $1.9 million due to higher property value assessments and $9.9 million of other net expense increases.

Cost of operations as a percentage of revenues increased 0.7 percentage points to 60.1% for the year ended December 31, 2022, from 59.4% for the year ended December 31, 2021. The increase as a percentage of revenues consisted of a 0.7 percentage point increase from higher fuel expense, a 0.6 percentage point increase from higher third-party trucking and transportation expenses, a 0.5 percentage point increase from acquisitions closed during, or subsequent to, the year ended December 31, 2021 having operating margins lower than our company average, and a 0.1 percentage point increase in compensation to non-management personnel for financial assistance associated with the impact of the COVID-19 pandemic, partially offset by a combined 1.2 percentage point decrease from disposal, taxes on revenues, labor and employee benefits due to price-driven revenue increases.

SG&A. SG&A expenses increased $84.2 million, or 13.7%, to $696.5 million for the year ended December 31, 2022, from $612.3 million for the year ended December 31, 2021. The increase was comprised of an increase of $45.8 million, assuming foreign currency parity, at our existing operations and $42.3 million from acquisitions closed during, or subsequent to, the year ended December 31, 2021, partially offset by a decrease of $2.8 million resulting from a lower average foreign currency exchange rate in effect during the current period and a decrease of $1.1 million from operations divested subsequent to the year ended December 31, 2021.

The increase in SG&A expenses at our existing operations of $45.8 million, assuming foreign currency parity, for the year ended December 31, 2022 was comprised of a collective increase in travel, meetings, training and community activity expenses of $22.6 million due to increased travel and social gatherings in the current year period due to a reduction in restrictions associated with the COVID-19 pandemic, an increase in administrative payroll expenses of $16.4 million due primarily to annual pay increases, an increase in direct acquisition expenses of $13.6 million due to an increase in acquisition activity in the current period, 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 in software license fees of $3.7 million associated with new information technology applications, an increase in bad debt costs of $2.8 million associated with increased revenue, an increase in professional fees of $1.6 million due primarily to increased legal services, an increase of $0.8 million resulting from the payment of supplemental bonuses to non-management employees to provide financial assistance associated with the impact of the COVID-19 pandemic and $4.1 million of other net expense increases, partially offset by a decrease in deferred compensation expenses of $9.1 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 $8.6 million, a decrease of $5.2 million in equity-based compensation expenses associated with the prior year period including adjustments to increase the fair value of our common shares held in our deferred compensation plan by certain key executives as a result of the shares being exchanged for other investment options, and a decrease in equity-based compensation expenses of $3.1 million associated with changes in our share price resulting in fair value measurement decreases to 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.

SG&A expenses as a percentage of revenues decreased 0.3 percentage points to 9.7% for the year ended December 31, 2022, from 10.0% for the year ended December 31, 2021. The decrease as a percentage of revenues was primarily attributable to lower cash incentive compensation expense, lower deferred compensation expense, acquisitions closed during, or subsequent to, the year ended December 31, 2021 having lower SG&A expenses as a percentage of revenues than our company average and the impact of price-driven revenue increases in our solid waste services, partially offset by increased travel, meetings, training and community activity expenses and higher direct acquisition expenses.

Depreciation. Depreciation expense increased $89.6 million, or 13.3%, to $763.3 million for the year ended December 31, 2022, from $673.7 million for the year ended December 31, 2021. The increase was comprised of an increase in depreciation and depletion expense of $62.4 million from acquisitions closed during, or subsequent to, the year ended December 31, 2021, an increase in depreciation expense of $24.5 million from the impact of additions to our fleet and equipment purchased to support our existing operations and an increase in depletion expense of $9.2 million resulting from

increased landfill special waste and E&P volumes and higher landfill development costs increasing our per ton landfill depletion rates, partially offset by a decrease of $3.4 million resulting from a lower average foreign currency exchange rate in effect during the current period, and a decrease in depreciation and depletion expense of $3.1 million from operations divested subsequent to the year ended December 31, 2021.

Depreciation expense as a percentage of revenues decreased 0.3 percentage points to 10.6% for the year ended December 31, 2022, from 10.9% for the year ended December 31, 2021. The decrease as a percentage of revenues was primarily attributable to the impact of price-driven revenue increases in our solid waste services.

Amortization of Intangibles. Amortization of intangibles expense increased $16.4 million, or 11.8%, to $155.7 million for the year ended December 31, 2022, from $139.3 million for the year ended December 31, 2021. The increase was the result of $37.7 million from intangible assets acquired in acquisitions closed during, or subsequent to, the year ended December 31, 2021, partially offset by a decrease of $20.5 million from certain intangible assets becoming fully amortized subsequent to December 31, 2021 and a decrease of $0.8 million resulting from a lower average foreign currency exchange rate in effect during the current period.

Amortization of intangibles expense as a percentage of revenues decreased 0.1 percentage points to 2.2% for the year ended December 31, 2022, from 2.3% for the year ended December 31, 2021. The decrease as a percentage of revenues was attributable to the impact of price-driven revenue increases in our solid waste services.

Impairments and Other Operating Items. Impairments and other operating items decreased $14.1 million, to net losses totaling $18.2 million for the year ended December 31, 2022, from net losses totaling $32.3 million for the year ended December 31, 2021.

The net losses of $18.2 million recorded during the year ended December 31, 2022 consisted of $10.8 million of charges to write off the carrying cost of certain contracts that were not, or are not expected to be, renewed prior to the original estimated termination date and an $8.4 million lawsuit judgment accrual, partially offset by $1.0 million of other net gains.

The net losses of $32.3 million recorded during the year ended December 31, 2021 consisted of $18.7 million of impairment charges to property and equipment and intangible assets at three of our E&P waste operations, $4.9 million of charges to terminate or write off the carrying cost of certain contracts that were not, or are not expected to be, renewed prior to the original estimated termination date, a $4.6 million loss resulting from property and equipment damaged in a facility fire, $2.8 million of adjustments to increase the carrying value of certain contingent consideration liabilities, $1.5 million of losses on property and equipment disposals and $1.8 million of other net charges, partially offset by $2.0 million of gains from the disposal of assets at two non-strategic operating locations.

Operating Income. Operating income increased $202.6 million, or 19.5%, to $1.242 billion for the year ended December 31, 2022, from $1.040 billion for the year ended December 31, 2021.

The increase in our operating income for the year ended December 31, 2022 was due primarily to price increases for our solid waste services, operating income contributions from increased sales of renewable energy credits associated with the generation of landfill gas, operating income generated from acquisitions closed during, or subsequent to, the year ended December 31, 2021 and an increase in earnings at our E&P waste operations.

Operating income as a percentage of revenues increased 0.3 percentage points to 17.2% for the year ended December 31, 2022, from 16.9% for the year ended December 31, 2021. The increase in operating income as a percentage of revenues was comprised of a 0.3 percentage point decrease in impairments and other operating items, a 0.3 percentage point decrease in depreciation expense, a 0.3 percentage point decrease in SG&A expense and a 0.1 percentage point decrease in amortization expense, partially offset by a 0.7 percentage point increase in cost of operations.

Interest Expense. Interest expense increased $39.5 million, or 24.3%, to $202.3 million for the year ended December 31, 2022, from $162.8 million for the year ended December 31, 2021. The increase was primarily attributable to an increase of $53.3 million from the issuance of $2.75 billion of senior unsecured notes during, or subsequent to, the year ended

December 31, 2021, an increase of $13.9 million due to an increase in the average borrowings outstanding under our Credit Agreement and Term Loan Agreement and an increase of $9.8 million from higher interest rates on borrowings outstanding under our Credit Agreement, partially offset by a decrease of $37.1 million from the repayment of $1.75 billion of senior unsecured notes during the year ended December 31, 2021 and $0.4 million of other net decreases.

Interest Income. Interest income increased $3.1 million to $6.0 million for the year ended December 31, 2022, from $2.9 million for the year ended December 31, 2021. The increase was primarily attributable to higher reinvestment rates, partially offset by lower average cash balances in the current period.

Other Income, Net. Other income, net decreased $3.1 million, to $3.2 million for the year ended December 31, 2022, from $6.3 million for the year ended December 31, 2021.

Other income of $3.2 million recorded during the year ended December 31, 2022 consisted of income from transactions primarily as a result of the impact from changes in foreign currency exchange rates of $7.0 million related to the decrease in the Canadian dollar to the U.S. dollar exchange rate in the period, and $1.4 million of other income, partially offset by $5.2 million from a decline in the value of investments purchased to fund our employee deferred compensation obligations.

Other income of $6.3 million recorded during the year ended December 31, 2021 consisted of $3.8 million of income earned on investments purchased to fund our employee deferred compensation obligations, a $1.4 million adjustment to decrease certain non-acquisition accrued liabilities recorded in prior periods, an increase in foreign currency transaction gains of $0.7 million attributable to the impact of an increase in the Canadian dollar to U.S. dollar exchange rate during the period and a $0.4 million increase in other net income sources.

Loss on Early Extinguishment of Debt. Loss on early extinguishment of debt was $115.3 million for the year ended December 31, 2021 and consisted of the payment of a make-whole premium and the write-off of remaining unamortized loan fees associated with the early repayment of the outstanding senior notes under our master note purchase agreements.

Income Tax Provision. Income taxes increased $60.7 million, to $213.0 million for the year ended December 31, 2022, from $152.3 million for the year ended December 31, 2021. Our effective tax rate for the year ended December 31, 2022 was 20.3%. Our effective tax rate for the year ended December 31, 2021 was 19.8%.

The income tax provision for the year ended December 31, 2022 included a benefit of $2.7 million from share-based payment awards being recognized in the income statement when settled, as well as a portion of our internal financing being taxed at effective rates substantially lower than the U.S. federal statutory rate.

The income tax provision for the year ended December 31, 2021 included a benefit of $2.1 million from share-based payment awards being recognized in the income statement when settled, as well as a portion of our internal financing being taxed at effective rates substantially lower than the U.S. federal statutory rate.

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.

Segment Reporting

We manage our operations through the following five geographic solid waste operating segments: Eastern, Southern, Western, Central and Canada. Our five geographic solid waste operating segments comprise our reportable segments. 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 loss on early extinguishment of debt. 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. Each operating segment is responsible for managing several vertically integrated operations, which are comprised of districts.

Summarized financial information for our reportable segments are shown in the following tables in thousands of U.S. dollars and as a percentage of total segment revenue for the periods indicated:

Years Ended December 31, 2022	Revenue	EBITDA	EBITDA Margin	Depreciation and Amortization
Eastern	$ 1,890,705	$ 486,649	25.7 %	$ 281,178
Southern	1,667,778	497,832	29.9 %	198,506
Western	1,484,632	445,894	30.0 %	159,899
Central	1,228,120	424,621	34.6 %	152,154
Canada	940,624	349,403	37.1 %	118,388
Corporate[(a)]	—	(25,019)	—	8,835
	$ 7,211,859	$ 2,179,380	30.2 %	$ 918,960

Years Ended December 31, 2021	Revenue	EBITDA	EBITDA Margin	Depreciation and Amortization
Eastern	$ 1,521,288	$ 404,493	26.6 %	$ 239,130
Southern	1,446,746	394,982	27.3 %	188,977
Western	1,280,188	405,778	31.7 %	129,988
Central	1,046,416	359,434	34.3 %	134,078
Canada	856,723	339,859	39.7 %	111,458
Corporate[(a)]	—	(19,596)	—	9,378
	$ 6,151,361	$ 1,884,950	30.6 %	$ 813,009

(a) The majority of Corporate expenses are allocated to the five operating segments. Direct acquisition expenses, expenses associated with common shares held in the deferred compensation plan exchanged for other investment options and share-based compensation expenses associated with Progressive Waste share-based grants outstanding at June 1, 2016 that were continued by the Company are not allocated to the five operating segments and comprise the net EBITDA for our Corporate segment for the periods presented.

A reconciliation of segment EBITDA to Income before income tax provision is included in Note 17 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

Significant changes in revenue, EBITDA and depreciation, depletion and amortization for our reportable segments for the year ended December 31, 2022, compared to the year ended December 31, 2021, are discussed below.

Eastern

Revenue increased $369.4 million to $1.891 billion for 2022, from $1.521 billion for 2021, due to price increases, contributions from acquisitions and increased landfill gas sales attributable to higher volumes produced, partially offset by decreased post-collection volumes, decreased residential collection volumes, and lower prices for recyclable commodities.

EBITDA increased $82.1 million to $486.6 million, or a 25.7% EBITDA margin for 2022, from $404.5 million, or a 26.6% EBITDA margin for 2021. The decrease in our EBITDA margin was due primarily to increased diesel fuel expenses, increased third-party trucking and transportation expenses, increased corporate overhead allocations and increased travel, meetings, training and community activity expenses, partially offset by benefits from price-led revenue increases and the impact of acquisitions having higher EBITDA margins than our segment average.

Depreciation, depletion and amortization expense increased $42.1 million, to $281.2 million for 2022, from $239.1 million for 2021, due to assets acquired in acquisitions, additions to our fleet and equipment and higher depletion expense due to higher landfill development costs increasing our per ton landfill depletion rates.

Southern

Revenue increased $221.0 million to $1.668 billion for 2022, from $1.447 billion for 2021, due to solid waste price increases, increased E&P waste revenues attributable to increases in drilling and production activity levels resulting in increases in the demand for our E&P waste services and contributions from acquisitions, partially offset by lower residential collection volumes due to the purposeful non-renewal of a collection contract subsequent to December 31, 2021, a decrease resulting from the divestiture of certain non-strategic operating locations and lower post-collection volumes.

EBITDA increased $102.8 million to $497.8 million, or a 29.9% EBITDA margin for 2022, from $395.0 million, or a 27.3% EBITDA margin for 2021. The increase in our EBITDA margin was due to increased earnings at our E&P operations, the purposeful non-renewal of a residential contract, and price-led increases in solid waste revenue, partially offset by increased diesel and natural gas fuel expenses, the impact of acquisitions having lower EBITDA margins than our segment average, increased travel, meetings, training and community activity expenses and increased legal expenses.

Depreciation, depletion and amortization expense increased $9.5 million, to $198.5 million for 2022, from $189.0 million for 2021, due to assets acquired in acquisitions, additions to our fleet and equipment and higher depletion expense due to increased landfill volumes and higher landfill development costs increasing our per ton landfill depletion rates, partially offset by a decrease resulting from the divestiture of certain non-strategic operating locations and a reduction in amortization expense associated with the loss of a large residential collection contract.

Western

Revenue increased $204.4 million to $1.485 billion for 2022, from $1.280 billion for 2021, due to contributions from acquisitions, price increases, increased collection volumes, higher prices during the first six months in the comparable periods for recyclable commodities and increased intermodal revenue, partially offset by lower prices for recyclable commodities during the last six months in the comparable period.

EBITDA increased $40.1 million to $445.9 million, or a 30.0% EBITDA margin for 2022, from $405.8 million, or a 31.7% EBITDA margin for 2021. The decrease in our EBITDA margin was due to increased diesel and natural gas fuel expenses, increased third-party trucking and transportation expenses, increased cost of recyclable commodities expenses, increased labor and recurring incentive compensation expenses and increased travel, meetings, training and community activity expenses, partially offset by benefits from price-led increases in revenue.

Depreciation, depletion and amortization expense increased $29.9 million, to $159.9 million for 2022, from $130.0 million for 2021, due to assets acquired in acquisitions and additions to our fleet and equipment.

Central

Revenue increased $181.7 million to $1.228 billion for 2022, from $1.046 billion for 2021, due to price increases, contributions from acquisitions, higher landfill and residential collection volumes and higher prices during the first six months in the comparable periods for recyclable commodities, partially offset by lower prices for recyclable commodities during the last six months in the comparable period.

EBITDA increased $65.2 million to $424.6 million, or a 34.6% EBITDA margin for 2022, from $359.4 million, or a 34.3% EBITDA margin for 2021. The increase in our EBITDA margin was due to the benefits from price-led increases in revenue, partially offset by acquisitions having EBITDA margins lower than our segment average and increased diesel and natural gas fuel expenses.

Depreciation, depletion and amortization expense increased $18.1 million, to $152.2 million for 2022, from $134.1 million for 2021, due to assets acquired in acquisitions, additions to our fleet and equipment and higher depletion expense due to higher landfill development costs increasing our per ton landfill depletion rates.

Canada

Revenue increased $83.9 million to $940.6 million for 2022, from $856.7 million for 2021, due to price increases, contributions from acquisitions, higher commercial and roll off collection volumes, higher prices for renewable energy credits associated with the generation of landfill gas and higher prices during the first six months in the comparable periods for recyclable commodities, partially offset by a decrease in the average foreign currency exchange rate in effect during the comparable reporting periods, lower residential collection volumes due to the purposeful non-renewal of a collection contract subsequent to December 31, 2021, lower landfill volumes, lower prices for recyclable commodities during the last six months in the comparable period and the divestiture of a non-strategic operating location.

EBITDA increased $9.5 million to $349.4 million, or a 37.1% EBITDA margin for 2022, from $339.9 million, or a 39.7% EBITDA margin for 2021. The decrease in our EBITDA margin was due to acquisitions having EBITDA margins lower than our segment average, increased diesel fuel expenses, increased disposal expenses, increased employee benefits expenses, increased subcontracted hauling services, increased travel, meetings, training and community activity expenses, partially offset by benefits from price-led increases in revenue and the purposeful non-renewal of a collection contract.

Depreciation, depletion and amortization expense increased $6.9 million, to $118.4 million for 2022, from $111.5 million for 2021, due to assets acquired in acquisitions and additions to our fleet and equipment, partially offset by a decrease in depletion expense due to lower landfill disposal volumes, a decrease resulting from the divestiture of a non-strategic operating location and a decrease in the average foreign currency exchange rate in effect during the comparable reporting periods.

Corporate

EBITDA decreased $5.4 million, to a loss of $25.0 million for 2022, from a loss of $19.6 million for 2021. The decrease was due to increased travel, meetings, training and community activity expenses, increased direct acquisition expenses, increased employee payroll expense, increased software license fees and the payment of supplemental bonuses to non-management employees to provide financial assistance associated with the impact of the COVID-19 pandemic, partially offset by decreased equity-based compensation expenses, decreased deferred compensation expenses, decreased cash incentive compensation expense to our management and decreased allocations of corporate overhead expenses to our segments.

Liquidity and Capital Resources

The following table sets forth certain cash flow information for the years ended December 31, 2022 and 2021 (in thousands of U.S. dollars):

	2022	2021
Net cash provided by operating activities	$ 2,022,492	$ 1,698,229
Net cash used in investing activities	(3,087,171)	(1,693,482)
Net cash provided by (used in) financing activities	1,028,463	(499,496)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(2,035)	(25)
Net decrease in cash, cash equivalents and restricted cash	(38,251)	(494,774)
Cash, cash equivalents and restricted cash at beginning of year	219,615	714,389
Cash, cash equivalents and restricted cash at end of year	$ 181,364	$ 219,615

Operating Activities Cash Flows

For the year ended December 31, 2022, net cash provided by operating activities was $2.022 billion. For the year ended December 31, 2021, net cash provided by operating activities was $1.698 billion. The $324.4 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 $192.1 million from an increase in net income, excluding depreciation, amortization of intangibles, share-based compensation, adjustments to and payments of contingent consideration recorded in earnings and loss on disposal of assets, impairments and early extinguishment of debt, due primarily to price increases, earnings from acquisitions, earnings generated from an increase in landfill gas revenues and renewable energy credits and an increase in earnings at our E&P waste operations.
2) *Accounts payable and accrued liabilities* — Our increase in net cash provided by operating activities was favorably impacted by $94.2 million from accounts payable and accrued liabilities as changes in accounts payable and accrued liabilities resulted in an increase to operating cash flows of $164.8 million for the year ended December 31, 2022, compared to an increase to operating cash flows of $70.6 million for the year ended December 31, 2021. The increase for the year ended December 31, 2022 was due primarily to increases in operating expenses during the period which remained as outstanding obligations at December 31, 2022, the timing of processing year-end payments to vendors for capital expenditures and increased accrued interest due to the timing of interest payments for our senior unsecured notes issued subsequent to December 31, 2021, partially offset by the payment of deferred payroll taxes. The increase for the year ended December 31, 2021 was due primarily to increases in operating expenses during the period which remained as outstanding obligations at December 31, 2021.
3) *Deferred income taxes* — Our increase in net cash provided by operating activities was favorably impacted by $75.8 million from deferred income taxes as changes in deferred income taxes resulted in an increase to operating cash flows of $93.5 million for the year ended December 31, 2022, compared to an increase to operating cash flows of $17.7 million for the year ended December 31, 2021. The increase for the year ended December 31, 2022 was primarily attributable to tax benefits resulting from the divestiture of certain non-strategic E&P disposal operating locations. The increase in deferred taxes for the year ended December 31, 2021 was primarily due to accelerated tax depreciation from vehicles, equipment and containers.
4) *Deferred revenue* — Our increase in net cash provided by operating activities was favorably impacted by $10.5 million from deferred revenue as changes in deferred revenue resulted in an increase to operating cash flows of $42.2 million for the year ended December 31, 2022, compared to an increase to operating cash flows of $31.7 million for the year ended December 31, 2021. For both comparative periods, deferred revenue increased due to price increases on our advanced billed residential and commercial collection services.
5) *Prepaid expenses* – Our increase in net cash provided by operating activities was favorably impacted by $7.5 million from prepaid expenses as changes in prepaid expenses resulted in a decrease to operating cash flows of $0.7 million for the year ended December 31, 2022, compared to a decrease to operating cash flows of $8.2 million for the year ended December 31, 2021. The decrease for the year ended December 31, 2022 was due primarily to increases from payments of annual insurance premiums, payments of annual information system licenses and higher parts and fuel inventory, partially offset by a decrease in prepaid income tax payments. The decrease for the year ended December 31, 2021 was due primarily to increases in prepaid income tax payments and prepaid vendor payments.
6) *Accounts receivable* – Our increase in net cash provided by operating activities was unfavorably impacted by $45.9 million from accounts receivable as changes in accounts receivable resulted in a decrease to operating cash flows of $100.5 million for the year ended December 31, 2022, compared to a decrease to operating cash flows of $54.7 million for the year ended December 31, 2021. The decrease for the years ended December 31, 2022 and 2021 was due to increases in revenues, which remained as outstanding receivables at year end.
7) *Other long-term liabilities* – Our increase in net cash provided by operating activities was unfavorably impacted by $14.7 million from other long-term liabilities as changes in other long-term liabilities resulted in a decrease to operating cash flows of $14.0 million for the year ended December 31, 2022, compared to an increase to operating cash flows of $0.7 million for the year ended December 31, 2021. The decrease for the year ended December 31, 2022 was due primarily to decreased employee deferred compensation liabilities at year end.

As of December 31, 2022, we had a working capital deficit of $395.0 million, including cash and equivalents of $78.6 million. Our working capital decreased $195.0 million from a working capital deficit of $200.0 million at December 31, 2021 including cash and equivalents of $147.4 million, due primarily to a decrease in cash balances and increases in accounts payable and deferred revenue, partially offset by increased accounts receivable, increased inventory balances, and higher prepaid expenses. To date, we have experienced no loss or lack of access to our cash and equivalents; however, we can provide no assurances that access to our cash and 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 $1.394 billion to $3.087 billion for the year ended December 31, 2022, from $1.693 billion for the year ended December 31, 2021. The significant components of the increase included the following:

1) An increase in cash paid for acquisitions of $1.246 billion;
2) An increase in capital expenditures at operations owned in the comparable periods of $103.5 million due to increases in land and buildings and landfill site costs; and
3) An increase in capital expenditures at operations acquired during the comparative periods of $64.9 million due to expenditures for landfill site costs, trucks, equipment and containers; less
4) A decrease in cash paid for investments in noncontrolling interests of $25.0 million resulting from a 2021 expenditure that did not reoccur in 2022; and
5) A decrease in proceeds from disposal of assets of $12.1 million due to lower disposal of non-strategic assets to provide funding toward new capital expenditures.

Financing Activities Cash Flows

Net cash provided by financing activities increased $1.528 billion to $1.028 billion for the year ended December 31, 2022, from net cash used in financing activities of $499.5 million for the year ended December 31, 2021. The significant components of the increase included the following:

1) An increase from the net change in long-term borrowings of $1.522 billion in which long-term borrowings increased $1.745 billion during the year ended December 31, 2022 and increased $222.2 million during the year ended December 31, 2021; and
2) An increase from premiums paid on early extinguishment of debt of $110.6 million resulting from the repayment in September 2021 of all of our outstanding senior notes under our master note purchase agreements; less
3) A decrease from higher payments to repurchase our common shares of $86.0 million due to an increased volume of shares repurchased; and
4) A decrease from higher cash dividends paid of $22.8 million due primarily to an increase in our average quarterly dividend rate for the year ended December 31, 2022 to $0.236 per share, from $0.211 per share for the year ended December 31, 2021.

On July 26, 2022, 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 12,859,066 of our common shares during the period of August 10, 2022 to August 9, 2023 or until such earlier time as the NCIB is completed or terminated at our option. Shareholders may obtain a copy of our TSX Form 12 – Notice of Intention to Make a Normal Course Issuer Bid, without charge, by request directed to our Executive Vice President and Chief Financial Officer at (832) 442-2200. 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 will be immediately cancelled following their repurchase. Information regarding our NCIB plan can be found under the section Normal Course Issuer Bid in Note 14, “Shareholders’ Equity,” of our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K and is incorporated herein by reference.

The Board of Directors of the Company authorized the initiation of a quarterly cash dividend in October 2010 and has increased it on an annual basis. In November 2022, we announced that our Board of Directors increased our regular quarterly cash dividend by $0.025, from $0.230 to $0.255 per share. Cash dividends of $243.0 million and $220.2 million were paid during the years ended December 31, 2022 and 2021, respectively. We cannot assure as to the amounts or timing of future dividends.

We made $882.0 million in capital expenditures for property and equipment, net of proceeds from disposal of assets, during the year ended December 31, 2022, and we expect to make total capital expenditures for property and equipment of $895 million in 2023, net of proceeds from disposal of assets. We intend to fund our planned 2023 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 land and solid 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.

We have a revolving credit and term loan agreement (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement") with Bank of America, N.A., acting through its Canada Branch, as the global agent, the swing line lender and a letter of credit issuer, Bank of America, N.A., as the U.S. Agent and a letter of credit issuer, the other lenders named therein (the "Lenders") and any other financial institutions from time to time party thereto. There are no subsidiary guarantors under the Credit Agreement. The Credit Agreement has a scheduled maturity date of July 30, 2026, which may be extended further upon agreement by Lenders holding at least 50% of the commitments and credit extensions outstanding, with respect to their respective commitments and credit extensions outstanding. Any Lender that does not agree to an extension of the maturity date shall not be so extended with respect to their commitments and credit extensions.

As of December 31, 2022, $650.0 million under the term loan and $614.7 million under the revolving credit facility were outstanding under the Credit Agreement, exclusive of outstanding standby letters of credit of $41.8 million. We also had $85.3 million of letters of credit issued and outstanding at December 31, 2022 under a facility other than the Credit Agreement. We did not have any amounts outstanding under our master note purchase agreements.

Pursuant to the terms and conditions of a Master Note Purchase Agreement dated as of June 1, 2016 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "2016 NPA") between us and certain accredited institutional investors, we issued senior unsecured notes (the "2016 Private Placement Notes") consisting of (i) $150.0 million of senior notes due June 1, 2021 (the "June 2021 Private Placement Notes"), (ii) $200.0 million of senior notes due June 1, 2023, (iii) $150.0 million of senior notes due April 20, 2024, (iv) $400.0 million of senior notes due June 1, 2026 and (v) $250.0 million of senior notes due April 20, 2027.

Pursuant to the terms and conditions of a Master Note Purchase Agreement dated as of July 15, 2008 (as amended, restated, amended and restated, assumed, supplemented or otherwise modified from time to time, the "2008 NPA") between us and certain accredited institutional investors, we issued senior unsecured notes (the "2008 Private Placement Notes" and together with the 2016 Private Placement Notes, the "Private Placement Notes") consisting of (i) $100.0 million of senior notes due April 1, 2021 (the "April 2021 Private Placement Notes" and together with the June 2021 Private Placement Notes, the "2021 Private Placement Notes"), (ii) $125.0 million of senior notes due August 20, 2022 and (iii) $375.0 million of senior notes due August 20, 2025.

We repaid at maturity the 2021 Private Placement Notes and repaid the other Private Placement Notes in connection with the Offering (defined below) in September 2021.

On November 16, 2018, we completed an underwritten public offering of $500.0 million aggregate principal amount of our 4.25% Senior Notes due December 1, 2028 (the "2028 Senior Notes"). The 2028 Senior Notes were issued under the Indenture, dated as of November 16, 2018 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Indenture"), by and between the Company and U.S. Bank National Association, as trustee (the "Trustee"), as supplemented through the First Supplemental Indenture, dated as of November 16, 2018.

On April 16, 2019, we completed an underwritten public offering of $500.0 million aggregate principal amount of our 3.50% Senior Notes due May 1, 2029 (the "2029 Senior Notes"). The 2029 Senior Notes were issued under the Indenture, as supplemented through the Second Supplemental Indenture, dated as of April 16, 2019.

On January 23, 2020, we completed an underwritten public offering of $600.0 million aggregate principal amount of 2.60% Senior Notes due February 1, 2030 (the "2030 Senior Notes"). The 2030 Senior Notes were issued under the Indenture, as supplemented through the Third Supplemental Indenture, dated as of January 23, 2020.

On March 13, 2020, we completed an underwritten public offering of $500.0 million aggregate principal amount of 3.05% Senior Notes due April 1, 2050 (the "2050 Senior Notes"). The 2050 Senior Notes were issued under the Indenture, as supplemented through the Fourth Supplemental Indenture, dated as of March 13, 2020.

On September 20, 2021, we completed an underwritten public offering (the "Offering") of $650.0 million aggregate principal amount of 2.20% Senior Notes due January 15, 2032 (the "2032 Senior Notes") and $850.0 million aggregate principal amount of 2.95% Senior Notes due January 15, 2052 (the "2052 Senior Notes"). The 2032 Senior Notes and the 2052 Senior Notes were issued under the Indenture, as supplemented through the Fifth Supplemental Indenture, dated as of September 20, 2021.

In connection with the Offering, we exercised our right to repay the $1.500 billion of Private Placement Notes then outstanding governed by the 2008 NPA and the 2016 NPA. We repaid the Private Placement Notes then outstanding, including the $110.6 million make-whole premium, with the net proceeds from the Offering and borrowings under the revolving credit facility provided under our Credit Agreement. We recorded $115.3 million to Loss on early extinguishment of debt during the year ended December 31, 2021 due to the repayment of the Private Placement Notes and associated make-whole premium and related fees.

On March 9, 2022, we completed an underwritten public offering of $500.0 million aggregate principal amount of 3.20% Senior Notes due June 1, 2032 (the "New 2032 Senior Notes"). The New 2032 Senior Notes were issued under the Indenture, as supplemented through the Sixth Supplemental Indenture, dated as of March 9, 2022.

On August 18, 2022, we completed an underwritten public offering of $750.0 million aggregate principal amount of 4.20% Senior Notes due January 15, 2033 (the "2033 Senior Notes" and, together with the 2028 Senior Notes, the 2029 Senior Notes, the 2030 Senior Notes, the 2032 Senior Notes, the New 2032 Senior Notes, the 2050 Senior Notes and the 2052 Senior Notes, the "Senior Notes"). The 2033 Senior Notes were issued under the Indenture, as supplemented through the Seventh Supplemental Indenture, dated as of August 18, 2022.

We pay interest on the Senior Notes semi-annually in arrears. The Senior Notes are our senior unsecured obligations, ranking equally in right of payment with our existing and future unsubordinated debt and senior to any of our future subordinated debt. The Senior Notes are not guaranteed by any of our subsidiaries.

On October 31, 2022, we, as borrower, Bank of America, N.A., as administrative agent, and the other lenders from time to time party thereto (the "New TL Lenders") entered into that certain Term Loan Agreement (as amended, restated, supplemented or otherwise modified from time to time, the "Term Loan Agreement"), pursuant to which the New TL Lenders made loans to us in an aggregate stated principal amount of $800.0 million. We used substantially all of the proceeds of borrowings under the Term Loan Agreement to repay revolving borrowings under the Credit Agreement. Amounts borrowed under the Term Loan Agreement and repaid or prepaid may not be reborrowed. The Term Loan Agreement has a scheduled maturity date of July 30, 2026.

See Note 11 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, 2022, we had the following contractual obligations:

	Payments Due by Period (amounts in thousands of U.S. dollars)				
Recorded Obligations	**Total**	**Less Than 1 Year**	**1 to 3 Years**	**3 to 5 Years**	**Over 5 Years**
Long-term debt	$ 6,963,401	$ 6,759	$ 17,748	$ 2,076,331	$ 4,862,563
Cash interest payments	$ 2,516,432	$ 256,586	$ 523,604	$ 379,935	$ 1,356,307
Contingent consideration	$ 98,781	$ 60,092	$ 3,224	$ 3,224	$ 32,241
Operating leases	$ 230,784	$ 40,499	$ 59,390	$ 41,845	$ 89,050
Final capping, closure and post-closure	$ 1,627,130	$ 11,926	$ 36,925	$ 12,945	$ 1,565,334

Long-term debt payments include:

1) $614.7 million in principal payments due July 2026 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 11). At December 31, 2022, $391.0 million of the outstanding borrowings drawn under the revolving credit facility were in U.S. Term SOFR rate loans, bearing interest at a total rate of 5.42% on such date. At December 31, 2022, $223.7 million of the outstanding borrowings drawn under the revolving credit facility were in Canadian-based bankers' acceptances, bearing interest at a total rate of 5.74% on such date.

2) $650.0 million in principal payments due July 2026 related to our term loan under our Credit Agreement. Outstanding amounts on the term loan can be either base rate loans or Term SOFR loans. At December 31, 2022, all amounts outstanding under the term loan were in Term SOFR loans which bear interest at the Term SOFR rate plus the applicable margin (for a total rate of 5.42% on such date).

3) $800.0 million in principal payments due July 2026 related to our term loan under our Term Loan Agreement. Outstanding amounts on the term loan can be either base rate loans or Term SOFR loans. At December 31, 2022, all amounts outstanding under the term loan were in Term SOFR loans which bear interest at the Term SOFR rate plus the applicable margin (for a total rate of 5.42% on such date).

4) $500.0 million in principal payments due 2028 related to our 2028 Senior Notes. The 2028 Senior Notes bear interest at a rate of 4.25%.

5) $500.0 million in principal payments due 2029 related to our 2029 Senior Notes. The 2029 Senior Notes bear interest at a rate of 3.50%.

6) $600.0 million in principal payments due 2030 related to our 2030 Senior Notes. The 2030 Senior Notes bear interest at a rate of 2.60%.

7) $650.0 million in principal payments due 2032 related to our 2032 Senior Notes. The 2032 Senior Notes bear interest at a rate of 2.20%.

8) $500.0 million in principal payments due 2032 related to our New 2032 Senior Notes. The New 2032 Senior Notes bear interest at a rate of 3.20%.

9) $750.0 million in principal payments due 2033 related to our 2033 Senior Notes. The 2033 Senior Notes bear interest at a rate of 4.20%.

10) $500.0 million in principal payments due 2050 related to our 2050 Senior Notes. The 2050 Senior Notes bear interest at a rate of 3.05%.

11) $850.0 million in principal payments due 2052 related to our 2052 Senior Notes. The 2052 Senior Notes bear interest at a rate of 2.95%.

12) $37.2 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 2.42% and 10.35% at December 31, 2022, and have maturity dates ranging from 2024 to 2036.

13) $11.5 million in principal payments related to our financing leases. Our financing leases bear interest at rates between 1.89% and 2.16% at December 31, 2022, and have expiration dates ranging from 2026 to 2027.

The following assumptions were made in calculating cash interest payments:

1) We calculated cash interest payments on the Credit Agreement using the Term SOFR rate plus the applicable Term SOFR margin, the base rate plus the applicable base rate margin, the Canadian Dollar Offered Rate plus the applicable acceptance fee and the Canadian prime rate plus the applicable prime rate margin at December 31, 2022. We assumed the Credit Agreement is paid off when it matures in July 2026.

2) We calculated cash interest payments on the Term Loan Agreement using the Term SOFR rate plus the applicable Term SOFR margin at December 31, 2022. We assumed the Term Loan Agreement is paid off when it matures in July 2026.

3) We calculated cash interest payments on our interest rate swaps using the stated interest rate in the swap agreement less the Term SOFR rate through the earlier expiration of the term of the swaps or the term of the credit facility.

Contingent consideration payments include $81.4 million recorded as liabilities in our consolidated financial statements at December 31, 2022, and $17.4 million of future interest accretion on the recorded obligations.

We are party to operating lease agreements and finance leases as discussed in Note 7 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K. These lease agreements are established in the ordinary course of our business and are designed to provide us with access to facilities and equipment at competitive, market-driven prices.

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**
Unconditional purchase obligations	$ 184,918	$ 149,858	$ 35,060	$ —	$ —

(1) We are party to unconditional purchase obligations as discussed in Note 13 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K. These purchase obligations are established in the ordinary course of our business and are designed to provide us with access to products at competitive, market-driven prices. At December 31, 2022, our unconditional purchase obligations consisted of multiple fixed-price fuel purchase contracts under which we have 57.9 million gallons remaining to be purchased for a total of $184.9 million. The current fuel purchase contracts expire on or before December 31, 2024. These arrangements have not materially affected our financial position, results of operations or liquidity during the year ended December 31, 2022, 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 11 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 13 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 waste operations. These arrangements have not materially affected our financial position, results of operations or liquidity during the year ended December 31, 2022, 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 2 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, 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, 2022, 2021 and 2020, are calculated as follows (amounts in thousands of U.S. dollars):

	Years Ended December 31,		
	2022	2021	2020
Net cash provided by operating activities	$ 2,022,492	$ 1,698,229	$ 1,408,521
Plus (less): Change in book overdraft	(1,076)	(367)	1,096
Plus: Proceeds from disposal of assets	30,676	42,768	19,084
Less: Capital expenditures for property and equipment	(912,677)	(744,315)	(597,053)
Adjustments:			
Payment of contingent consideration recorded in earnings [(a)]	2,982	520	10,371
Cash received for divestitures [(b)]	(5,671)	(17,118)	(10,673)
Transaction-related expenses [(c)]	30,825	30,771	9,803
Pre-existing Progressive Waste share-based grants [(d)]	286	397	5,770
Tax effect [(e)]	(2,993)	(1,287)	(5,021)
Adjusted free cash flow	$ 1,164,844	$ 1,009,598	$ 841,898

(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 operations.
(c) Reflects the addback of acquisition-related transaction costs and the settlement of an acquired tax liability.
(d) Reflects the cash settlement of pre-existing Progressive Waste share-based awards during the period.
(e) The aggregate tax effect of footnotes (a) through (d) 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 or minus net income (loss) attributable to noncontrolling interests, plus income tax provision, 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 loss on early extinguishment of debt. 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, 2022, 2021 and 2020, are calculated as follows (amounts in thousands of U.S. dollars):

	Years Ended December 31,		
	2022	2021	2020
Net income attributable to Waste Connections	$ 835,662	$ 618,047	$ 204,677
Plus (less): Net income (loss) attributable to noncontrolling interests	339	442	(685)
Plus: Income tax provision	212,962	152,253	49,922
Plus: Interest expense	202,331	162,796	162,375
Less: Interest income	(5,950)	(2,916)	(5,253)
Plus: Depreciation and amortization	918,960	813,009	752,404
Plus: Closure and post-closure accretion	16,253	14,497	15,095
Plus: Impairments and other operating items	18,230	32,316	466,718
Plus (less): Other expense (income), net	(3,154)	(6,285)	1,392
Plus: Loss on early extinguishment of debt	—	115,288	—
Adjustments:			
Plus: Transaction-related expenses [(a)]	24,933	11,318	9,803
Plus: Fair value changes to equity awards [(b)]	86	8,393	5,536
Adjusted EBITDA	$ 2,220,652	$ 1,919,158	$ 1,661,984

(a) Reflects the addback of acquisition-related transaction costs.
(b) Reflects fair value accounting changes associated with certain equity awards.

Adjusted Net Income Attributable to Waste Connections and Adjusted Net Income per Diluted Share Attributable to Waste Connections

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, 2022, 2021 and 2020, are calculated as follows (amounts in thousands of U.S. dollars, except per share amounts):

	Years Ended December 31,		
	2022	2021	2020
Reported net income attributable to Waste Connections	$ 835,662	$ 618,047	$ 204,677
Adjustments:			
Amortization of intangibles [(a)]	155,675	139,279	131,302
Impairments and other operating items [(b)]	18,230	32,316	466,718
Transaction-related expenses [(c)]	24,933	11,318	9,803
Fair value changes to equity awards [(d)]	86	8,393	5,536
Loss on early extinguishment of debt [(e)]	—	115,288	—
Tax effect [(f)]	(49,312)	(78,041)	(153,758)
Tax items [(g)]	—	—	31,508
Adjusted net income attributable to Waste Connections	$ 985,274	$ 846,600	$ 695,786
Diluted earnings per common share attributable to Waste Connections' common shareholders:			
Reported net income	$ 3.24	$ 2.36	$ 0.78
Adjusted net income	$ 3.82	$ 3.23	$ 2.64

(a) Reflects the elimination of the non-cash amortization of acquisition-related intangible assets.
(b) Reflects adjustments for impairments and other operating items.
(c) Reflects the addback of acquisition-related transaction costs.
(d) Reflects fair value accounting changes associated with certain equity awards.
(e) Reflects the make-whole premium and related fees associated with the early termination of $1.5 billion in senior notes.
(f) The aggregate tax effect of the adjustments in footnotes (a) through (e) is calculated based on the applied tax rates for the respective periods.
(g) In 2020, reflects the impact of a portion of our 2019 inter-entity payments no longer being deductible for tax purposes due to the finalization of tax regulations on April 7, 2020 under Internal Revenue Code Section 267A and an increase in deferred tax liabilities resulting from the E&P impairment.

Leverage Ratio

The Leverage Ratio is calculated by dividing our Consolidated Total Funded Debt by Consolidated EBITDA (each as defined substantially identically in our Credit Agreement and Term Loan Agreement). The Leverage Ratio is based on EBITDA, a non-GAAP financial measure. We present this ratio because it is used for the purposes of calculating financial covenants under our Credit Agreement and Term Loan Agreement. Management also uses this ratio as one of the principal measures to evaluate and monitor the indebtedness of the Company relative to its ability to generate income to service such debt. The Leverage Ratio is not a substitute for, and should be used in conjunction with, GAAP financial ratios. Other companies may calculate leverage ratios differently.

Inflation

In the current environment, we have seen inflationary pressures resulting from higher fuel, materials and labor costs in certain markets and higher resulting third-party costs in areas such as brokerage, repairs and construction. 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. To the extent that there are decreases in fuel costs, in some cases, a portion of these reductions are passed through to customers in the form of lower fuel and material surcharges. 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 certain of 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, prices of certain commodities and foreign currency exchange rate risks. We use hedge agreements to manage a portion of our risks related to interest rates. 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 under current market conditions. 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 variable rate debt positions.

At December 31, 2022, our derivative instruments included five 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 [(b)]	Notional Amount	Fixed Interest Rate Paid[(a)]	Variable Interest Rate Received	Effective Date	Expiration Date
August 2017	$ 200,000	2.1230 %	1-month Term SOFR	November 2022	October 2025
August 2017	$ 150,000	1.7720 %	1-month Term SOFR	November 2022	February 2023
June 2018	$ 200,000	2.8480 %	1-month Term SOFR	November 2022	October 2025
June 2018	$ 200,000	2.8284 %	1-month Term SOFR	November 2022	October 2025
December 2018	$ 200,000	2.7715 %	1-month Term SOFR	November 2022	July 2027

(a) Plus applicable margin.

(b) In October 2022, we amended the reference rate in all of our outstanding interest rate swap contracts to replace One-Month LIBOR with One-Month Term SOFR and certain credit spread adjustments. We did not record any gains or losses upon the conversion of the reference rates in these interest rate swap contracts, and we believe these amendments will not have a material impact on our consolidated financial statements.

On September 28, 2020, we terminated four of our interest rate swaps with notional amounts totaling $400.0 million, which would have expired in January 2021. As a result of terminating these interest rate swaps, we made total cash payments of $0.9 million to the counterparties of the swap agreements.

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, 2022 and 2021, of $1.115 billion and $603.9 million, respectively, including floating rate

debt under our Credit Agreement and Term Loan Agreement. A one percentage point increase in interest rates on our variable-rate debt as of December 31, 2022 and 2021, would decrease our annual pre-tax income by approximately $11.1 million and $6.0 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, 2022, we had no fuel hedge agreements in place; however, we have entered into fixed price diesel fuel purchase contracts for 2023 as described below.

For the year ending December 31, 2023, we expect to purchase approximately 89.2 million gallons of diesel fuel, of which 47.1 million gallons will be purchased at market prices and 42.1 million gallons will be purchased under our fixed price diesel 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 47.1 million gallons of unhedged diesel fuel we expect to purchase in 2023 at market prices, a $0.10 per gallon increase in the price of diesel fuel over the year would decrease our pre-tax income during this period by approximately $4.7 million.

We market a variety of recyclable materials, including compost, cardboard, mixed paper, plastic containers, glass bottles and ferrous and aluminum metals. We own and operate recycling operations and market collected recyclable materials to third parties for processing before resale. Where possible, 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 years ended December 31, 2022 and 2021, would have had a $19.7 million and $19.6 million impact on revenues for the years ended December 31, 2022 and 2021, 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 2022 or 2021. A $0.01 change in the Canadian dollar to U.S. dollar exchange rate would impact our annual revenue and EBITDA by approximately $13.0 million and $5.0 million, respectively.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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WASTE CONNECTIONS, INC.

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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, 2022 and 2021, the related consolidated statements of net income, comprehensive income, equity, and cash flows for each of the three years in the period ended December 31, 2022, 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, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, 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, 2022, 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 16, 2023 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 regarding 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.

Critical audit matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Landfill Accounting

As described further in Note 3 to the consolidated financial statements, 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 future date of the expenditures and discounting the inflated total to its present value using a credit-adjusted risk-free rate.

The principal consideration for our determination that landfill accounting represents a critical audit matter is the judgments and estimates associated with management's determination of the liability due to the nature of the inputs and significant assumptions used in the process including the discount rate, inflation rate, accretion rate, survey data, acreage information, estimated permitted airspace, estimated deemed airspace, and remaining airspace and probability of landfill expansions, all of which can have a significant impact on the calculation of the final capping, closure and post-closure liability. Auditing the net present value of the obligation involved a high degree of subjectivity, auditor judgment and effort in evaluating management's assumptions primarily due to the complexity of the models used to measure the landfill liability, as well as the sensitivity of the underlying significant assumptions.

Our audit procedures related to the accounting for the final capping, closure and post-closure liability included the following, among others:

- We tested the design and operating effectiveness of key controls related to landfill accounting, including controls relating to management's development of discount rate, inflation rate, accretion rates, survey data, acreage information, estimated permitted airspace, estimated deemed airspace, remaining airspace, and probability of landfill expansions;
- We assessed the qualifications and competence of management and the third-party specialists used to provide the inputs used in developing the models;
- We tested key inputs such as discount rate, inflation rate, accretion rate, survey data, acreage information, estimated permitted airspace, estimated deemed airspace, remaining airspace, and probability of landfill expansions;
- We tested mathematical accuracy of the calculations in a sample of the models;
- We obtained and reviewed the associated permits for a sample of landfill models to further validate certain inputs used in the models;
- We compared previously deemed expansion amounts to the subsequent actual permitted amounts;
- We obtained and reviewed supporting documentation to support management's criteria for deemed expansions.
- We evaluated the fair value allocation of assumed liabilities for landfills acquired in business combinations.

Valuation of intangible assets in business combinations

As described further in Note 8 to the consolidated financial statements, the Company acquired 24 businesses during 2022. These transactions were accounted for as business combinations in accordance with ASC 805, *Business Combinations.*

The principal consideration for our determination that the accounting for these acquisitions represents a critical audit matter, is the judgments and assumptions associated with management's determination of the fair value of intangible assets acquired, including fair value determinations related to recycling and transfer station permits, residential and commercial customer lists, and long-term contracts, all of which are recorded as intangible assets. Auditing the fair value of these assets involved a high degree of subjectivity, auditor judgment and effort in evaluating management's significant assumptions, primarily due to the complexity of the valuation models used to measure the fair value of the aforementioned intangible assets, as well as the sensitivity of the underlying significant assumptions. The Company used a discounted cash flow model to estimate the fair values of the intangible assets, which included assumptions such as discount rate, revenue growth rates, operating expenses, earnings before interest, taxes, depreciation and amortization ("EBITDA") margins, capital expenditures, customer turnover rates, and contributory asset charges (as applicable) that form the basis of the forecasted results. These significant assumptions are forward-looking and could be affected by future economic and market conditions.

The audit procedures related to the accounting for the acquisitions included the following, among others:

- We tested the design and operating effectiveness of key controls related to the accounting for the 2022 acquisitions, including controls relating to management's development of forecasts for discount rates, revenue growth rates, operating expenses, EBITDA margins, capital expenditures, customer turnover rates and contributory asset charges;
- We obtained certain of the purchase price allocation analyses from management. We assessed the qualifications and competence of management and evaluated the methodologies used to determine the fair value of the intangible assets;
- We tested the assumptions used within the discounted cash-flow models to estimate the fair value of the intangible assets which included assumptions such as discount rate, revenue growth rate, operating expenses, EBITDA margin, capital expenditures, customer turnover rate and contributory asset charges;
- We tested the Company's ability to forecast future cash flows for acquired businesses by reviewing actual results in the first year after being acquired compared to amounts forecasted when the fair values of acquired assets and liabilities were determined.
- We utilized an internal valuation specialist to assist the engagement team in evaluating: the methodologies used and whether they were acceptable for the underlying acquisitions and whether such methodologies were being applied correctly, the appropriateness of the discount rate used by performing a sensitivity analysis, and the qualifications of the valuation specialist engaged by the Company based on their credentials and experience.
- We applied analytical procedures to the range of significant inputs utilized across all of the business combinations to evaluate consistency of significant inputs among intangible asset valuation models.

/s/ GRANT THORNTON LLP

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

Houston, Texas
February 16, 2023

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, 2022, 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, 2022, 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, 2022, and our report dated February 16, 2023 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 16, 2023

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

	December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and equivalents	$ 78,637	$ 147,441
Accounts receivable, net of allowance for credit losses of $22,939 and $18,480 at December 31, 2022 and 2021, respectively	833,862	709,614
Prepaid expenses and other current assets	205,146	175,722
Total current assets	1,117,645	1,032,777
Restricted cash	102,727	72,174
Restricted investments	68,099	59,014
Property and equipment, net	6,950,915	5,721,949
Operating lease right-of-use assets	192,506	160,567
Goodwill	6,902,297	6,187,643
Intangible assets, net	1,673,917	1,350,597
Other assets, net	126,497	115,203
Total assets	$ 17,134,603	$ 14,699,924
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 638,728	$ 392,868
Book overdraft	15,645	16,721
Deferred revenue	325,002	273,720
Accrued liabilities	431,247	442,596
Current portion of operating lease liabilities	35,170	38,017
Current portion of contingent consideration	60,092	62,804
Current portion of long-term debt and notes payable	6,759	6,020
Total current liabilities	1,512,643	1,232,746
Long-term portion of debt and notes payable	6,890,149	5,040,500
Long-term portion of operating lease liabilities	165,462	129,628
Long-term portion of contingent consideration	21,323	31,504
Deferred income taxes	1,013,742	850,921
Other long-term liabilities	417,640	421,080
Total liabilities	10,020,959	7,706,379
Commitments and contingencies (Note 13)		
Equity:		
Common shares: 257,211,175 shares issued and 257,145,716 shares outstanding at December 31, 2022; 260,283,158 shares issued and 260,212,496 shares outstanding at December 31, 2021	3,271,958	3,693,027
Additional paid-in capital	244,076	199,482
Accumulated other comprehensive income (loss)	(56,830)	39,584
Treasury shares: 65,459 and 70,662 shares at December 31, 2022 and 2021, respectively	—	—
Retained earnings	3,649,494	3,056,845
Total Waste Connections' equity	7,108,698	6,988,938
Noncontrolling interest in subsidiaries	4,946	4,607
Total equity	7,113,644	6,993,545
Total liabilities and equity	$ 17,134,603	$ 14,699,924

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,		
	2022	2021	2020
Revenues	$ 7,211,859	$ 6,151,361	$ 5,445,990
Operating expenses:			
Cost of operations	4,336,012	3,654,074	3,276,808
Selling, general and administrative	696,467	612,337	537,632
Depreciation	763,285	673,730	621,102
Amortization of intangibles	155,675	139,279	131,302
Impairments and other operating items	18,230	32,316	466,718
Operating income	1,242,190	1,039,625	412,428
Interest expense	(202,331)	(162,796)	(162,375)
Interest income	5,950	2,916	5,253
Other income (expense), net	3,154	6,285	(1,392)
Loss on early extinguishment of debt	—	(115,288)	—
Income before income tax provision	1,048,963	770,742	253,914
Income tax provision	(212,962)	(152,253)	(49,922)
Net income	836,001	618,489	203,992
Plus (less): Net loss (income) attributable to noncontrolling interests	(339)	(442)	685
Net income attributable to Waste Connections	$ 835,662	$ 618,047	$ 204,677
Earnings per common share attributable to Waste Connections' common shareholders:			
Basic	$ 3.25	$ 2.37	$ 0.78
Diluted	$ 3.24	$ 2.36	$ 0.78
Shares used in the per share calculations:			
Basic	257,383,578	261,166,723	263,189,699
Diluted	258,038,801	261,728,470	263,687,539
Cash dividends per common share	$ 0.945	$ 0.845	$ 0.760

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,		
	2022	2021	2020
Net income	$ 836,001	$ 618,489	$ 203,992
Other comprehensive income (loss), before tax:			
Interest rate swap amounts reclassified into interest expense	6,551	20,321	9,778
Changes in fair value of interest rate swaps	76,336	23,287	(64,664)
Foreign currency translation adjustment	(157,336)	8,183	50,653
Other comprehensive income (loss), before tax	(74,449)	51,791	(4,233)
Income tax (expense) benefit related to items of other comprehensive income (loss)	(21,965)	(11,556)	14,545
Other comprehensive income (loss), net of tax	(96,414)	40,235	10,312
Comprehensive income	739,587	658,724	214,304
Plus (less): Comprehensive loss (income) attributable to noncontrolling interests	(339)	(442)	685
Comprehensive income attributable to Waste Connections	$ 739,248	$ 658,282	$ 214,989

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

WASTE CONNECTIONS, INC.
CONSOLIDATED STATEMENTS OF EQUITY
YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022
(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, 2019	263,618,161	$ 4,135,343	$ 154,917	$ (10,963)	81,514	$ —	$ 2,654,207	$ 4,850	$ 6,938,354
Sale of common shares held in trust	7,330	679	—	—	(7,330)	—	—	—	679
Vesting of restricted share units	377,006	—	—	—	—	—	—	—	—
Vesting of performance-based restricted share units	281,186	—	—	—	—	—	—	—	—
Restricted share units released from deferred compensation plan	23,857	—	—	—	—	—	—	—	—
Fair value adjustment for common shares in deferred compensation plan exchanged for other investment options	—	—	(678)	—	—	—	—	—	(678)
Tax withholdings related to net share settlements of equity-based compensation	(230,698)	—	(23,446)	—	—	—	—	—	(23,446)
Equity-based compensation	—	—	39,762	—	—	—	—	—	39,762
Exercise of warrants	20,125	—	—	—	—	—	—	—	—
Repurchase of common shares	(1,271,977)	(105,654)	—	—	—	—	—	—	(105,654)
Cash dividends on common shares	—	—	—	—	—	—	(199,883)	—	(199,883)
Amounts reclassified into earnings, net of taxes	—	—	—	7,187	—	—	—	—	7,187
Changes in fair value of cash flow hedges, net of taxes	—	—	—	(47,528)	—	—	—	—	(47,528)
Foreign currency translation adjustment	—	—	—	50,653	—	—	—	—	50,653
Net income (loss)	—	—	—	—	—	—	204,677	(685)	203,992
Balances at December 31, 2020	262,824,990	4,030,368	170,555	(651)	74,184	—	2,659,001	4,165	6,863,438
Sale of common shares held in trust	3,522	430	—	—	(3,522)	—	—	—	430
Vesting of restricted share units	343,480	—	—	—	—	—	—	—	—
Vesting of performance-based restricted share units	154,251	—	—	—	—	—	—	—	—
Restricted share units released from deferred compensation plan	19,510	—	—	—	—	—	—	—	—
Fair value adjustment for common shares in deferred compensation plan exchanged for other investment options	—	—	(1,177)	—	—	—	—	—	(1,177)
Tax withholdings related to net share settlements of equity-based compensation	(186,978)	—	(18,606)	—	—	—	—	—	(18,606)
Equity-based compensation	—	—	48,710	—	—	—	—	—	48,710
Exercise of warrants	46,730	—	—	—	—	—	—	—	—
Issuance of shares under employee share purchase plan	10,813	1,222	—	—	—	—	—	—	1,222
Repurchase of common shares	(3,003,822)	(338,993)	—	—	—	—	—	—	(338,993)
Cash dividends on common shares	—	—	—	—	—	—	(220,203)	—	(220,203)
Amounts reclassified into earnings, net of taxes	—	—	—	14,936	—	—	—	—	14,936
Changes in fair value of cash flow hedges, net of taxes	—	—	—	17,116	—	—	—	—	17,116
Foreign currency translation adjustment	—	—	—	8,183	—	—	—	—	8,183
Net income	—	—	—	—	—	—	618,047	442	618,489
Balances at December 31, 2021	260,212,496	$ 3,693,027	$ 199,482	$ 39,584	70,662	$ —	$ 3,056,845	$ 4,607	$ 6,993,545

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

WASTE CONNECTIONS, INC.
CONSOLIDATED STATEMENTS OF EQUITY
YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022
(IN THOUSANDS OF U.S. DOLLARS, EXCEPT SHARE AMOUNTS)

	WASTE CONNECTIONS' EQUITY								
	COMMON SHARES		ADDITIONAL PAID-IN CAPITAL	ACCUMULATED OTHER COMPREHENSIVE INCOME	TREASURY SHARES		RETAINED EARNINGS	NONCONTROLLING INTERESTS	TOTAL
	SHARES	AMOUNT			SHARES	AMOUNT			
Balances at December 31, 2021	260,212,496	$ 3,693,027	$ 199,482	$ 39,584	70,662	$ —	$ 3,056,845	$ 4,607	$ 6,993,545
Sale of common shares held in trust	5,203	660	—	—	(5,203)	—	—	—	660
Vesting of restricted share units	318,851	—	—	—	—	—	—	—	—
Vesting of performance-based restricted share units	57,677	—	—	—	—	—	—	—	—
Restricted share units released from deferred compensation plan	19,509	—	—	—	—	—	—	—	—
Tax withholdings related to net share settlements of equity-based compensation	(210,700)	—	(18,358)	—	—	—	—	—	(18,358)
Equity-based compensation	—	—	62,952	—	—	—	—	—	62,952
Exercise of warrants	104,253	—	—	—	—	—	—	—	—
Issuance of shares under employee share purchase plan	26,582	3,270	—	—	—	—	—	—	3,270
Repurchase of common shares	(3,388,155)	(424,999)	—	—	—	—	—	—	(424,999)
Cash dividends on common shares	—	—	—	—	—	—	(243,013)	—	(243,013)
Amounts reclassified into earnings, net of taxes	—	—	—	4,815	—	—	—	—	4,815
Changes in fair value of cash flow hedges, net of taxes	—	—	—	56,107	—	—	—	—	56,107
Foreign currency translation adjustment	—	—	—	(157,336)	—	—	—	—	(157,336)
Net income	—	—	—	—	—	—	835,662	339	836,001
Balances at December 31, 2022	257,145,716	$ 3,271,958	$ 244,076	$ (56,830)	65,459	$ —	$ 3,649,494	$ 4,946	$ 7,113,644

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,		
	2022	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	$ 836,001	$ 618,489	$ 203,992
Adjustments to reconcile net income to net cash provided by operating activities:			
Loss on disposal of assets and impairments	9,519	27,727	445,647
Depreciation	763,285	673,730	621,102
Amortization of intangibles	155,675	139,279	131,302
Loss on early extinguishment of debt	—	115,288	—
Deferred income taxes, net of acquisitions	93,481	14,563	(50,487)
Current period provision for expected credit losses	17,353	9,719	15,509
Amortization of debt issuance costs	5,454	5,055	7,509
Share-based compensation	63,485	58,221	45,751
Interest accretion	17,668	15,970	17,205
Payment of contingent consideration recorded in earnings	(2,982)	(520)	(10,371)
Adjustments to contingent consideration	(1,030)	2,954	18,418
Other	(8,217)	(1,260)	2,426
Changes in operating assets and liabilities, net of effects from acquisitions:			
Accounts receivable, net	(100,546)	(54,688)	31,332
Prepaid expenses and other current assets	(752)	(8,229)	(17,749)
Accounts payable	192,850	66,752	(148,362)
Deferred revenue	42,252	31,707	14,981
Accrued liabilities	(28,082)	3,853	88,612
Capping, closure and post-closure expenditures	(18,881)	(21,040)	(6,484)
Other long-term liabilities	(14,041)	659	(1,812)
Net cash provided by operating activities	2,022,492	1,698,229	1,408,521
CASH FLOWS FROM INVESTING ACTIVITIES:			
Payments for acquisitions, net of cash acquired	(2,206,901)	(960,449)	(388,789)
Capital expenditures for property and equipment	(912,677)	(744,315)	(597,053)
Capital expenditures for undeveloped landfill property	—	—	(67,508)
Investment in noncontrolling interests	—	(25,000)	—
Proceeds from disposal of assets	30,676	42,768	19,084
Other	1,731	(6,486)	(11,777)
Net cash used in investing activities	(3,087,171)	(1,693,482)	(1,046,043)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from long-term debt	4,816,146	2,112,193	1,815,625
Principal payments on notes payable and long-term debt	(3,073,985)	(1,893,100)	(1,542,958)
Premiums paid on early extinguishment of debt	—	(110,617)	—
Payment of contingent consideration recorded at acquisition date	(16,911)	(12,934)	(12,566)
Change in book overdraft	(1,076)	(367)	1,096
Payments for repurchase of common shares	(424,999)	(338,993)	(105,654)
Payments for cash dividends	(243,013)	(220,203)	(199,883)
Tax withholdings related to net share settlements of equity-based compensation	(18,358)	(18,606)	(23,446)
Debt issuance costs	(13,271)	(18,521)	(11,117)
Proceeds from issuance of shares under employee share purchase plan	3,270	1,222	—
Proceeds from sale of common shares held in trust	660	430	679
Net cash provided by (used in) financing activities	1,028,463	(499,496)	(78,224)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(2,035)	(25)	6,914
Net increase (decrease) in cash, cash equivalents and restricted cash	(38,251)	(494,774)	291,168
Cash, cash equivalents and restricted cash at beginning of year	219,615	714,389	423,221
Cash, cash equivalents and restricted cash at end of year	$ 181,364	$ 219,615	$ 714,389

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,		
	2022	**2021**	**2020**
Cash paid for income taxes	$ 100,156	$ 146,198	$ 104,618
Cash paid for interest	$ 177,424	$ 157,485	$ 142,310
Changes in accrued capital expenditures for property and equipment	$ 36,671	$ 22,153	$ (10,940)
In connection with its acquisitions, the Company assumed liabilities as follows:			
Fair value of assets acquired	$ 2,471,202	$ 1,230,396	$ 514,234
Cash paid for current year acquisitions	(2,206,901)	(960,449)	(388,789)
Change in open working capital settlements at year end	—	—	(1,505)
Liabilities assumed and notes payable issued to sellers of businesses acquired	$ 264,301	$ 269,947	$ 123,940

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

1. BUSINESS

The financial statements presented in this report represent the consolidation of Waste Connections, Inc., a corporation organized under the laws of Ontario, Canada, and its wholly-owned and majority-owned subsidiaries. When the terms the "Company" or "Waste Connections" are used in this document, those terms refer to Waste Connections, Inc. and its consolidated subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

The Company is an integrated solid waste services company that provides non-hazardous waste collection, transfer and disposal services, along with resource recovery primarily through recycling and renewable fuels generation, in mostly exclusive and secondary markets in the U.S. and Canada. Waste Connections also provides non-hazardous oil and natural gas exploration and production ("E&P") waste treatment, recovery and disposal services in several basins across the U.S., as well as intermodal services for the movement of cargo and solid waste containers in the Pacific Northwest.

2. NEW ACCOUNTING STANDARDS

Accounting Standards Adopted

Reference Rate Reform – Facilitation of the Effects of Reference Rate Reform on Financial Reporting. In March 2020, the Financial Accounting Standards Board ("FASB") issued guidance to provide temporary optional expedients and exceptions to the guidance in GAAP on contract modifications and hedge accounting to ease the financial reporting burdens related to the expected market transition from the London Interbank Offered Rate ("LIBOR") and other interbank offered rates to alternative reference rates, such as the Secured Overnight Financing Rate ("SOFR"). One-week and two-month U.S. dollar LIBOR settings as well as all non-U.S. dollar LIBOR settings stopped being published on December 31, 2021, while the remaining U.S. dollar LIBOR settings will be discontinued on June 30, 2023. Under the new guidance, entities can elect not to apply certain modification accounting requirements to contracts affected by reference rate reform, if certain criteria are met. An entity that makes this election would not have to remeasure the contracts at the modification date or reassess a previous accounting determination. Under the guidance, entities can also elect various optional expedients that would allow them to continue applying hedge accounting for hedging relationships affected by reference rate reform, if certain criteria are met.

The guidance was effective upon issuance. The guidance on contract modifications was applied prospectively from March 12, 2020. The guidance on hedging is applied to eligible hedging relationships existing as of the beginning of the interim period that includes the effective date and to new eligible hedging relationships entered into after the beginning of that interim period. The relief is temporary and generally cannot be applied to contract modifications that occur after December 31, 2024 or hedging relationships entered into or evaluated after that date. However, certain optional expedients can be applied to hedging relationships evaluated in periods after December 31, 2024.

In October 2022, the Company adopted the applicable practical expedients of the standard when it converted the option of a LIBOR interest rate in its Credit Agreement to a SOFR interest rate and correspondingly amended its five interest rate swap agreements that are specifically designated to the amended Credit Agreement. As permitted by the practical expedients in the standard, the Company maintained cash flow hedge accounting for its interest rate swap agreements as the conversion of the LIBOR interest rate to SOFR was the only modification to the interest rate swap agreements. The Company determined that the new guidance did not have a material effect on its consolidated financial statements. See Note 11 for further details on the amendment to the Credit Agreement.

Accounting Standards Pending Adoption

Clawback of Executive Compensation Rules. In October 2022, the Securities and Exchange Commission (the "SEC") adopted final rules regarding the recovery of erroneously awarded incentive-based executive compensation. The rules direct U.S. securities exchanges to establish standards to require listed issuers to develop and implement a written policy

providing for the recovery of incentive-based compensation received by current and former executive officers in the event of a required accounting restatement when that compensation was based on an erroneously reported financial reporting measure. The new rule and related amendments include a number of new disclosure requirements, including requiring issuers to file their recovery policy as an exhibit to their annual reports and establishing new cover page disclosures on Form 10-K indicating whether the financial statements included in the filing reflect the correction of an error and whether the error correction required an incentive-based compensation recovery analysis. The exchanges must file proposed listing standards to implement the SEC's directive no later than February 26, 2023 (which is 90 days after the final rules were published in the Federal Register), and those listing standards must be effective no later than November 28, 2023. Affected issuers will be required to adopt a recovery policy no later than 60 days after the listing standards become effective.

3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

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, 2022 and 2021, cash equivalents consisted of demand money market accounts.

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 credit 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, E&P services, and intermodal services. The following table disaggregates the Company's revenues by service line for the periods indicated:

	Years Ended December 31,		
	2022	2021	2020
Commercial	$ 2,176,295	$ 1,813,426	$ 1,610,313
Residential	1,891,108	1,673,819	1,528,217
Industrial and construction roll off	1,183,624	954,181	833,148
Total collection	5,251,027	4,441,426	3,971,678
Landfill	1,328,942	1,233,499	1,146,732
Transfer	1,026,050	859,113	777,754
Recycling	204,876	205,076	86,389
E&P	210,562	138,707	159,438
Intermodal and other	188,471	152,194	118,396
Intercompany	(998,069)	(878,654)	(814,397)
Total	$ 7,211,859	$ 6,151,361	$ 5,445,990

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 17 for additional information regarding revenue by reportable segment.

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 recorded as of September 30, 2022 was recognized as revenue during the three months ended December 31, 2022 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 result from the sale of recycled commodities, which 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 and operates recycling operations and markets collected recyclable materials to third parties for processing before resale. In some instances, the Company utilizes a third party to market recycled materials. 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 waste 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. Revenue recognized under these agreements is variable in nature based on the volume of waste accepted or processed during the period.

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 and renewable energy credits generated from the Company's MSW landfills.

Revenue Recognition

Service obligations of a long-term nature, such as solid waste collection service contracts, are satisfied over time, and revenue is recognized based on the value provided to the customer during the period. In many of our markets, solid waste collection service contracts exist as exclusive franchise agreements or municipal contracts. 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. Such contracts are generally within the Company's collection, recycling and other lines of business and have a weighted average remaining contract life of approximately four years, excluding certain exclusive and perpetual agreements, such as governmental certificates. 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 credit losses, represents their estimated net realizable value.

The allowance for credit losses is based on management's assessment of the collectability of assets pooled together with similar risk characteristics. The Company monitors the collectability of its trade receivables as one overall pool due to all trade receivables having similar risk characteristics. The Company estimates its allowance for credit losses based on historical collection trends, the age of outstanding receivables, geographical location of the customer, existing economic conditions and reasonable forecasts. 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.

The following is a rollforward of the Company's allowance for credit losses for the periods indicated:

	Years Ended December 31,	
	2022	2021
Beginning balance	$ 18,480	$ 19,380
Current period provision for expected credit losses	17,353	9,719
Write-offs charged against the allowance	(18,273)	(15,545)
Recoveries collected	5,473	4,918
Impact of changes in foreign currency	(94)	8
Ending balance	$ 22,939	$ 18,480

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 recognizes the incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset that the

Company would have recognized is one year or less. The Company had $23,818 and $18,954 of deferred sales incentives at December 31, 2022 and 2021, respectively. During the years ended December 31, 2022, 2021 and 2020, the Company recorded a total of $22,675, $23,671 and $17,138, respectively, of sales incentive amortization expense for deferred sales incentives and sales incentive expense for contracts with original terms of less than one year.

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.

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	3 – 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 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 layers for final capping, closure and post-closure liabilities is based on its long-term credit adjusted risk-free rate. The Company's discount rate assumption for purposes of computing 2022 and 2021 "layers" for final capping, closure and post-closure obligations ranged from 3.25% to 5.50% for 2022 and was 3.25% for 2021. The Company's long-term inflation rate assumption ranged from 2.25% to 2.75% for 2022 and was 2.25% for 2021.

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 329 years, with approximately 90% of the projected annual disposal volume from landfills with remaining lives of less than 70 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, 2020 to December 31, 2022:

Final capping, closure and post-closure liability at December 31, 2020	$ 301,896
Liability adjustments	(1,081)
Accretion expense associated with landfill obligations	14,333
Closure payments	(21,040)
Assumption of closure liabilities from acquisitions	11,380
Disposition of closure liabilities from divested operations	(3,566)
Foreign currency translation adjustment	615
Final capping, closure and post-closure liability at December 31, 2021	302,537
Liability adjustments	39,321
Accretion expense associated with landfill obligations	16,068
Closure payments	(18,834)
Assumption of closure liabilities from acquisitions	8,575
Disposition of closure liabilities from divested operations	(916)
Foreign currency translation adjustment	(2,145)
Final capping, closure and post-closure liability at December 31, 2022	$ 344,606

Liability adjustments of $39,321 and $1,081 for the years ended December 31, 2022 and 2021, respectively, represent non-cash changes to final capping, closure and post-closure liabilities and are recorded on the Consolidated Balance Sheets along with an offsetting addition to site costs, which is amortized to depletion expense as the remaining landfill airspace is consumed. 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.

- 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.

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 the 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.

- 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 over the expected term of the related agreements (ranging from 1 to 56 years). The Company uses an accelerated or straight line basis for amortization, depending on the attributes of the related intangibles.

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. 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 a segment; or
- current period or expected future operating cash flow losses.

As part of the Company's goodwill impairment test, the Company estimates the fair value of each of its reporting units using discounted cash flow analyses. The Company's reporting units consisted of its five geographic solid waste operating segments at December 31, 2022, 2021 and 2020. 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. In testing indefinite-lived intangible assets for impairment, the Company compares 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 the Company's Consolidated Statements of Net Income.

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, 2022, 2021 and 2020 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, growth rates and income tax rates. The cash flows employed in the Company's 2022 discounted cash flow analyses were based on ten-year financial forecasts, which in turn were based on the 2023 annual budget developed internally by management. These forecasts reflect operating profit margins that were consistent with 2022 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 7.9%. 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 any of its five geographic operating segments as a result of its annual goodwill impairment tests for the years ended December 31, 2022, 2021 or 2020. During the fourth quarter of 2021, the Company recorded an impairment charge of $2,277, which is included in Impairments and other operating items in the Consolidated Statements of Net Income, on certain indefinite-lived intangible assets at two of its E&P sites in its Southern segment. The Company did not record an impairment charge to any of its five geographic operating segments as a result of its indefinite-lived intangible assets impairment tests for the years ended December 31, 2022 or 2020.

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.

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, 2022, the Company did not record any significant impairment charges for finite-lived intangible assets or property and equipment. During the year ended December 31, 2021, the Company recorded a $16,379 impairment charge, which is included in Impairments and other operating items in the Consolidated Statements of Net Income, for property and equipment and finite-lived intangible assets at three of its E&P waste sites in its Southern segment.

The demand for the Company's 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. Macroeconomic and geopolitical conditions, including a significant decline in oil prices occurring in 2020 driven by both surplus production and supply, as well as the decrease in demand caused by factors including the COVID-19 pandemic, resulted in decreased levels of oil and natural gas exploration and production activity and a corresponding decrease in demand for the Company's E&P waste services in 2020. During the year ended December 31, 2020, total E&P waste revenue declined $112,114, compared to the prior year period, on rig count declines of 56% in certain basins. The most impacted basins include the Williston Basin in North Dakota, the Eagle Ford Basin in Texas and the Powder River Basin in Wyoming, all of which have relatively high costs associated with drilling, making them less attractive than other basins, including the Permian Basin in Texas and New Mexico. Additionally, across the industry there was uncertainty regarding future demand for oil and related services, as noted by several energy companies during 2020, many of whom are customers of the Company's E&P waste services. These energy companies wrote down the values of their oil and gas assets in anticipation of the potential for the decarbonization of their energy product mix given an increased global focus on reducing greenhouse gases and addressing climate change. Such uncertainty regarding global demand had a significant impact on the investment and operating plans of the Company's E&P waste customers in the basins where the Company operates.

The decrease in E&P activity, together with market expectations of a likely slow recovery in oil prices, reduced the expected future period cash flows of the Company's E&P waste services. Based on these events, the Company concluded that a triggering event occurred which required the Company to perform an impairment test of the property and equipment and intangible assets of its E&P waste services as of June 30, 2020 using July 2020 industry projections for drilling activity by basin as the basis for expectations about future activity. Based upon the results of the impairment test, the Company concluded that the carrying value exceeded the projected undiscounted cash flows of four E&P waste landfills. The next step was to calculate the fair value of these four landfills using an income approach employing a discounted cash flow ("DCF") model over the lesser of 40 years or the remaining life of each landfill. Additional key assumptions used in the DCF model included a discount rate of 12% applied to the cash flows, annual revenue projections based on E&P waste resulting from projected levels of oil and natural gas E&P activity during the forecast period at each location, gross margins based on estimated operating expense requirements during the forecast period, estimated capital expenditures over the

forecast period and income taxes based on the estimated federal and state income tax rates applicable during the cash flow periods, all of which were classified as Level 3 in the fair value hierarchy. For each of the four landfills, the carrying value exceeded the calculated discounted fair value, resulting in the recording of an impairment charge of $417,384 to Impairments and other operating items in the Consolidated Statements of Net Income during the year ended December 31, 2020. The four landfills had $0 of intangible assets at June 30, 2020; therefore, no impairment charge was attributable to intangible assets. The impairment charge reduced the carrying value of property and equipment by $417,384. If the estimated annual cash flows in the DCF model for each asset or asset group tested was changed by 10%, the resulting impairment charge would change by approximately $3,000.

The aforementioned impairment charges were partially offset by a $4,145 adjustment, also recorded during the year ended December 31, 2020, to reduce the fair value of a liability-classified contingent consideration arrangement calculated on future earnings and cash flows associated with the acquisition of an E&P business in 2014.

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

Restricted cash and restricted investments consist of the following:

	December 31, 2022		December 31, 2021	
	Restricted Cash	Restricted Investments	Restricted Cash	Restricted Investments
Settlement of insurance claims	$ 88,360	$ —	$ 52,906	$ —
Landfill closure and post-closure obligations	6,890	57,469	12,609	56,289
Other financial assurance requirements	7,477	10,630	6,659	2,725
	$ 102,727	$ 68,099	$ 72,174	$ 59,014

See Note 12 for further information on restricted cash and restricted investments.

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 and interest rate swaps. As of December 31, 2022 and 2021, 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, 2022 and 2021, 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, 2022 and 2021, are as follows:

	Carrying Value at		Fair Value [(a)] at	
	December 31, 2022	December 31, 2021	December 31, 2022	December 31, 2021
4.25% Senior Notes due 2028	$ 500,000	$ 500,000	$ 470,850	$ 561,350
3.50% Senior Notes due 2029	$ 500,000	$ 500,000	$ 457,650	$ 539,500
2.60% Senior Notes due 2030	$ 600,000	$ 600,000	$ 510,540	$ 610,440
2.20% Senior Notes due 2032	$ 650,000	$ 650,000	$ 514,540	$ 637,065
3.20% Senior Notes due 2032	$ 500,000	$ —	$ 429,000	$ —
4.20% Senior Notes due 2033	$ 750,000	$ —	$ 699,450	$ —
3.05% Senior Notes due 2050	$ 500,000	$ 500,000	$ 343,300	$ 496,350
2.95% Senior Notes due 2052	$ 850,000	$ 850,000	$ 561,425	$ 828,580

(a) Senior Notes are classified as Level 2 within the fair value hierarchy. Fair value inputs include third-party calculations of the market interest rate of notes with similar ratings in similar industries over the remaining note terms.

For details on the fair value of the Company's interest rate swaps, restricted cash and investments and contingent consideration, see Note 12.

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 gain or loss on the derivatives will be recognized in accumulated other comprehensive income (loss) ("AOCIL") and reclassified into earnings in the same period during which the hedged transaction affects earnings and is presented in the same income statement line item as the earnings effect of the hedged item. 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, 2022 were specifically designated to the Credit Agreement and accounted for as cash flow hedges.

At December 31, 2022, the Company's derivative instruments included five interest rate swap agreements as follows:

Date Entered [b]	Notional Amount	Fixed Interest Rate Paid [a]	Variable Interest Rate Received	Effective Date	Expiration Date
August 2017	$ 200,000	2.1230 %	1-month Term SOFR	November 2022	October 2025
August 2017	$ 150,000	1.7720 %	1-month Term SOFR	November 2022	February 2023
June 2018	$ 200,000	2.8480 %	1-month Term SOFR	November 2022	October 2025
June 2018	$ 200,000	2.8284 %	1-month Term SOFR	November 2022	October 2025
December 2018	$ 200,000	2.7715 %	1-month Term SOFR	November 2022	July 2027

(a) Plus applicable margin.
(b) In October 2022, the Company amended the reference rate in all of its outstanding interest rate swap contracts to replace One-Month LIBOR with One-Month Term SOFR and certain credit spread adjustments. The Company did not record any gains or losses upon the conversion of the reference rates in these interest rate swap contracts, and the Company believes these amendments will not have a material impact on its Consolidated Financial Statements.

On September 28, 2020, the Company terminated four of its interest rate swaps with notional amounts totaling $400,000, which would have expired in January 2021. As a result of terminating these interest rate swaps, the Company made total cash payments of $853 to the counterparties of the swap agreements.

The fair values of derivative instruments designated as cash flow hedges as of December 31, 2022, 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[a]	$ 17,906	Accrued liabilities	$ —
	Other assets, net	13,901		
Total derivatives designated as cash flow hedges		$ 31,807		$ —

(a) Represents the estimated amount of the existing unrealized gains on interest rate swaps as of December 31, 2022 (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.

The fair values of derivative instruments designated as cash flow hedges as of December 31, 2021, 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	$ —	Accrued liabilities	$ (18,675)
			Other long-term liabilities	(32,406)
Total derivatives designated as cash flow hedges		$ —		$ (51,081)

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, 2022, 2021 and 2020:

Derivatives Designated as Cash Flow Hedges	Amount of Gain or (Loss) Recognized as AOCIL on Derivatives, Net of Tax [a]			Statement of Net Income Classification	Amount of (Gain) or Loss Reclassified from AOCIL into Earnings, Net of Tax [b]		
	Years Ended December 31,				Years Ended December 31,		
	2022	2021	2020		2022	2021	2020
Interest rate swaps	$ 56,107	$ 17,116	$ (47,528)	Interest expense	$ 4,815	$ 14,936	$ 7,187

(a) In accordance with the derivatives and hedging guidance, the changes in fair values of interest rate swaps 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, all unrealized changes in fair value are recorded in AOCIL.

(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.

See Note 15 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.

Share-Based Compensation

Under the 2020 Employee Share Purchase Plan (the "ESPP"), participants will be granted an option to purchase Company common shares on the first business day of each offering period, with such option to be automatically exercised on the last business day of such offering period to purchase a whole number of the Company's common shares determined by dividing the accumulated payroll deductions in the participant's notional account on such exercise date by the applicable exercise price. The exercise price is equal to 95% of the closing price of the Company's common shares on the last day of the relevant offering period; provided, however, that such exercise price will not be less than 85% of the volume weighted average price of the Company's common shares as reflected on the Toronto Stock Exchange (the "TSX") over the final five trading days of the offering period.

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, 2022, 2021 and 2020, was $63,485 ($47,503 net of taxes), $58,221 ($43,495 net of taxes) and $45,751 ($34,197 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, 2022, related to unvested RSU awards was $73,304 and this future expense will be recognized over the remaining vesting period of the RSU awards, which extends to 2027. The weighted average remaining vesting period of the RSU awards is 1.4 years. The total unrecognized compensation cost at December 31, 2022, related to unvested PSU awards was $18,194 and this future expense will be recognized over the remaining vesting period of the PSU awards, which extends to 2025. The weighted average remaining vesting period of PSU awards is 1.1 years.

Other Share-Based Awards

As of December 31, 2022, 2021 and 2020, the Company had a liability of $8,042, $9,008 and $7,237, respectively, representing the December 31, 2022, 2021 and 2020 fair values, respectively, of outstanding Progressive Waste restricted share units which are expected to be cash settled. All remaining unvested Progressive Waste restricted share units vested during the year ended December 31, 2019.

As of December 31, 2022, 2021 and 2020, the Company had a liability of $3,814, $4,088 and $3,556, respectively, representing the December 31, 2022, 2021 and 2020 fair value, respectively, of outstanding Progressive Waste share-based options which are expected to be cash settled. All remaining unvested Progressive Waste share-based options were fully vested as of December 31, 2017.

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, 2022, 2021 and 2020, was $8,335, $7,155 and $4,870, 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 and by published industry development factors. At December 31, 2022 and 2021, the Company's total accrual for self-insured liabilities was $151,379 and $147,757, respectively, which is included in Accrued liabilities in the Consolidated Balance Sheets. For the years ended December 31, 2022, 2021 and 2020, the Company recognized $204,347, $179,250 and $164,099, 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.

4. 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 3. 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.

5. PREPAID EXPENSES AND OTHER CURRENT ASSETS

Prepaid expenses and other current assets consist of the following:

	December 31,	
	2022	2021
Income taxes receivable	$ 43,055	$ 61,305
Inventory	55,188	44,257
Prepaid insurance	31,588	22,471
Unrealized cash flow hedge gains	17,906	—
Prepaid licenses and permits	12,116	10,683
Other	45,293	37,006
	$ 205,146	$ 175,722

6. PROPERTY AND EQUIPMENT, NET

Property and equipment, net consists of the following:

	December 31,	
	2022	2021
Landfill site costs	$ 5,179,768	$ 4,447,530
Rolling stock	2,835,330	2,483,294
Land, buildings and improvements	1,673,062	1,339,542
Containers	1,180,370	983,602
Machinery and equipment	1,065,767	940,723
Construction in progress	132,367	82,187
	12,066,664	10,276,878
Less accumulated depreciation and depletion	(5,115,749)	(4,554,929)
	$ 6,950,915	$ 5,721,949

Machinery and equipment included $11,227 and $10,342, at December 31, 2022 and 2021, respectively, of equipment assets accounted for as finance leases. The Company's landfill depletion expense, recorded in Depreciation in the Consolidated Statements of Net Income, for the years ended December 31, 2022, 2021 and 2020, was $232,251, $212,898 and $200,374, respectively.

7. LEASES

The Company rents certain equipment and facilities under short-term agreements, non-cancelable operating lease agreements and finance leases. The Company determines if an arrangement is or contains a lease at contract inception. The Company recognizes a right-of-use ("ROU") asset and a lease liability at the lease commencement date. The lease liability is initially measured at the present value of the unpaid lease payments at the lease commencement date.

Key estimates and judgments include how the Company determines (1) the discount rate it uses to discount the unpaid lease payments to present value, (2) lease term and (3) lease payments.

The lease guidance requires a lessee to discount its unpaid lease payments using the interest rate implicit in the lease or, if that rate cannot be readily determined, its incremental borrowing rate. Generally, the Company cannot determine the interest rate implicit in the lease because it does not have access to the lessor's estimated residual value or the amount of the lessor's deferred initial direct costs. Therefore, the Company generally uses its incremental borrowing rate as the discount rate for the lease. The Company's incremental borrowing rate for a lease is the rate of interest it would have to pay on a collateralized basis to borrow an amount equal to the lease payments under similar terms.

The lease term for the Company's leases includes the noncancelable period of the lease, plus any additional periods covered by either a Company option to extend (or not to terminate) the lease that the Company is reasonably certain to exercise, or an option to extend (or not to terminate) the lease controlled by the lessor.

Lease payments included in the measurement of the lease liability comprise fixed payments or variable lease payments. The variable lease payments take into account annual changes in the consumer price index and common area maintenance charges, if known.

ROU assets for operating and finance leases are periodically reviewed for impairment losses. The Company uses the long-lived asset impairment guidance in ASC Subtopic 360-10, Property, Plant, and Equipment – Overall, to determine whether an ROU asset is impaired, and if so, the amount of the impairment loss to recognize. The Company did not recognize an impairment charge for any of its ROU assets during the years ended December 31, 2022, 2021 and 2020.

The Company monitors for events or changes in circumstances that require a reassessment of one of its leases. When a reassessment results in the remeasurement of a lease liability, a corresponding adjustment is made to the carrying amount of the corresponding ROU asset. The Company did not recognize any significant remeasurements during the years ended December 31, 2022, 2021 and 2020.

The Company has elected not to recognize ROU assets and lease liabilities for short-term leases that have a lease term of less than 12 months. The Company has elected to apply the short-term lease recognition and measurement exemption allowed for in the lease accounting standard. The Company recognizes the lease payments associated with its short-term leases as an expense on a straight-line basis over the lease term.

The Company initially entered into finance leases in December 2020 and the assets under these leases went into service on December 31, 2020.

Lease cost for operating and finance leases for the years ended December 31, 2022, 2021 and 2020 were as follows:

	Years Ended December 31,		
	2022	2021	2020
Operating lease cost	$ 41,891	$ 40,381	$ 39,411
Finance lease cost:			
Amortization of leased assets	2,484	3,424	—
Interest on leased liabilities	219	152	—
Total lease cost	$ 44,594	$ 43,957	$ 39,411

Supplemental cash flow information and non-cash activity related to the Company's leases are as follows:

	Years Ended December 31,		
	2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	$ 40,782	$ 40,249	$ 39,212
Operating cash flows from finance leases	$ 219	$ 152	$ —
Financing cash flows from finance leases	$ 5,560	$ 3,133	$ —
Non-cash activity:			
Right-of-use assets obtained in exchange for lease liabilities - operating leases	$ 63,648	$ 17,933	$ 15,117
Right-of-use assets obtained in exchange for lease liabilities - finance leases	$ 3,369	$ 10,012	$ 3,754

Weighted-average remaining lease term and discount rate for the Company's leases are as follows:

	Years Ended December 31,		
	2022	2021	2020
Weighted average remaining lease term - operating leases	8.9 years	8.0 years	8.6 years
Weighted average remaining lease term - finance leases	4.2 years	4.9 years	5.4 years
Weighted average discount rate - operating leases	2.93 %	3.37 %	3.86 %
Weighted average discount rate - finance leases	1.96 %	1.89 %	1.89 %

As of December 31, 2022, future minimum lease payments, reconciled to the respective lease liabilities, are as follows:

	Operating Leases	Finance Leases
2023	$ 40,499	$ 2,906
2024	32,521	2,905
2025	26,869	2,905
2026	22,317	2,320
2027	19,528	898
Thereafter	89,050	—
Minimum lease payments	230,784	11,934
Less: imputed interest	(30,152)	(470)
Present value of minimum lease payments	200,632	11,464
Less: current portion of lease liabilities	(35,170)	(2,695)
Long-term portion of lease liabilities	$ 165,462	$ 8,769

8. 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 the 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 transaction costs as expense.

The Company acquired 24 individually immaterial non-hazardous solid waste collection, transfer, recycling and disposal businesses during the year ended December 31, 2022. The total transaction-related expenses incurred during the year ended December 31, 2022 for these acquisitions was $24,933. These expenses are included in Selling, general and administrative expenses in the Company's Consolidated Statements of Net Income.

The Company acquired 30 individually immaterial non-hazardous solid waste collection, transfer, recycling and disposal businesses during the year ended December 31, 2021. The purchase consideration recorded during this period for nine of the acquired businesses included contingent consideration based upon the receipt of contract assignments and the achievement of certain targets, including future asset and revenue growth. The fair value of the total contingent consideration recorded during the year ended December 31, 2021 of $31,616 was determined using probability assessments of the expected future cash flows over a one to two year period in which the obligations are expected to be settled, and applying an average discount rate of 1.5%. As of December 31, 2022, $12,993 of the obligations recognized at the purchase date have been paid and the remaining obligations have 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 transaction-related expenses incurred during the year ended December 31, 2021 for these acquisitions were $11,318. These expenses are included in Selling, general and administrative expenses in the Company's Consolidated Statements of Net Income.

The Company acquired 21 individually immaterial non-hazardous solid waste collection, transfer, recycling and disposal businesses during the year ended December 31, 2020. The total transaction-related expenses incurred during the year ended December 31, 2020 for these acquisitions was $9,803. 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, 2022, 2021 and 2020:

	2022 Acquisitions	2021 Acquisitions	2020 Acquisitions
Fair value of consideration transferred:			
Cash	$ 2,206,901	$ 960,449	$ 388,789
Debt assumed	127,136	108,345	91,349
Change in open working capital settlements at year end	—	—	1,505
	2,334,037	1,068,794	481,643
Recognized amounts of identifiable assets acquired and liabilities assumed associated with businesses acquired:			
Accounts receivable	49,696	33,236	13,759
Prepaid expenses and other current assets	9,428	4,866	4,509
Restricted investments	7,469	—	—
Operating lease right-of-use assets	4,707	5,972	5,247
Property and equipment	1,073,155	394,687	173,394
Long-term franchise agreements and contracts	239,866	134,827	59,149
Indefinite-lived intangibles	—	9,557	13,465
Customer lists	74,940	75,612	48,512
Permits and other intangibles	187,107	116,967	10,507
Other assets	243	77	389
Accounts payable and accrued liabilities	(56,633)	(37,827)	(14,174)
Current portion of operating lease liabilities	(1,546)	(1,370)	(509)
Deferred revenue	(10,761)	(8,389)	(1,821)
Contingent consideration	(6,642)	(31,616)	(4,688)
Long-term portion of operating lease liabilities	(3,161)	(4,602)	(4,738)
Other long-term liabilities	(6,915)	(13,976)	(2,136)
Deferred income taxes	(51,507)	(63,822)	(4,525)
Total identifiable net assets	1,509,446	614,199	296,340
Goodwill	$ 824,591	$ 454,595	$ 185,303

Goodwill acquired in 2022 totaling $510,755 is expected to be deductible for tax purposes. Goodwill acquired in 2021 totaling $187,287 is expected to be deductible for tax purposes. Goodwill acquired in 2020 totaling $169,147 is expected to be deductible for tax purposes. The fair value of acquired working capital related to 17 individually immaterial acquisitions completed during the year ended December 31, 2022, 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 17 acquisitions are not expected to be material to the Company's financial position.

The gross amount of trade receivables due under contracts acquired during the year ended December 31, 2022, was $54,332, of which $4,636 was expected to be uncollectible. The gross amount of trade receivables due under contracts acquired during the year ended December 31, 2021, was $36,645, of which $3,409 was expected to be uncollectible. The gross amount of trade receivables due under contracts acquired during the year ended December 31, 2020, was $13,854, of which $95 was expected to be uncollectible. The Company did not acquire any other class of receivable as a result of the acquisition of these businesses.

9. INTANGIBLE ASSETS, NET

Intangible assets, exclusive of goodwill, consisted of the following at December 31, 2022:

	Gross Carrying Amount	Accumulated Amortization	Accumulated Impairment Loss	Net Carrying Amount
Finite-lived intangible assets:				
Long-term franchise agreements and contracts	$ 916,582	$ (297,382)	$ —	$ 619,200
Customer lists	776,719	(527,425)	—	249,294
Permits and other	779,689	(115,095)	(40,784)	623,810
	2,472,990	(939,902)	(40,784)	1,492,304
Indefinite-lived intangible assets:				
Solid waste collection and transportation permits	181,613	—	—	181,613
Intangible assets, exclusive of goodwill	$ 2,654,603	$ (939,902)	$ (40,784)	$ 1,673,917

The weighted-average amortization period of long-term franchise agreements and contracts acquired during the year ended December 31, 2022 was 28.9 years. The weighted-average amortization period of customer lists acquired during the year ended December 31, 2022 was 11.5 years. The weighted-average amortization period of finite-lived permits and other acquired during the year ended December 31, 2022 was 40.0 years.

Intangible assets, exclusive of goodwill, consisted of the following at December 31, 2021:

	Gross Carrying Amount	Accumulated Amortization	Accumulated Impairment Loss	Net Carrying Amount
Finite-lived intangible assets:				
Long-term franchise agreements and contracts	$ 724,128	$ (278,827)	$ —	$ 445,301
Customer lists	711,047	(450,109)	—	260,938
Permits and other	598,336	(94,807)	(40,784)	462,745
	2,033,511	(823,743)	(40,784)	1,168,984
Indefinite-lived intangible assets:				
Solid waste collection and transportation permits	181,613	—	—	181,613
Intangible assets, exclusive of goodwill	$ 2,215,124	$ (823,743)	$ (40,784)	$ 1,350,597

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

For the year ending December 31, 2023	$ 153,457
For the year ending December 31, 2024	$ 135,884
For the year ending December 31, 2025	$ 119,071
For the year ending December 31, 2026	$ 103,541
For the year ending December 31, 2027	$ 89,959

10. ACCRUED LIABILITIES

Accrued liabilities consist of the following:

	December 31, 2022	December 31, 2021
Insurance claims and premiums	$ 152,242	$ 149,864
Payroll and payroll-related	126,301	141,877
Interest payable	47,612	28,729
Final capping, closure and post-closure liability	17,336	19,925
Property taxes	11,218	8,833
Environmental remediation reserves	3,165	2,300
Cell processing reserves	2,939	3,364
Share-based compensation plan liability	2,344	2,423
Transaction-related expenses	1,627	3,130
Unrealized cash flow hedge losses	—	18,675
Other	66,463	63,476
	$ 431,247	$ 442,596

11. LONG-TERM DEBT

The following table presents the Company's long-term debt as of December 31, 2022 and 2021:

	December 31, 2022	December 31, 2021
Revolver under Credit Agreement, bearing interest ranging from 5.42% to 5.74% [(a)]	$ 614,705	$ 803,944
Term loan under Credit Agreement, bearing interest at 5.42% [(a)]	650,000	650,000
Term loan under Term Loan Agreement, bearing interest at 5.42% [(a), (b)]	800,000	—
4.25% Senior Notes due 2028	500,000	500,000
3.50% Senior Notes due 2029	500,000	500,000
2.60% Senior Notes due 2030	600,000	600,000
2.20% Senior Notes due 2032	650,000	650,000
3.20% Senior Notes due 2032	500,000	—
4.20% Senior Notes due 2033	750,000	—
3.05% Senior Notes due 2050	500,000	500,000
2.95% Senior Notes due 2052	850,000	850,000
Notes payable to sellers and other third parties, bearing interest ranging from 2.42% to 10.35%, principal and interest payments due periodically with due dates ranging from 2024 to 2036 [(a)]	37,232	37,508
Finance leases, bearing interest ranging from 1.89% to 2.16%, with lease expiration dates ranging from 2026 to 2027 [(a)]	11,464	10,519
	6,963,401	5,101,971
Less – current portion	(6,759)	(6,020)
Less – unamortized debt discount and issuance costs	(66,493)	(55,451)
	$ 6,890,149	$ 5,040,500

(a) Interest rates represent the interest rates incurred at December 31, 2022.
(b) Interest rate margin for term loan under Term Loan Agreement was 1.00% at December 31, 2022.

Credit Agreement

The Company has a revolving credit and term loan agreement (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement") with Bank of America, N.A., acting through its Canada Branch, as the global agent, the swing line lender and a letter of credit issuer, Bank of America, N.A., as the U.S. agent and a letter of credit issuer, the other lenders named therein (the "Lenders") and any other financial institutions from time to time party thereto. The Credit Agreement has a scheduled maturity date of July 30, 2026, which may be extended further upon agreement by Lenders holding at least 50% of the commitments and credit extensions outstanding, with respect to their respective commitments and credit extensions outstanding. Any Lender that does not agree to an extension of the maturity date shall not be so extended with respect to their commitments and credit extensions.

Details of the Credit Agreement are as follows:

	December 31,	
	2022	2021
Revolver under Credit Agreement		
Available	$ 1,193,502	$ 933,775
Letters of credit outstanding	$ 41,793	$ 112,281
Total amount drawn, as follows:	$ 614,705	$ 803,944
Amount drawn – U.S. Term SOFR rate loan	$ 391,000	Not applicable
Interest rate applicable – U.S. Term SOFR rate loan	5.42 %	Not applicable
Interest rate margin – U.S. Term SOFR rate loan	1.00 %	Not applicable
Amount drawn – U.S. LIBOR rate loan	Not applicable	$ 631,000
Interest rate applicable – U.S. LIBOR rate loan	Not applicable	1.10 %
Interest rate margin – U.S. LIBOR rate loan	Not applicable	1.00 %
Amount drawn – U.S. base rate loan	$ —	$ 158,000
Interest rate applicable – U.S. base rate loan	— %	3.25 %
Interest rate margin – U.S. base rate loan	— %	0.00 %
Amount drawn – U.S. swingline loan	$ —	$ 11,000
Interest rate applicable – U.S. swingline loan	— %	3.25 %
Interest rate margin – U.S. swingline loan	— %	0.00 %
Amount drawn – Canadian bankers' acceptance	$ 223,705	$ 3,944
Interest rate applicable – Canadian bankers' acceptance	5.74 %	1.45 %
Interest rate acceptance fee – Canadian bankers' acceptance	1.00 %	1.00 %
Commitment – rate applicable	0.09 %	0.09 %
Term loan under Credit Agreement		
Amount drawn – U.S. Term SOFR rate loan	$ 650,000	Not applicable
Interest rate applicable – U.S. Term SOFR rate loan	5.42 %	Not applicable
Interest rate margin – U.S. Term SOFR rate loan	1.00 %	Not applicable
Amount drawn – U.S. based LIBOR loan	Not applicable	$ 650,000
Interest rate applicable – U.S. based LIBOR loan	Not applicable	1.10 %
Interest rate margin – U.S. based LIBOR loan	Not applicable	1.20 %

In addition to the $41,793 of letters of credit at December 31, 2022 issued and outstanding under the Credit Agreement, the Company has issued and outstanding letters of credit totaling $85,319 under facilities other than the Credit Agreement.

Pursuant to the terms and conditions of the Credit Agreement, the Lenders provide a $2,500,000 credit facility to the Company, consisting of (i) revolving advances up to an aggregate principal amount of $1,850,000 at any one time outstanding, and (ii) a term loan in an aggregate principal amount of $650,000. 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 $100,000 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. 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 $3,000,000. As of December 31, 2022, there are no commitments by lenders for any such increases in aggregate principal amount of revolving advances or additional term loans described in the preceding sentence. The Company has $2,901 of debt issuance costs related to the revolver under the Credit Agreement recorded in Other assets, net in the Consolidated Balance Sheets at December 31, 2022, which are being amortized through the maturity date, or July 30, 2026. The Company is amortizing $8,674 of debt issuance costs related to the term loan under the Credit Agreement through the maturity date.

Advances are available under the Credit Agreement in U.S. dollars and Canadian dollars. Prior to the effectiveness of the amendment to the Credit Agreement dated as of October 31, 2022 (the "First Amendment"), interest accrued on the term loan under the Credit Agreement at a rate based on London interbank rate for specified interest periods ("LIBOR") or a base rate, at the Company's option, plus an applicable margin. Following the effectiveness of the First Amendment, interest accrues on the term loan under the Credit Agreement at a rate based upon the secured overnight financing rate ("SOFR") for specified interest periods ("Term SOFR") (including for all Term SOFR loans, a credit spread adjustment of 0.10% for all applicable interest periods) or a base rate, at the Company's option, plus an applicable margin.

Interest accrues on revolving advances under the Credit Agreement, at the Company's option, (i) (A) prior to the effectiveness of the First Amendment, at LIBOR, (B) following the effectiveness of the First Amendment, at Term SOFR or (C) a base rate for U.S. dollar borrowings, in each case 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 notes, subject to the payment of a drawing fee. Certain 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 debt rating of the Company's public non-credit-enhanced, senior unsecured long-term debt (the "Debt Rating"). The applicable margin for LIBOR loans (prior to the effectiveness of the First Amendment), Term SOFR loans (following the effectiveness of the First Amendment), drawing fees for bankers' acceptances, BA equivalent notes and certain letter of credit fees ranges from 0.750% to 1.250%. The applicable margin for U.S. base rate loans, Canadian prime rate loans and swing line loans ranges from 0.00% to 0.250%. The Company will also pay a fee based on the Debt Rating on the actual daily unused amount of the aggregate revolving commitments, ranging from 0.065% to 0.150%.

The Credit Agreement contains customary benchmark replacement mechanics in connection with certain benchmark transition events, as well as customary mechanics with respect to the unavailability of a tenor of a then-current benchmark rate.

The borrowings under the Credit Agreement are unsecured and there are no subsidiary guarantors under the Credit Agreement. Proceeds from borrowings under the Credit Agreement may be used (i) to finance acquisitions, dividends or other equity distributions permitted under the Credit Agreement and (ii) for capital expenditures, working capital, payment of certain transaction fees and expenses, letters of credit and any other lawful corporate purposes. 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) Consolidated Total Funded Debt (as defined in the Credit Agreement) as of such date to

(b) Consolidated EBITDA (as defined in the Credit Agreement), measured for the preceding 12 months, to not more than 3.75 to 1.00 (or 4.25 to 1.00 during material acquisition periods, subject to certain limitations). As of December 31, 2022 and 2021, the Company was in compliance with all applicable covenants in the Credit Agreement as in effect as of the applicable date.

Term Loan Agreement

On October 31, 2022, the Company, as borrower, Bank of America, N.A., as administrative agent, and the other lenders from time to time party thereto (the "New TL Lenders") entered into that certain Term Loan Agreement (as amended, restated, supplemented or otherwise modified from time to time, the "Term Loan Agreement"), pursuant to which the New TL Lenders made loans to the Company in an aggregate stated principal amount of $800,000. The Company used substantially all of the proceeds of borrowings under the Term Loan Agreement to repay revolving borrowings under the Credit Agreement. Amounts borrowed under the Term Loan Agreement and repaid or prepaid may not be reborrowed. The Company is amortizing $1,725 of debt issuance costs through the maturity date, or July 30, 2026.

Interest accrues on the term loan under the Term Loan Agreement at Term SOFR (including for all Term SOFR loans, a credit spread adjustment of 0.10% for all applicable interest periods) or a base rate, at the Company's option, plus an applicable margin. The applicable margin used in connection with calculating interest rates and fees is based on the Company's Debt Rating. The applicable margin for Term SOFR loans ranges from 0.750% to 1.250% per annum, and the applicable margin for base rate loans ranges from 0.00% to 0.250% per annum.

The Term Loan Agreement contains customary benchmark replacement mechanics in connection with certain benchmark transition events, as well as customary mechanics with respect to the unavailability of a tenor of a then-current benchmark rate. The borrowings under the Term Loan Agreement are unsecured and there are no subsidiary guarantors under the Term Loan Agreement.

The Term Loan 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 New TL Lenders may take a number of actions, including, among others, declaring the entire amount then outstanding under the Term Loan Agreement and related loan documents to be due and payable.

The Term Loan Agreement includes a financial covenant limiting, as of the last day of each fiscal quarter, the ratio of (i) Consolidated Total Funded Debt (as defined in the Term Loan Agreement) as of such date to (b) Consolidated EBITDA (as defined in the Term Loan Agreement), measured for the preceding 12 months, to not more than 3.75 to 1.00 (or 4.25 to 1.00 during material acquisition periods, subject to certain limitations). As of December 31, 2022, the Company was in compliance with all applicable covenants in the Term Loan Agreement.

Private Placement Notes

Pursuant to the terms and conditions of a Master Note Purchase Agreement dated as of June 1, 2016 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "2016 NPA") between the Company and certain accredited institutional investors, the Company issued senior unsecured notes (the "2016 Private Placement Notes") consisting of (i) $150,000 of senior notes due June 1, 2021 (the "June 2021 Private Placement Notes"), (ii) $200,000 of senior notes due June 1, 2023, (iii) $150,000 of senior notes due April 20, 2024, (iv) $400,000 of senior notes due June 1, 2026 and (v) $250,000 of senior notes due April 20, 2027.

Pursuant to the terms and conditions of a Master Note Purchase Agreement, dated as of July 15, 2008 (as amended, restated, amended and restated, assumed, supplemented or otherwise modified from time to time, the "2008 NPA") between the Company and certain accredited institutional investors, the Company issued senior unsecured notes (the "2008

Private Placement Notes" and together with the 2016 Private Placement Notes, the "Private Placement Notes") consisting of (i) $100,000 of senior notes due April 1, 2021 (the "April 2021 Private Placement Notes" and together with the June 2021 Private Placement Notes, the "2021 Private Placement Notes"), (ii) $125,000 of senior notes due August 20, 2022 and (iii) $375,000 of senior notes due August 20, 2025.

The Company repaid at maturity the 2021 Private Placement Notes and repaid the other Private Placement Notes in connection with the Offering (defined below) in September 2021.

Senior Notes

On November 16, 2018, the Company completed an underwritten public offering of $500,000 aggregate principal amount of its 4.25% Senior Notes due December 1, 2028 (the "2028 Senior Notes"). The 2028 Senior Notes were issued under the Indenture, dated as of November 16, 2018 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Indenture"), by and between the Company and U.S. Bank National Association, as trustee (the "Trustee"), as supplemented through the First Supplemental Indenture, dated as of November 16, 2018. The Company is amortizing $5,792 of debt issuance costs through the maturity date of the 2028 Senior Notes. 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.

On April 16, 2019, the Company completed an underwritten public offering of $500,000 aggregate principal amount of its 3.50% Senior Notes due May 1, 2029 (the "2029 Senior Notes"). The 2029 Senior Notes were issued under the Indenture, as supplemented through the Second Supplemental Indenture, dated as of April 16, 2019. The Company is amortizing $5,954 of debt issuance costs through the maturity date of the 2029 Senior Notes. The Company may redeem some or all of the 2029 Senior Notes at its option prior to February 1, 2029 (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 2029 Senior Notes redeemed, or the sum of the present values of the remaining scheduled payments of principal and interest on the 2029 Senior Notes redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. Commencing on February 1, 2029 (three months before the maturity date), the Company may redeem some or all of the 2029 Senior Notes, at any time and from time to time, at a redemption price equal to the principal amount of the 2029 Senior Notes being redeemed plus accrued and unpaid interest to, but excluding, the redemption date.

On January 23, 2020, the Company completed an underwritten public offering of $600,000 aggregate principal amount of 2.60% Senior Notes due February 1, 2030 (the "2030 Senior Notes"). The 2030 Senior Notes were issued under the Indenture, as supplemented through the Third Supplemental Indenture, dated as of January 23, 2020. The Company is amortizing $5,435 of debt issuance costs through the maturity date of the 2030 Senior Notes. The Company may redeem some or all of the 2030 Senior Notes at its option prior to November 1, 2029 (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 2030 Senior Notes redeemed, or the sum of the present values of the remaining scheduled payments of principal and interest on the 2030 Senior Notes redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. Commencing on November 1, 2029 (three months before the maturity date), the Company may redeem some or all of the 2030 Senior Notes, at any time and from time to time, at a redemption price equal to the principal amount of the 2030 Senior Notes being redeemed plus accrued and unpaid interest to, but excluding, the redemption date.

On March 13, 2020, the Company completed an underwritten public offering of $500,000 aggregate principal amount of 3.05% Senior Notes due April 1, 2050 (the "2050 Senior Notes"). The 2050 Senior Notes were issued under the Indenture, as supplemented through the Fourth Supplemental Indenture, dated as of March 13, 2020. The Company is

amortizing a $7,375 debt discount and $5,682 of debt issuance costs through the maturity date of the 2050 Senior Notes. The Company may redeem some or all of the 2050 Senior Notes at its option prior to October 1, 2049 (six 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 2050 Senior Notes redeemed, or the sum of the present values of the remaining scheduled payments of principal and interest on the 2050 Senior Notes redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. Commencing on October 1, 2049 (six months before the maturity date), the Company may redeem some or all of the 2050 Senior Notes, at any time and from time to time, at a redemption price equal to the principal amount of the 2050 Senior Notes being redeemed plus accrued and unpaid interest to, but excluding, the redemption date.

On September 20, 2021, the Company completed an underwritten public offering (the "Offering") of $650,000 aggregate principal amount of 2.20% Senior Notes due January 15, 2032 (the "2032 Senior Notes") and $850,000 aggregate principal amount of 2.95% Senior Notes due January 15, 2052 (the "2052 Senior Notes"). The 2032 Senior Notes and the 2052 Senior Notes were issued under the Indenture, as supplemented through the Fifth Supplemental Indenture, dated as of September 20, 2021. The Company is amortizing a $1,066 debt discount and $5,979 of debt issuance costs through the maturity date of the 2032 Senior Notes and a $12,742 debt discount and $9,732 of debt issuance costs through the maturity date of the 2052 Senior Notes. The Company may, prior to October 15, 2031 (three months before the maturity date), redeem some or all of the 2032 Senior Notes, at any time and from time to time, at a redemption price equal to the greater of 100% of the principal amount of the 2032 Senior Notes redeemed, or the sum of the present values of the remaining scheduled payments of principal and interest on the 2032 Senior Notes redeemed. Commencing on October 15, 2031 (three months before the maturity date), the Company may redeem some or all of the 2032 Senior Notes, at any time and from time to time, at a redemption price equal to the principal amount of the 2032 Senior Notes being redeemed plus accrued and unpaid interest to, but excluding, the redemption date. The Company may, prior to July 15, 2051 (six months before the maturity date), redeem some or all of the 2052 Senior Notes, at any time and from time to time, at a redemption price equal to the greater of 100% of the principal amount of the 2052 Senior Notes redeemed, or the sum of the present values of the remaining scheduled payments of principal and interest on the 2052 Senior Notes redeemed. Commencing on July 15, 2051 (six months before the maturity date), the Company may redeem some or all of the 2052 Senior Notes, at any time and from time to time, at a redemption price equal to the principal amount of the 2052 Senior Notes being redeemed plus accrued and unpaid interest to, but excluding, the redemption date.

In connection with the Offering, the Company exercised its right to repay the $1,500,000 of Private Placement Notes then outstanding governed by the 2008 NPA and the 2016 NPA. The Company repaid the Private Placement Notes then outstanding, including the $110,617 make-whole premium, with the net proceeds from the Offering and borrowings under the revolving credit facility provided under its Credit Agreement. The Company recorded $115,288 to Loss on early extinguishment of debt during the year ended December 31, 2021 due to the repayment of the Private Placement Notes and associated make-whole premium and related fees.

On March 9, 2022, the Company completed an underwritten public offering of $500,000 aggregate principal amount of its 3.20% Senior Notes due June 1, 2032 (the "New 2032 Senior Notes"). The New 2032 Senior Notes were issued under the Indenture, as supplemented through the Sixth Supplemental Indenture, dated as of March 9, 2022. The Company is amortizing $375 of debt discount and $4,668 of debt issuance costs through the maturity date of the New 2032 Senior Notes. The Company may redeem some or all of the New 2032 Senior Notes at its option prior to March 1, 2032 (three months before the maturity date) (the "New 2032 Senior Notes Par Call 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 New 2032 Senior Notes redeemed, or the sum of the present values of the remaining scheduled payments of principal and interest on the New 2032 Senior Notes redeemed discounted to the redemption date (assuming the New 2032 Senior Notes matured on the New 2032 Senior Notes Par Call Date), plus, in either case, accrued and unpaid interest thereon to the redemption date. Commencing on March 1, 2032 (three months before the maturity date), the Company may redeem some or all of the New 2032 Senior Notes, at any time and from time to time, at a redemption price equal to the principal amount of the New 2032 Senior Notes being redeemed plus accrued and unpaid interest thereon to the redemption date.

On August 18, 2022, the Company completed an underwritten public offering of $750,000 aggregate principal amount of its 4.20% Senior Notes due January 15, 2033 (the "2033 Senior Notes" and, together with the 2028 Senior Notes, the 2029 Senior Notes, the 2030 Senior Notes, the 2032 Senior Notes, the New 2032 Senior Notes, the 2050 Senior Notes and the 2052 Senior Notes, the "Senior Notes"). The 2033 Senior Notes were issued under the Indenture, as supplemented through the Seventh Supplemental Indenture, dated as of August 18, 2022. The Company is amortizing $2,040 of debt discount and $6,878 of debt issuance costs through the maturity date of the 2033 Senior Notes. The Company may redeem some or all of the 2033 Senior Notes at its option prior to October 15, 2032 (three months before the maturity date) (the "2033 Senior Notes Par Call 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 2033 Senior Notes redeemed, or the sum of the present values of the remaining scheduled payments of principal and interest on the 2033 Senior Notes redeemed discounted to the redemption date (assuming the 2033 Senior Notes matured on the 2033 Senior Notes Par Call Date), plus, in either case, accrued and unpaid interest thereon to the redemption date. Commencing on October 15, 2032 (three months before the maturity date), the Company may redeem some or all of the 2033 Senior Notes, at any time and from time to time, at a redemption price equal to the principal amount of the 2033 Senior Notes being redeemed plus accrued and unpaid interest thereon to the redemption date.

The Company pays interest on the Senior Notes semi-annually in arrears. The Senior Notes are the Company's senior unsecured obligations, ranking equally in right of payment with its existing and future unsubordinated debt and senior to any of its future subordinated debt. The Senior Notes are not guaranteed by any of the Company's subsidiaries.

Under certain circumstances, the Company may become obligated to pay additional amounts (the "Additional Amounts") with respect to the Senior Notes to ensure that the net amounts received by each holder of the 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 Senior Notes. If such payment of Additional Amounts is 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 Senior Notes having power to tax, and the Company cannot avoid such payments of Additional Amounts through reasonable measures, then the Company may redeem the applicable series of the 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 Senior Notes may require the Company to repurchase all or a portion of the Senior Notes for cash at a price equal to 101% of the aggregate principal amount of such Senior Notes, plus any accrued but unpaid interest, if any, to, but excluding, 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 Senior Notes. As of December 31, 2022 and 2021, the Company was in compliance with all applicable covenants in the Indenture as in effect on the applicable date.

Upon an event of default, the principal of and accrued and unpaid interest on all the 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 Senior Notes of the applicable series. Upon such a declaration, such principal and accrued interest on all of the applicable series of the 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 series of the 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 applicable series of the Senior Notes. Under certain circumstances, the holders of a majority in principal amount of the outstanding Senior Notes of any series may rescind any such acceleration with respect to the Senior Notes of that series and its consequences.

As of December 31, 2022, aggregate contractual future principal payments by calendar year on long-term debt are due as follows:

2023	$ 6,759
2024	10,636
2025	7,112
2026	2,071,152
2027	5,179
Thereafter	4,862,563
	$ 6,963,401

12. 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. At December 31, 2022 and 2021, the Company's derivative instruments included pay-fixed, receive-variable interest rate swaps. 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. For the Company's interest rate swaps, 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 is valued at quoted market prices in active markets for identical assets, which the Company receives from the financial institutions that hold such investments on its behalf. The Company's restricted cash measured at fair value is invested primarily in money market accounts, bank time deposits and U.S. government and agency securities. The Company's restricted 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 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, 2022 and 2021, were as follows:

	Fair Value Measurement at December 31, 2022 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	$ 31,807	$ —	$ 31,807	$ —
Restricted cash	$ 102,727	$ 102,727	$ —	$ —
Restricted investments	$ 66,402	$ —	$ 66,402	$ —
Contingent consideration	$ (81,415)	$ —	$ —	$ (81,415)

	Fair Value Measurement at December 31, 2021 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 liability position	$ (51,081)	$ —	$ (51,081)	$ —
Restricted cash	$ 72,174	$ 72,174	$ —	$ —
Restricted investments	$ 58,797	$ —	$ 58,797	$ —
Contingent consideration	$ (94,308)	$ —	$ —	$ (94,308)

See Note 3 – "Impairments of Property and Equipment and Finite-Lived Intangible Assets" regarding non-recurring fair value measurements.

The following table summarizes the changes in the fair value for Level 3 liabilities related to contingent consideration for the years ended December 31, 2022 and 2021:

	Years Ended December 31,	
	2022	2021
Beginning balance	$ 94,308	$ 71,736
Contingent consideration recorded at acquisition date	6,642	31,616
Payment of contingent consideration recorded at acquisition date	(16,911)	(12,934)
Payment of contingent consideration recorded in earnings	(2,982)	(520)
Adjustments to contingent consideration	(1,030)	2,954
Interest accretion expense	1,417	1,470
Foreign currency translation adjustment	(29)	(14)
Ending balance	$ 81,415	$ 94,308

13. COMMITMENTS AND CONTINGENCIES

COMMITMENTS

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, 2022 and 2021, the Company had provided customers and various regulatory authorities with surety bonds in the aggregate amounts of approximately $811,243 and $744,037, respectively, to secure its asset closure and retirement requirements and $636,224 and $556,570, 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 $424,379 and $410,378 were outstanding as of December 31, 2022 and 2021, 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, 2022, the Company's unconditional purchase obligations consist of multiple fixed-price fuel purchase contracts under which it has 57.9 million gallons remaining to be purchased for a total of $184,918. These fuel purchase contracts expire on or before December 31, 2024. During the years ended December 31, 2022, 2021 and 2020, the Company paid $112,136, $100,220 and $93,813, respectively, under the respective fuel purchase contracts then outstanding.

As of December 31, 2022, future minimum purchase commitments, by calendar year, are as follows:

2023	$ 149,858
2024	35,060
	$ 184,918

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, 2022 and 2021, the current portion of remediation reserves was $3,165 and $2,300, respectively, which is included in Accrued liabilities in the Consolidated Balance Sheets. At December 31, 2022 and 2021, the long-term portion of remediation reserves was $17,284 and $20,483, 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.

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. The Company uses $1,000 as a threshold (up from the previously required threshold of $300) for disclosing environmental matters involving potential monetary sanctions.

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, 2022, 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.

Jefferson Parish, Louisiana Landfill Litigation

Between June 2016 and December 31, 2020, one of the Company's subsidiaries, Louisiana Regional Landfill Company ("LRLC"), conducted certain operations at a municipal solid waste landfill known as the Jefferson Parish Landfill (the "Landfill"), located in Avondale, Louisiana, near the City of New Orleans. LRLC's operations were governed by an Operating Agreement, entered into in May 2012 by LRLC under its previous name, IESI LA Landfill Corporation, and the owner of the Landfill, Jefferson Parish (the "Parish"). The Parish also holds the State of Louisiana permit for the operation of the Landfill. Aptim Corporation operated the landfill gas collection system at the Landfill under a separate contract with the Parish.

In July and August 2018, four separate lawsuits seeking class action status were filed against LRLC and certain other Company subsidiaries, the Parish, and Aptim Corporation in Louisiana state court, and subsequently removed to the United States District Court for the Eastern District of Louisiana, before Judge Susie Morgan in New Orleans. The Court later consolidated the claims of the putative class action plaintiffs. Beginning in December 2018, a series of 11 substantively identical mass actions were filed in Louisiana state court against LRLC and certain other Company subsidiaries, the Parish, and Aptim Corporation. The claims of the mass action plaintiffs were consolidated in federal court in the Eastern District of Louisiana, also before Judge Susie Morgan (the "Addison" action).

The putative class actions and the Addison action assert claims for damages from odors allegedly emanating from the Landfill. The consolidated putative class action complaint alleges that the Landfill released "noxious odors" into the plaintiffs' properties and the surrounding community and asserts a range of liability theories—nuisance, negligence (since dismissed), and strict liability—against all defendants. The putative class is described as all residents of Jefferson Parish who have sustained legally cognizable damages as a result of odors from the Landfill, but the complaint proposes to revise the geographic definition based on further evidence. The putative class plaintiffs seek unspecified damages for unidentified nuisance and property value diminution. The Addison plaintiffs assert claims for nuisance, negligence, and (with respect to the Parish) unconstitutional takings under the Louisiana constitution; on behalf of two plaintiffs, the Addison complaint also asserts claims for wrongful death and survivorship.

The Court held an eight-day trial on general causation during January and February 2022. General causation was to address the questions of whether the Landfill could cause odors and emissions that are able to reach plaintiffs' properties and whether those odors and emissions could result in the types of medical impacts and nuisance conditions complained of by the putative class and mass action plaintiffs. Among other things, defendants urged the court to find general causation tied to the geographic limits of landfill emissions that may have the potential to cause a nuisance based on air modeling done by defendants' experts.

On November 29, 2022, the Court issued a 45-page decision on the general causation trial. The Court concluded that all putative class and mass action plaintiffs established general causation—specifically that emissions and gases from the Landfill were capable of causing certain damages alleged by the plaintiffs. The Court held that it only needed to determine the level of exposure necessary to result in injuries and that the level existed somewhere offsite, and that it was not required to delineate this level of exposure within a geographic area. The Court did, however, limit the time period for damages, to between July 2017 and December 2019, and the types of alleged injuries for which the plaintiffs are able to seek damages, to headaches, nausea, vomiting, loss of appetite, sleep disruption, dizziness, fatigue, anxiety and worry, a decrease in quality of life, and loss of enjoyment or use of property. The Addison Plaintiffs' claims of diminution of property value were put on a separate track from these damages and not addressed.

The Court has held two case management conferences since the general causation decision to discuss how to proceed with the class and mass action cases, and the Court has proposed trying certain Addison plaintiffs' cases on the merits prior to class certification being determined as to the putative class case. The Company has opposed that sequence by motion, and the Court has recognized its objection on the record. Subject to that objection, the Company is negotiating a case management order with the Addison plaintiffs that allows for fact and expert discovery on a subset of Addison plaintiffs before selecting 6-10 individuals who will proceed to trial. Trial is expected to be scheduled for the third quarter of 2023.

The Company has already obtained dismissal of approximately one third of the original Addison plaintiffs, the number of which now total 547, and believes it has strong defenses to the merits of the mass actions, including specific causation issues due to other odor sources in the area. The Company also believes it has strong defenses to certification of the putative class actions, although the Court has not yet indicated when it will allow certification to be briefed and decided. The Company is continuing to vigorously defend itself in these lawsuits; however, at this time, the Company is not able to determine the likelihood of any outcome regarding the underlying claims, including the allocation of any potential liability among the Company, the Parish and Aptim Corporation.

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 2.6 million tons of materials for disposal and beneficial use in 2022. 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 reduced the historical landfill operations and represented 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.

Following extensive litigation in 2018 and 2019 on the permissible scope of CCL's challenge, the Superior Court issued its decision on July 2, 2020, granting CCL's petition for writ of mandate in part and denying it in part. CCL prevailed with respect to 12 of the challenged conditions, many of which imposed new fees and exactions on the Landfill. On October 11, 2022, CCL and the County entered into a settlement agreement that requires Chiquita to file a CUP modification application with the County embodying the terms of the settlement agreement. Chiquita filed the CUP modification application on November 10, 2022. If the CUP modification application is approved by the County and certain other contingencies are satisfied, Chiquita will dismiss this lawsuit. However, at this time, the Company is not able to determine the likelihood of any outcome in this matter.

B. 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, described above under paragraph A (the "CUP lawsuit").

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 was issued on July 10, 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 July 17, 2018, the Court granted CCL leave to pay the $11,600 B&T fee and to amend its Complaint in the CUP lawsuit to reflect the payment under protest, allowing the challenge to the B&T fee under the Mitigation Fee Act to proceed in the CUP lawsuit. CCL paid the B&T fee under protest on August 10, 2018, and also paid on that date the administrative penalty of $83 and a noncompliance fee of $0.75. The Court indicated that the NOV case would be coordinated with the CUP lawsuit. On October 11, 2022, CCL and the County entered into a settlement agreement, described above under paragraph A. If the CUP modification application is approved by the County and certain other contingencies are satisfied, Chiquita will dismiss this lawsuit. However, at this time, the Company is not able to determine the likelihood of any outcome in this matter.

Collective Bargaining Agreements

Seventeen of the Company's collective bargaining agreements have expired or are set to expire in 2023. The Company does not expect any significant disruption in its overall business in 2023 as a result of labor negotiations, employee strikes or organizational efforts.

14. SHAREHOLDERS' EQUITY

Employee Share Purchase Plan

On May 15, 2020, the Company's shareholders approved the ESPP. Under the ESPP, qualified employees may elect to have payroll deductions withheld from their eligible compensation on each payroll date in amounts equal to or greater than one percent (1%) but not in excess of ten percent (10%) of eligible compensation in order to purchase the Company's common shares under certain terms and subject to certain restrictions set forth in the ESPP. The exercise price is equal to 95% of the closing price of the Company's common shares on the last day of the relevant offering period; provided, however, that such exercise price will not be less than 85% of the volume weighted average price of the Company's common shares as reflected on the TSX over the final five trading days of such offering period. The maximum number of shares that may be issued under the ESPP is 1,000,000. Under the ESPP, employees purchased 26,582 of the Company's common shares for $3,270 during the year ended December 31, 2022. Under the ESPP, employees purchased 10,813 of the Company's common shares for $1,222 during the year ended December 31, 2021.

Cash Dividend

The Board of Directors of the Company authorized the initiation of a quarterly cash dividend in October 2010 and has increased it on an annual basis. In November 2022, the Company announced that its Board of Directors increased its regular quarterly cash dividend by $0.025, from $0.23 to $0.255 per Company common share. Cash dividends of $243,013, $220,203 and $199,883 were paid during the years ended December 31, 2022, 2021 and 2020, respectively.

Normal Course Issuer Bid

On July 26, 2022, 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 12,859,066 of the Company's common shares during the period of August 10, 2022 to August 9, 2023 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 9, 2022. The Company received TSX approval for its annual renewal of the NCIB on August 8, 2022. 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 85,956 common shares, which represents 25% of the average daily trading volume on the TSX of 343,825 common shares for the period from February 1, 2022 to July 31, 2022. 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 will be immediately cancelled following their repurchase.

For the year ended December 31, 2022, the Company repurchased 3,388,155 common shares pursuant to the NCIB in effect during that period at an aggregate cost of $424,999. For the year ended December 31, 2021, the Company repurchased 3,003,822 common shares pursuant to the NCIB in effect during that period at an aggregate cost of $338,993. For the year ended December 31, 2020, the Company repurchased 1,271,977 common shares pursuant to the NCIB in effect during that period at an aggregate cost of $105,654. As of December 31, 2022, the remaining maximum number of shares available for repurchase under the NCIB was 12,859,066.

Common Shares

The Company is authorized to issue an unlimited number of common shares, that have no par value, and uses reserved but unissued common shares to satisfy its obligations under its equity-based compensation plans. As of December 31, 2022, the Company has reserved the following common shares for issuance:

For outstanding RSUs, PSUs and warrants	2,233,831
For future grants under the 2016 Incentive Award Plan	3,262,941
For future grants under the Employee Share Purchase Plan	948,011
	6,444,783

Common Shares Held in Trust

Common shares held in trust at December 31, 2022 consist of 65,459 shares of the Company 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, 2022, 2021 and 2020, the Company sold 5,203, 3,522 and 7,330 common shares held in the trust, respectively, to settle vested restricted share units and deferred share units.

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, 2022, 2021 and 2020, 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, 2022, 2021 and 2020, no preferred shares were issued.

Restricted Share Units, Performance-Based Restricted Share Units, Share Options and Share Purchase Warrants

In connection with the Progressive Waste acquisition, each Waste Connections US, Inc. 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 the Company, on the same terms and conditions as were applicable immediately prior to the Progressive Waste acquisition under such equity award. Such conversion of 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 Waste Connections US, Inc. 2014 Incentive Plan Award (the "2014 Plan"), the Waste Connections US, Inc. Third Amended and Restated 2004 Equity Incentive Plan (the "2004 Plan"), and the Waste Connections US, Inc. Consultant Incentive Plan (the "Consultant Plan," and, together with the 2014 Plan and the 2004 Plan, the "Assumed

Plans") for the purposes of administering the Assumed Plans and the awards issued thereunder. No additional awards will be made under any of the Assumed Plans. Upon the vesting, expiration, exercise in accordance with their terms or other settlement of all of the awards made pursuant to an Assumed Plan, such Assumed Plan shall automatically terminate. The 2014 Plan and the Consultant Plan have each automatically terminated.

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. The 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 the stockholders of the 2014 Plan on such date.

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 each of July 24, 2017 and 2018, 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,		
	2022	2021	2020
Weighted average grant-date fair value of restricted share units granted	$ 121.26	$ 100.27	$ 101.79
Total fair value of restricted share units vested	$ 28,751	$ 26,711	$ 23,742

A summary of activity related to RSUs during the year ended December 31, 2022, is presented below:

	Unvested Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at December 31, 2021	861,695	$ 95.63
Granted	483,281	$ 121.26
Forfeited	(70,126)	$ 110.86
Vested and issued	(318,851)	$ 90.17
Outstanding at December 31, 2022	955,999	$ 109.29

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, 2022, 2021 and 2020, the Company had 81,352, 100,861 and 177,760 vested deferred RSUs outstanding, respectively.

Performance-Based Restricted Share Units

A summary of the Company's PSU activity is presented below:

	Years Ended December 31,		
	2022	2021	2020
Weighted average grant-date fair value of PSUs granted	$ 117.94	$ 96.99	$ 87.19
Total fair value of PSUs vested	$ 4,674	$ 10,954	$ 15,628

A summary of activity related to PSUs during the year ended December 31, 2022, is presented below:

	Unvested Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at December 31, 2021	392,043	$ 91.63
Granted	95,038	$ 117.94
Forfeited	(87,554)	$ 80.70
Vested and issued	(57,677)	$ 81.04
Outstanding at December 31, 2022	341,850	$ 103.53

During the year ended December 31, 2022, 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, 2024. During the year ended December 31, 2021, 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, 2023. During the year ended December 31, 2020, the Company's Compensation Committee granted PSUs with three-year performance-based metrics that the Company was required to meet before those awards were earned, and the performance period for those grants ended on December 31, 2022. During the same period, the Company's Compensation Committee also granted PSUs 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 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, 2022, expire between 2023 and 2027.

A summary of warrant activity during the year ended December 31, 2022, is presented below:

	Warrants	Weighted-Average Exercise Price
Outstanding at December 31, 2021	578,405	$ 104.82
Granted	380,478	$ 138.33
Forfeited	(65,331)	$ 80.49
Exercised	(38,922)	$ 78.24
Outstanding at December 31, 2022	854,630	$ 122.81

The following table summarizes information about warrants outstanding as of December 31, 2022 and 2021:

Grant Date	Warrants Issued	Exercise Price	Fair Value of Warrants Issued	Outstanding at December 31, 2022	Outstanding at December 31, 2021
Throughout 2017	35,382	$53.65 to $69.96	$ 595	—	1,521
Throughout 2018	163,995	$70.91 to $80.90	$ 2,591	45,024	112,756
Throughout 2019	151,008	$74.25 to $95.61	$ 2,634	66,977	101,977
Throughout 2020	164,890	$72.65 to $104.89	$ 3,140	146,386	146,386
Throughout 2021	218,166	$99.33 to $135.97	$ 5,584	215,765	215,765
Throughout 2022	380,478	$125.32 to $143.95	$ 12,972	380,478	—
				854,630	578,405

Deferred Share Units

A summary of the Company's deferred share units ("DSUs") activity is presented below:

	Years Ended December 31, 2022	2021	2020
Weighted average grant-date fair value of DSUs granted	$ 121.00	$ 99.80	$ 103.81
Total fair value of DSUs awarded	$ 253	$ 285	$ 272

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.

A summary of activity related to DSUs during the year ended December 31, 2022, is presented below:

	Vested Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at December 31, 2021	24,442	$ 64.05
Granted	2,094	$ 121.00
Outstanding at December 31, 2022	26,536	$ 68.55

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, 2022, is presented below:

Outstanding at December 31, 2021	63,032
Cash settled	(5,203)
Outstanding at December 31, 2022	57,829

No RSUs under the Progressive Waste share-based compensation plans were granted subsequent to June 1, 2016. All remaining RSUs were vested as of December 31, 2019.

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, 2022, is presented below:

Outstanding at December 31, 2021	45,869
Cash settled	(2,299)
Outstanding at December 31, 2022	43,570

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.

15. OTHER COMPREHENSIVE INCOME (LOSS)

Other comprehensive income (loss) includes changes in the fair value of interest rate swaps that qualify for hedge accounting. The components of other comprehensive income (loss) and related tax effects for the years ended December 31, 2022, 2021 and 2020, are as follows:

	Year Ended December 31, 2022		
	Gross	Tax Effect	Net of Tax
Interest rate swap amounts reclassified into interest expense	$ 6,551	$ (1,736)	$ 4,815
Changes in fair value of interest rate swaps	76,336	(20,229)	56,107
Foreign currency translation adjustment	(157,336)	—	(157,336)
	$ (74,449)	$ (21,965)	$ (96,414)

	Year Ended December 31, 2021		
	Gross	Tax Effect	Net of Tax
Interest rate swap amounts reclassified into interest expense	$ 20,321	$ (5,385)	$ 14,936
Changes in fair value of interest rate swaps	23,287	(6,171)	17,116
Foreign currency translation adjustment	8,183	—	8,183
	$ 51,791	$ (11,556)	$ 40,235

	Year Ended December 31, 2020		
	Gross	Tax Effect	Net of Tax
Interest rate swap amounts reclassified into interest expense	$ 9,778	$ (2,591)	$ 7,187
Changes in fair value of interest rate swaps	(64,664)	17,136	(47,528)
Foreign currency translation adjustment	50,653	—	50,653
	$ (4,233)	$ 14,545	$ 10,312

A roll forward of the amounts included in AOCIL, net of taxes, is as follows:

	Interest Rate Swaps	Foreign Currency Translation Adjustment	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2020	$ (69,596)	$ 68,945	$ (651)
Amounts reclassified into earnings	14,936	—	14,936
Changes in fair value	17,116	—	17,116
Foreign currency translation adjustment	—	8,183	8,183
Balance at December 31, 2021	(37,544)	77,128	39,584
Amounts reclassified into earnings	4,815	—	4,815
Changes in fair value	56,107	—	56,107
Foreign currency translation adjustment	—	(157,336)	(157,336)
Balance at December 31, 2022	$ 23,378	$ (80,208)	$ (56,830)

16. 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.

Income before provision for income taxes consists of the following:

	Years Ended December 31,		
	2022	2021	2020
U.S.	$ 734,126	$ 574,737	$ 22,349
Non – U.S.	314,837	196,005	231,565
Income before income taxes	$ 1,048,963	$ 770,742	$ 253,914

The provision for income taxes consists of the following:

	Years Ended December 31,		
	2022	2021	2020
Current:			
U.S. Federal	$ 59,675	$ 71,180	$ 65,143
State	28,770	34,439	28,325
Non – U.S.	31,036	32,071	6,941
	119,481	137,690	100,409
Deferred:			
U.S. Federal	95,397	51,534	(36,659)
State	16,840	5,093	(8,762)
Non – U.S.	(18,756)	(42,064)	(5,066)
	93,481	14,563	(50,487)
Provision for income taxes	$ 212,962	$ 152,253	$ 49,922

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 as presented in the accompanying Consolidated Statements of Net Income and income tax provision computed at the federal statutory rate is presented on the basis of the U.S. federal statutory income tax rate of 21%, 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,		
	2022	2021	2020
U.S. federal statutory rate	21.0 %	21.0 %	21.0 %
State taxes, net of federal benefit	4.2	4.7	4.5
Deferred income tax liability adjustments	—	0.3	1.6
Effect of international operations	(4.0)	(6.3)	(7.0)
Other	(0.9)	0.1	(0.4)
	20.3 %	19.8 %	19.7 %

The comparability of the Company's income tax provision for the reported periods has been affected by variations in its income before income taxes.

The effects of international operations are primarily due to 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 the year ended December 31, 2020, the Company's income tax provision included a $27,358 expense associated with certain 2019 inter-entity payments no longer being deductible for tax purposes due to the finalization of tax regulations on April 7, 2020 under Internal Revenue Code Section 267A and a $4,148 expense related to an increase in the Company's deferred income tax liabilities resulting from the impairment of certain assets within its E&P waste services which impacted the geographical apportionment of its state income taxes.

The significant components of deferred income tax assets and liabilities, reduced by valuation allowances as applicable, are presented below:

	December 31,	
	2022	2021
Deferred income tax assets:		
Accrued expenses	$ 33,680	$ 31,840
Compensation	23,194	22,545
Contingent liabilities	19,966	21,268
Tax credits and loss carryforwards	33,019	24,415
Interest rate swaps	—	13,536
Finance costs	13,856	24,264
Gross deferred income tax assets	123,715	137,868
Less: Valuation allowance	—	—
Total deferred income tax assets	123,715	137,868
Deferred income tax liabilities:		
Goodwill and other intangibles	(434,500)	(397,855)
Property and equipment	(579,615)	(484,519)
Landfill closure and post-closure	(22,745)	(18,597)
Prepaid expenses	(15,088)	(11,534)
Investment in subsidiaries	(69,257)	(69,286)
Interest rate swaps	(8,429)	—
Other	(7,823)	(6,998)
Total deferred income tax liabilities	(1,137,457)	(988,789)
Net deferred income tax liability	$ (1,013,742)	$ (850,921)

The Company has $80,422 of Canadian tax loss carryforwards with a 20-year carryforward period which will begin to expire in 2036, as well as various U.S. state tax losses with carryforward periods up to 20 years.

As of December 31, 2022, the Company had undistributed earnings of approximately $3,393,993 for which income taxes have not been provided on permanently reinvested earnings of approximately $2,218,993. Additionally, the Company has not recorded deferred taxes on the amount of financial reporting basis in excess of tax basis of approximately $366,457 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 principal operating jurisdictions. The Company has concluded all U.S. federal income tax matters for years through 2018. Additionally, the normal reassessment period for the Company has expired for all Canadian federal income tax matters for years through 2017.

The Company did not have any unrecognized tax benefits recorded at December 31, 2022, 2021 or 2020. The Company does not anticipate the total amount of unrecognized tax benefits will significantly change by December 31, 2023. The Company recognizes interest and/or penalties related to income tax matters in income tax expense.

17. 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 the following five geographic solid waste operating segments: Eastern, Southern, Western, Central and Canada. The Company's five geographic solid waste operating segments comprise its reportable segments. Each operating segment is responsible for managing several vertically integrated operations, which are comprised of districts.

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 loss on early extinguishment of debt. 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. 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 17.

Summarized financial information concerning the Company's reportable segments for the years ended December 31, 2022, 2021 and 2020, is shown in the following tables:

Year Ended December 31, 2022	Revenue	Intercompany Revenue[b]	Reported Revenue	Segment EBITDA[c]	Depreciation and Amortization	Capital Expenditures	Total Assets[e]
Eastern	$ 2,248,793	$ (358,088)	$ 1,890,705	$ 486,649	$ 281,178	$ 244,711	$ 4,121,850
Southern	1,863,817	(196,039)	1,667,778	497,832	198,506	178,577	3,774,029
Western	1,662,358	(177,726)	1,484,632	445,894	159,899	237,193	3,332,627
Central	1,387,288	(159,168)	1,228,120	424,621	152,154	176,268	2,705,673
Canada	1,047,672	(107,048)	940,624	349,403	118,388	70,051	2,773,882
Corporate[a], [d]	—	—	—	(25,019)	8,835	5,877	426,542
	$ 8,209,928	$ (998,069)	$ 7,211,859	$ 2,179,380	$ 918,960	$ 912,677	$ 17,134,603

Year Ended December 31, 2021	Revenue	Intercompany Revenue[b]	Reported Revenue	Segment EBITDA[c]	Depreciation and Amortization	Capital Expenditures	Total Assets[e]
Eastern	$ 1,807,563	$ (286,275)	$ 1,521,288	$ 404,493	$ 239,130	$ 174,350	$ 3,652,311
Southern	1,633,402	(186,656)	1,446,746	394,982	188,977	156,527	3,513,355
Western	1,434,844	(154,656)	1,280,188	405,778	129,988	152,149	2,260,222
Central	1,188,501	(142,085)	1,046,416	359,434	134,078	144,458	2,332,564
Canada	965,705	(108,982)	856,723	339,859	111,458	68,183	2,513,608
Corporate[a], [d]	—	—	—	(19,596)	9,378	48,648	427,864
	$ 7,030,015	$ (878,654)	$ 6,151,361	$ 1,884,950	$ 813,009	$ 744,315	$ 14,699,924

Year Ended December 31, 2020	Revenue	Intercompany Revenue[b]	Reported Revenue	Segment EBITDA[c]	Depreciation and Amortization	Capital Expenditures	Total Assets[e]
Eastern	$ 1,601,980	$ (266,115)	$ 1,335,865	$ 343,446	$ 222,934	$ 181,787	$ 3,134,462
Southern	1,552,687	(183,107)	1,369,580	369,445	189,726	131,831	3,402,081
Western	1,291,882	(142,120)	1,149,762	364,790	115,151	132,344	1,861,079
Central	1,008,081	(127,758)	880,323	313,033	113,004	102,966	2,160,246
Canada	805,757	(95,297)	710,460	256,119	103,334	109,886	2,544,379
Corporate[a], [d]	—	—	—	(15,283)	8,255	5,747	890,117
	$ 6,260,387	$ (814,397)	$ 5,445,990	$ 1,631,550	$ 752,404	$ 664,561	$ 13,992,364

(a) The majority of Corporate expenses are allocated to the five operating segments. Direct acquisition expenses, expenses associated with common shares held in the deferred compensation plan exchanged for other investment options and share-based compensation expenses associated with Progressive Waste share-based grants outstanding at June 1, 2016 that were continued by the Company are not allocated to the five operating segments and comprise the net EBITDA of the Company's Corporate segment for the periods presented.

(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 3.

(d) Corporate assets include cash, debt issuance costs, equity investments, operating lease right-of-use assets and corporate facility leasehold improvements and equipment.

(e) Goodwill is included within total assets for each of the Company's five operating segments.

The following table shows changes in goodwill during the years ended December 31, 2021 and 2022, by reportable segment:

	Eastern	Southern	Western	Central	Canada	Total
Balance as of December 31, 2020	$ 1,374,577	$ 1,532,215	$ 442,862	$ 824,204	$ 1,552,792	$ 5,726,650
Goodwill acquired	233,146	56,576	96,870	68,005	—	454,597
Goodwill acquisition adjustments	—	—	—	—	(2)	(2)
Goodwill divested	—	(324)	—	—	—	(324)
Impact of changes in foreign currency	—	—	—	—	6,722	6,722
Balance as of December 31, 2021	1,607,723	1,588,467	539,732	892,209	1,559,512	6,187,643
Goodwill acquired	197,560	90,624	229,111	72,201	235,095	824,591
Impact of changes in foreign currency	—	—	—	—	(109,937)	(109,937)
Balance as of December 31, 2022	$ 1,805,283	$ 1,679,091	$ 768,843	$ 964,410	$ 1,684,670	$ 6,902,297

Property and equipment, net relating to operations in the United States and Canada are as follows:

	December 31,	
	2022	2021
United States	$ 6,201,011	$ 5,075,184
Canada	749,904	646,765
Total	$ 6,950,915	$ 5,721,949

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,		
	2022	2021	2020
Eastern segment EBITDA	$ 486,649	$ 404,493	$ 343,446
Southern segment EBITDA	497,832	394,982	369,445
Western segment EBITDA	445,894	405,778	364,790
Central segment EBITDA	424,621	359,434	313,033
Canada segment EBITDA	349,403	339,859	256,119
Subtotal reportable segments	2,204,399	1,904,546	1,646,833
Unallocated corporate overhead	(25,019)	(19,596)	(15,283)
Depreciation	(763,285)	(673,730)	(621,102)
Amortization of intangibles	(155,675)	(139,279)	(131,302)
Impairments and other operating items	(18,230)	(32,316)	(466,718)
Interest expense	(202,331)	(162,796)	(162,375)
Interest income	5,950	2,916	5,253
Other income (expense), net	3,154	6,285	(1,392)
Loss on early extinguishment of debt	—	(115,288)	—
Income before income tax provision	$ 1,048,963	$ 770,742	$ 253,914

18. 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, 2022, 2021 and 2020:

	Years Ended December 31,		
	2022	2021	2020
Numerator:			
Net income attributable to Waste Connections for basic and diluted earnings per share	$ 835,662	$ 618,047	$ 204,677
Denominator:			
Basic shares outstanding	257,383,578	261,166,723	263,189,699
Dilutive effect of equity-based awards	655,223	561,747	497,840
Diluted shares outstanding	258,038,801	261,728,470	263,687,539

19. 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 non-union Canadian employees, Waste Connections and its subsidiaries make a matching contribution to a deferred profit sharing plan ("DPSP") of up to 5% 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 100% of every dollar of a participating employee's pre-tax contributions until the employee's contributions equal 5% of the employee's eligible

compensation, subject to certain limitations imposed by the U.S. Internal Revenue Code. The Company's matching contributions under the 401(k) Plans were suspended from June 1, 2020 to December 31, 2020. The Company reinstated its matching contributions effective January 1, 2021.

Total employer expenses, including employer matching contributions, for the DPSP and 401(k) Plans were $37,165, $31,834 and $16,350, respectively, during the years ended December 31, 2022, 2021 and 2020. These amounts include matching contributions Waste Connections made under the Deferred Compensation Plan, described below.

Multiemployer Pension Plans: The Company also participates in 17 "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 (b),(c)	Company Contributions [d]			Expiration Date of Collective Bargaining Agreement
		2022	2021		2022	2021	2020	
Western Conference of Teamsters Pension Trust	91-6145047 - 001	Green	Green	Not applicable	$ 5,803	$ 4,963	$ 4,841	4/30/2023 to 6/30/2027
Local 731, I.B. of T., Pension Fund	36-6513567 - 001	Green for the plan year beginning 10/1/2021	Green for the plan year beginning 10/1/2021	Not applicable	4,484	4,504	4,628	9/30/2023
Suburban Teamsters of Northern Illinois Pension Fund	36-6155778 - 001	Green	Green	Not applicable	2,516	2,300	2,080	2/29/2024
Teamsters Local 301 Pension Fund	36-6492992 - 001	Green	Green	Not applicable	1,310	841	673	9/30/2023
Midwest Operating Engineers Pension Plan	36-6140097 - 001	Green for the plan year beginning 4/1/2022	Green for the plan year beginning 4/1/2021	Not applicable	542	424	316	10/31/2025
Automobile Mechanics' Local No. 701 Union and Industry Pension Fund	36-6042061 - 001	Green	Green	Not applicable	470	439	457	12/31/2022
Local 813 Pension Trust Fund	13-1975659 - 001	Critical	Critical for the plan year beginning 1/1/2021	Implemented	429	258	183	11/30/2027
Locals 302 & 612 of the IOUE - Employers Construction Industry Retirement Plan	91-6028571 - 001	Green	Green	Not applicable	338	313	298	11/16/2022
IAM National Pension Fund	51-6031295 - 002	Critical	Critical	Implemented	342	299	310	12/31/2022
International Union of Operating Engineers Pension Trust	85512-1	Green as of 4/30/2020	Green as of 4/30/2020	Not applicable	281	295	279	3/31/2024
Multi-Sector Pension Plan	1085653	Critical as of 1/1/2021	Critical as of 1/1/2021	Not applicable	249	265	196	12/31/2023
Recycling and General Industrial Union Local 108 Pension Fund	13-6366378 - 001	Green	Green	Not applicable	230	217	269	2/28/2027
Nurses and Local 813 IBT Retirement Plan	13-3628926 - 001	Green	Green	Not applicable	97	58	52	11/30/2027
Contributions to other multiemployer plans					65	75	10	
					$ 17,156	$ 15,251	$ 14,592	

(a) Unless otherwise noted in the table above, the most recent Pension Protection Act zone status available in 2022 and 2021 is for the plans' years ended December 31, 2021 and 2020, 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, 2022 and 2021.

(d) Of the Multiemployer Pension Plans considered to be individually significant, the Company was listed in the Form 5500 as providing more than 5% of the total contributions for the following: 1) Local No. 731, I.B. of T., Pension Fund for plan years ending September 30, 2021, 2020 and 2019; 2) Teamsters Local 301 Pension Fund for plan years ending December 31, 2021, 2020 and 2019; 3) Suburban Teamsters of Northern Illinois Pension Plan for the plan years ending December 31, 2021 and 2020; and 4) Recycling and General Industrial Union Local 108 Pension Fund for the plan years ending December 31, 2021, 2020 and 2019.

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. 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 under-funded 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: The Waste Connections US, Inc. Nonqualified Deferred Compensation Plan was assumed by the Company on June 1, 2016 (as amended, restated, assumed, supplemented or otherwise modified from time to time, the "Deferred Compensation Plan"). 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, the 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, any compensation deferred under the Deferred Compensation Plan constitutes an unsecured obligation of the Company to pay the participants in the future and, as such, is 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 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. The Company's matching contributions to the Deferred Compensation plan were suspended from June 1, 2020 to December 31, 2020. The Company reinstated its matching contributions effective January 1, 2021. For the years ended December 31, 2022 and 2021, and during the period from January 1, 2020 through May 31, 2020, the Company also made matching contributions to the Deferred Compensation Plan of 100% of every dollar of a participating employee's pre-tax eligible contributions until the employee's contributions equaled 5% 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. The Company's total liability for deferred compensation at December 31, 2022 and 2021 was $40,407 and $50,738, respectively, which was recorded in Other long-term liabilities in the Consolidated Balance Sheets.

20. SUBSEQUENT EVENT

On February 15, 2023, the Company announced that its Board of Directors approved a regular quarterly cash dividend of $0.255 per Company common share. The dividend will be paid on March 15, 2023, to shareholders of record on the close of business on March 1, 2023.

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 President and Chief Executive Officer and our Executive Vice President and 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 President and Chief Executive Officer and Executive Vice President and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2022, 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 President and Chief Executive Officer and Executive Vice President 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 GAAP. 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 GAAP; (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 President and Chief Executive Officer and Executive Vice President and Chief Financial Officer, of the effectiveness of the design and operation of our internal control over financial reporting as of December 31, 2022. 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, 2022.

The effectiveness of our internal control over financial reporting as of December 31, 2022, 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 President and Chief Executive Officer and Executive Vice President 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, 2022, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Except as set forth above in Part I under "Information About Our Executive Officers" 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," "Board Composition" and "Section 16(a) Beneficial Ownership Reporting Compliance" (if applicable) in our definitive Management Information Circular and Proxy Statement for the 2023 Annual Meeting of Shareholders, which we will file with the SEC pursuant to Regulation 14A within 120 days after the end of our 2022 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 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 into 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," "Corporate Governance," and "Board Composition" in our definitive Management Information Circular and Proxy Statement for the 2023 Annual 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 2023 Annual 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," "Corporate Governance" and Board

Composition" in our definitive Management Information Circular and Proxy Statement for the 2023 Annual 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 2023 Annual Meeting of Shareholders.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) See Index to Consolidated Financial Statements on page 77. The following Financial Statement Schedule is filed herewith on page 145 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.

Exhibit Number	Description of Exhibits
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	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)
4.2	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)
4.3	Second Supplemental Indenture, dated as of April 16, 2019, 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 April 16, 2019)
4.4	Third Supplemental Indenture, dated as of January 23, 2020, 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 January 23, 2020)
4.5	Fourth Supplemental Indenture, dated as of March 13, 2020, 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 March 13, 2020)

Exhibit Number	Description of Exhibits
4.6	Fifth Supplemental Indenture, dated as of September 20, 2021, 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 September 20, 2021)
4.7	Sixth Supplemental Indenture, dated as of March 9, 2022, by and between Waste Connections, Inc. and U.S. Bank Trust Company, National Association, as trustee (incorporated by reference to Exhibit 4.2 of the Registrant's Form 8-K filed on March 9, 2022)
4.8	Seventh Supplemental Indenture, dated as of August 18, 2022, by and between Waste Connections, Inc. and U.S. Bank Trust Company National Association, as trustee (incorporated by reference to Exhibit 4.2 of the Registrant's Form 8-K filed on August 18, 2022)
4.9	Second Amended and Restated Revolving Credit and Term Loan Agreement, dated as of July 30, 2021 (incorporated by reference to Exhibit 4.1 of the Registrant's Form 8-K filed on July 30, 2021)
4.10	Amendment No. 1 to Second Amended and Restated Revolving Credit and Term Loan Agreement, dated as of October 31, 2022 (incorporated by reference to Exhibit 4.2 of the Registrant's Form 8-K filed on November 1, 2022)
4.11	Term Loan Agreement, dated as of October 31, 2022 (incorporated by reference to Exhibit 4.1 of the Registrant's Form 8-K filed on November 1, 2022)
4.12	Description of Securities (incorporated by reference to Exhibit 4.21 of the Registrant's Form 10-K filed on February 13, 2020
4.13	Letter of Credit Facility Reimbursement Agreement, dated as of February 25,2022, by and between the Registrant and The Bank of Nova Scotia (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on February 25, 2022)
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 +	Waste Connections, Inc. 2016 Incentive Award Plan (incorporated by reference to Exhibit 10.12 of the Registrant's Form 10-Q filed on October 30, 2018)
10.3 +	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)
10.4 +	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)
10.5 +	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)
10.6 +	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)
10.7 +	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)
10.8 +	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)
10.9 +	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)

Exhibit Number	Description of Exhibits
10.10 +	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)
10.11 +	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)
10.12 +	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)
10.13 +	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)
10.14 +	Separation Benefits Plan of Waste Connections US, Inc., as amended and restated effective July 26, 2022 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q filed on August 3, 2022)
10.15 +	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)
10.16 +	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)
10.17 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Eric O. Hansen, effective February 12, 2019 (incorporated by reference to Exhibit 10.32 of the Registrant's Form 10-K filed on February 14, 2019)
10.18 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Ronald J. Mittelstaedt, effective July 25, 2019 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on July 26, 2019)
10.19 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Worthing F. Jackman, effective July 25, 2019 (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on July 26, 2019)
10.20 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Darrell W. Chambliss, effective July 25, 2019 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q filed on July 30, 2019)
10.21 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and James M. Little, effective July 25, 2019 (incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q filed on July 30, 2019)
10.22 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Patrick J. Shea, effective July 25, 2019 (incorporated by reference to Exhibit 10.3 of the Registrant's Form 10-Q filed on July 30, 2019)
10.23 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Jason Craft, effective July 1, 2020 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q filed on October 29, 2020)
10.24 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Mary Anne Whitney, effective February 1, 2021 (incorporated by reference to Exhibit 10.30 of the Registrant's Form 10-K filed on February 18, 2021)
10.25 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Robert M. Cloninger, effective February 1, 2022 (incorporated by reference to Exhibit 10.30 of the Registrant's Form 10-K filed on February 17, 2022)

Exhibit Number	Description of Exhibits
10.26 +	Separation Benefits Plan Participation Letter Agreement by and between Waste Connections US, Inc. and Susan R. Netherton, effective February 1, 2022 (incorporated by reference to Exhibit 10.31 of the Registrant's Form 10-K filed on February 17, 2022)
10.27 + *	Form of Addendum to Letter Agreement dated November 10, 2022, between Waste Connections US, Inc. and each of its officers party to a Letter Agreement dated before July 26, 2022
10.28 +	Waste Connections, Inc. 2020 Employee Share Purchase Plan (incorporated by reference to Exhibit 10.29 of the Registrant's Form 10-K filed on February 18, 2021)
21.1 *	Subsidiaries of the Registrant
23.1 *	Consent of Independent Registered Public Accounting Firm
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
104	Cover Page Interactive Data File – The cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.

* Filed herewith.
\+ Management contract or compensatory plan, contract or arrangement.

ITEM 16. FORM 10-K SUMMARY

None.

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/ Worthing F. Jackman
Worthing F. Jackman
President and Chief Executive Officer

Date: February 16, 2023

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Worthing F. Jackman and Mary Anne Whitney, 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.

Signature	Title	Date
/s/ Worthing F. Jackman Worthing F. Jackman	President and Chief Executive Officer (principal executive officer)	February 16, 2023
/s/ Mary Anne Whitney Mary Anne Whitney	Executive Vice President and Chief Financial Officer (principal financial officer)	February 16, 2023
/s/ David G. Eddie David G. Eddie	Senior Vice President and Chief Accounting Officer (principal accounting officer)	February 16, 2023
/s/ Ronald J. Mittelstaedt Ronald J. Mittelstaedt	Executive Chairman	February 16, 2023
/s/ Andrea E. Bertone Andrea E. Bertone	Director	February 16, 2023
/s/ Edward E. Guillet Edward E. Guillet	Director	February 16, 2023
/s/ Michael W. Harlan Michael W. Harlan	Director	February 16, 2023
/s/ Larry S. Hughes Larry S. Hughes	Director	February 16, 2023
/s/ Elise L. Jordan Elise L. Jordan	Director	February 16, 2023
/s/ Susan Lee Susan Lee	Director	February 16, 2023
/s/ William J. Razzouk William J. Razzouk	Director	February 16, 2023

WASTE CONNECTIONS, INC.

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS
Years Ended December 31, 2022, 2021 and 2020
(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 Credit Losses:					
Year Ended December 31, 2022	$ 18,480	$ 17,259	$ —	$ (12,800)	$ 22,939
Year Ended December 31, 2021	$ 19,380	$ 9,727	$ —	$ (10,627)	$ 18,480
Year Ended December 31, 2020	$ 16,432	$ 15,546	$ —	$ (12,598)	$ 19,380

BOARD OF DIRECTORS

RONALD J. MITTELSTAEDT
Executive Chairman

ANDREA E. BERTONE
President, Duke Energy International, LLC (retired) – a subsidiary of Duke Energy Corporation, a Fortune 150 energy holding company

EDWARD E. "NED" GUILLET
Senior Vice President, Human Resources (retired) The Gillette Company – a global consumer products company

MICHAEL W. HARLAN
Chairman and Chief Executive Officer of TruHorizon Environmental Solutions – an oilfield services company, and President of Harlan Capital Advisors, LLC

LARRY S. HUGHES
Vice President, Finance and Chief Financial Officer (retired) of West Fraser Timber Co. Ltd. – an integrated wood products company

WORTHING F. JACKMAN
President and Chief Executive Officer

ELISE L. JORDAN
Executive Vice President and CFO of FedEx Express – the largest transportation company in the FedEx Corp. enterprise

SUSAN "SUE" LEE
Senior Vice President, Human Resources and Communications (retired) Suncor Energy Inc. – Canada's leading integrated energy company

WILLIAM J. RAZZOUK
Chairman (retired) of Newgistics, Inc. – a provider of intelligent order delivery and returns management solutions

EXECUTIVE OFFICERS

RONALD J. MITTELSTAEDT
Executive Chairman

WORTHING F. JACKMAN
President and Chief Executive Officer

DARRELL W. CHAMBLISS
Executive Vice President and Chief Operating Officer

JAMES M. LITTLE
Executive Vice President – Engineering and Disposal

PATRICK J. SHEA
Executive Vice President, General Counsel and Secretary

MARY ANNE WHITNEY
Executive Vice President and Chief Financial Officer

MATTHEW S. BLACK
Senior Vice President – Chief Accounting Officer

ROBERT M. CLONINGER
Senior Vice President, Deputy General Counsel and Assistant Secretary

JASON J. CRAFT
Senior Vice President – Operations

DAVID G. EDDIE
Senior Vice President – Performance Optimization

ERIC O. HANSEN
Senior Vice President – Chief Information Officer

SUSAN R. NETHERTON
Senior Vice President – People, Training and Development

ANDREA R. CLICK
Vice President – Tax

KEITH P. GORDON
Vice President – Information Systems

MICHELLE L. LITTLE
Vice President – Engagement Solutions

SHAWN W. MANDEL
Vice President – Safety and Risk Management

JOHN M. PERKEY
Vice President, Deputy General Counsel – Compliance and Government Affairs

JASON W. PRATT
Vice President – Corporate Controller

KURT R. SHANER
Vice President – Engineering and Sustainability

GREGORY THIBODEAUX
Vice President – Maintenance and Fleet Management

COLIN G. WITTKE
Vice President – Sales

REGIONAL OFFICERS

Western Region

DAN SCHOOLER
Regional Vice President

KEVIN JOYCE
Regional Controller

Central Region

AARON BRADLEY
Regional Vice President

HEATHER MORRIS
Regional Controller

Southern Region

ROB NIELSEN
Regional Vice President

TYLER KENNEDY
Regional Controller

Eastern Region

SCOTT JOHNSON
Regional Vice President

KORTNEY ROBERTS
Regional Controller

MidSouth Region

PETE LYONS
Regional Vice President

DOUG MCDONALD
Regional Controller

Canada Region

DAN PIO
President

DEREK TAN
Regional Controller



PRINCIPAL EXECUTIVE OFFICES

6220 Hwy 7, Suite 600
Woodbridge, Ontario L4H 4G3
Canada

PRINCIPAL ADMINISTRATIVE OFFICES

3 Waterway Square Place, Suite 110
The Woodlands, TX 77380 | USA

Tel: (832) 442-2200
wasteconnections.com

CORPORATE INFORMATION

Waste Connections' common shares are traded on the New York Stock Exchange and the Toronto Stock Exchange under the ticker symbol WCN.

TRANSFER AGENT & REGISTRAR

Computershare
100 University Avenue, 8th Floor
Toronto, Ontario M5J 2Y1
Canada

Tel: (800) 564-6253
www.computershare.com/ca/en

ANNUAL MEETING

Shareholders are invited to attend our annual meeting of shareholders on May 19, 2023, at 8:00 a.m. (CST) at our Principal Administrative Offices.

INVESTOR RELATIONS

Additional copies of this report, our Form 10-K, our Management Information Circular and Proxy Statement and other financial information are available to shareholders by contacting our Investor Relations Department.

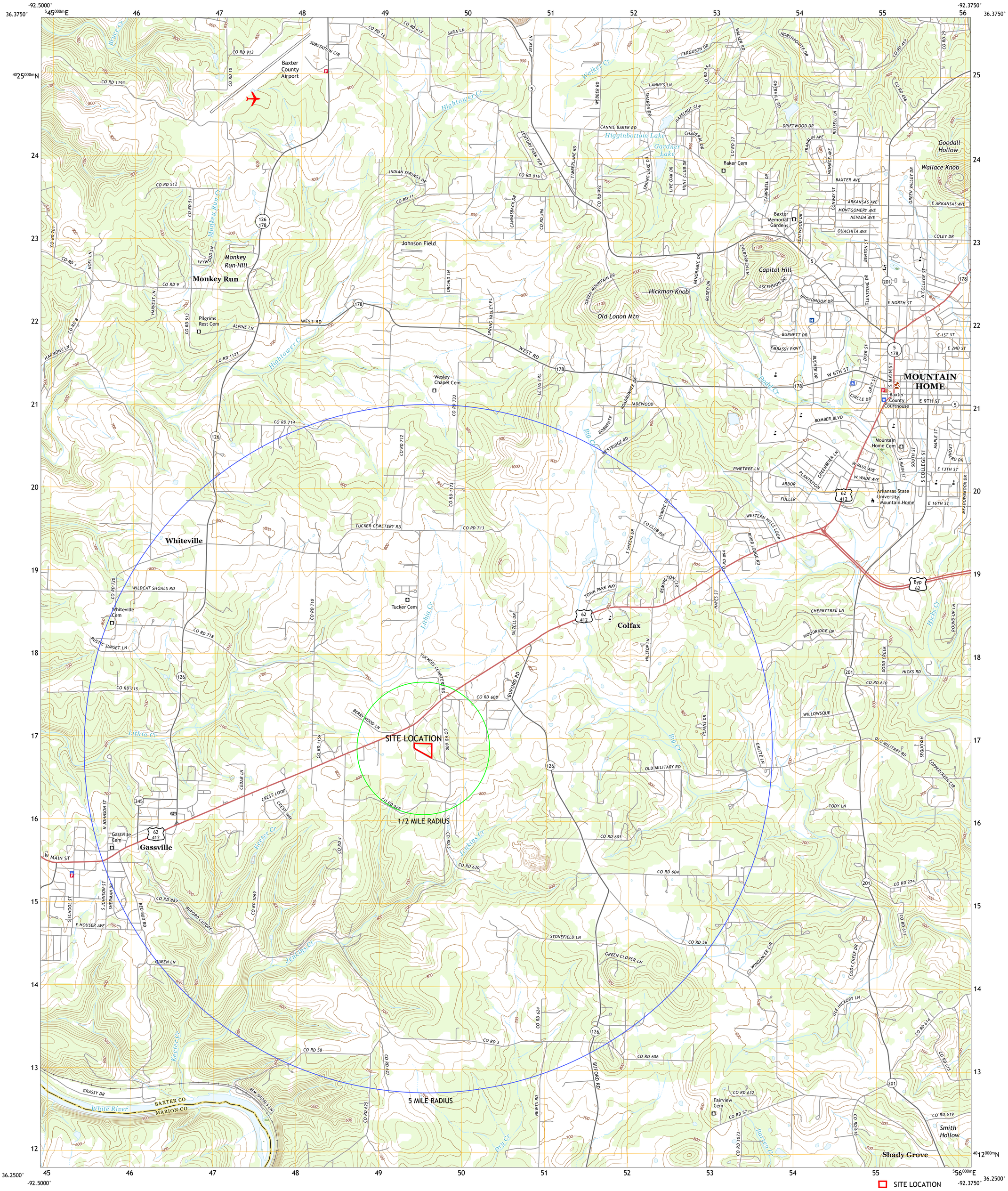
Tel: (832) 442-2200
investors.wasteconnections.com

For more information on our Sustainability initiatives, visit wasteconnections.com/sustainability.

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

MOUNTAIN HOME WEST QUADRANGLE
ARKANSAS
7.5-MINUTE SERIES



SITE LOCATION
1/2 MILE RADIUS
5 MILE RADIUS
AIRPORT

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 15S

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, October 2017 - November 2017
Roads.....U.S. Census Bureau, 2017
Names.....GNIS, 1980 - 2020
Hydrography.....National Hydrography Dataset, 2001 - 2018
Contours.....National Elevation Dataset, 2018
Boundaries.....Multiple sources; see metadata file 2018 - 2019
Public Land Survey System.....BLM, 2018
Wetlands.....FWS National Wetlands Inventory 1983

MN
GN
0°9′ 3 MILS
0°20′ 6 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
WA
Grid Zone Designation 15S

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

ARKANSAS
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

1 2 3
4 5
6 7 8
ADJOINING QUADRANGLES
1 Bull Shoals
2 Midway
3 Clarkridge
4 Cotter
5 Mountain Home East
6 Rea Valley
7 Buffalo City
8 Norfork

GASSVILLE TRANSFER STATION SITE LOCATION MAP
MOUNTAIN HOME WEST, AR
2020

NSN 7643016353275
NGA REF NO. USGSX24K30934

WASTE CONNECTIONS OF ARKANSAS INC

268 CR 5
GASSVILLE, AR 72635

Basic | Land | Sales | Valuation | Taxes | Receipts | Improvements | Parcel Boundary

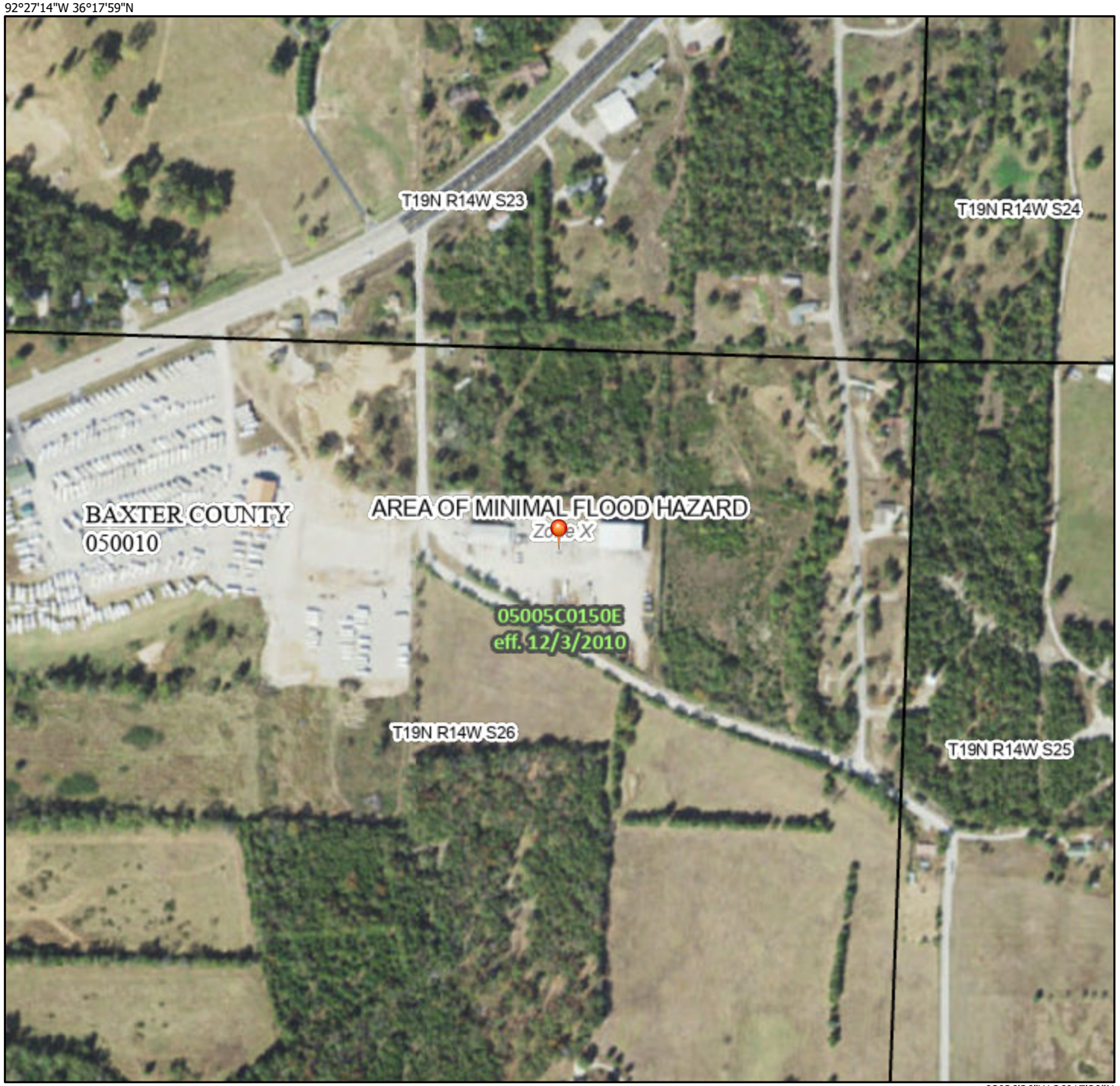
Basic Info

Parcel Number:	001-08585-000
County Name:	Baxter County
Property Address:	WASTE CONNECTIONS OF ARKANSAS INC 268 CR 5 GASSVILLE, AR 72635 **Map This Address**
Mailing Address:	WASTE CONNECTIONS OF AR INC 3WATERWAY SQUARE PLACE STE 110 THE WOODLANDS TX 77380
Collector's Mailing Address:	WASTE CONNECTIONS OF AR INC 3WATERWAY SQUARE PLACE STE 110 THE WOODLANDS, TX 77380
Total Acres:	4.81
Timber Acres:	0.00
Sec-Twp-Rng:	26-19-14
Lot/Block:	/
Subdivision:	
Legal Description:	Part of the Northeast 1/4 Northeast 1/4 of Section 26, Township 19 North, Range 14 West, Baxter County, Arkansas, described as follows: Commencing at the Northwest corner of said forty; thence S 89° 09' 15" E, a distance of 681.48 Feet; thence S 00° 38' 42" W, a distance of 444.97 Feet to the point of beginning; Thence continue S 00° 38' 42" W, a distance of 489.02 Feet to the northeastern right of way of County Road 5; thence continue along the right of way of said county road the following courses: N 61° 20' 50" W, a distance of 659.50 Feet; N 33° 11' 00" W, a distance of 75.52 Feet; N 01° 57' 52" W, a distance of 143.24 Feet; thence leaving said right of way S 36° 56' 58" E, a distance of 631.39 Feet to the point of beginning containing 4.81 acres, more or less.
School District:	09R MOUNTAIN HOME RURAL
Improvement Districts:	DISTRICT Q / COTTER-GASSVILLE
Homestead Parcel?:	No
Tax Status:	Taxable
Over 65?:	No

National Flood Hazard Layer FIRMette

FEMA

92°27'14"W 36°17'59"N



92°26'36"W 36°17'30"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

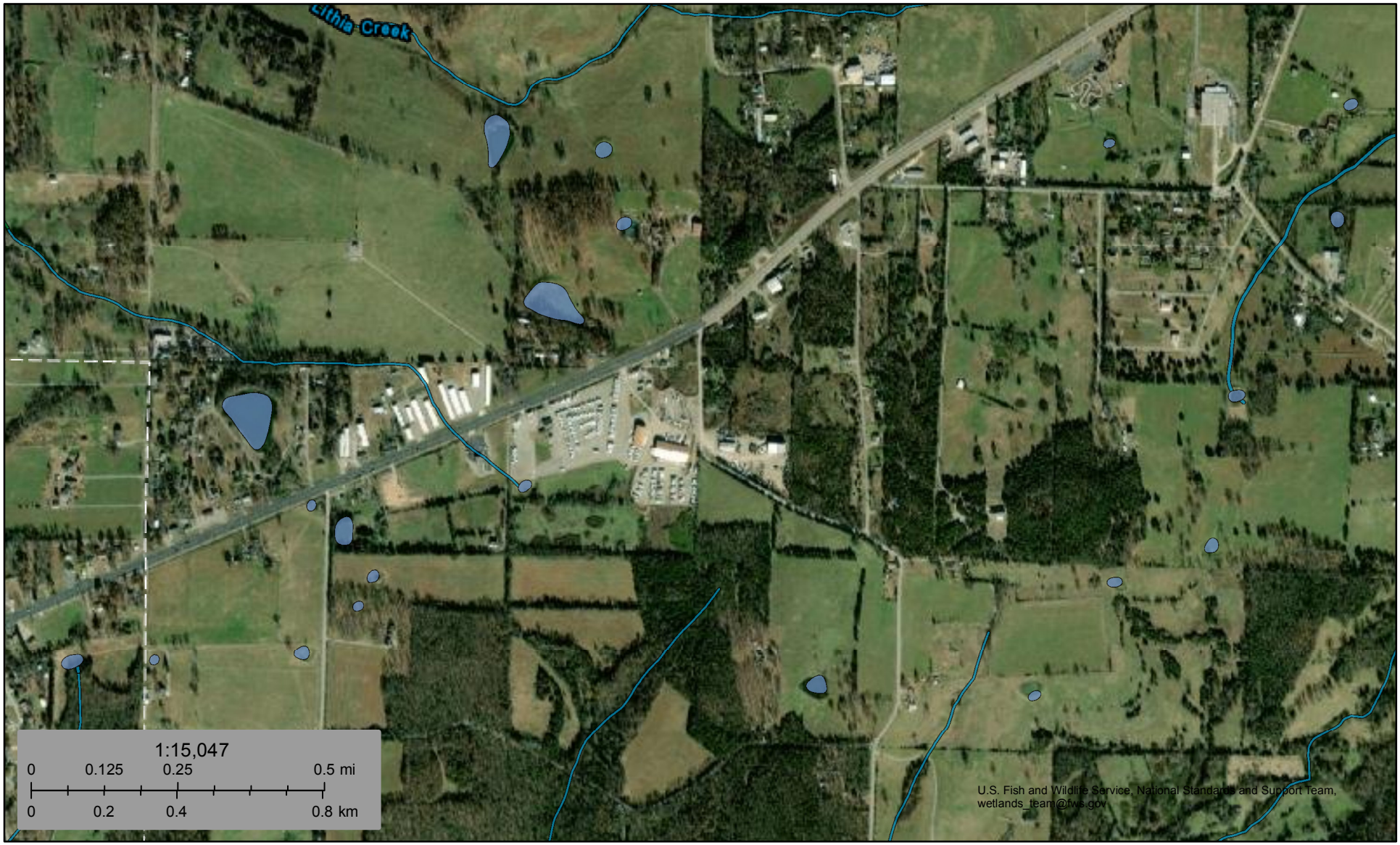
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/23/2022 at 11:10 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

U.S. Fish and Wildlife Service

National Wetlands Inventory

Gassville TS - Wetlands



December 23, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



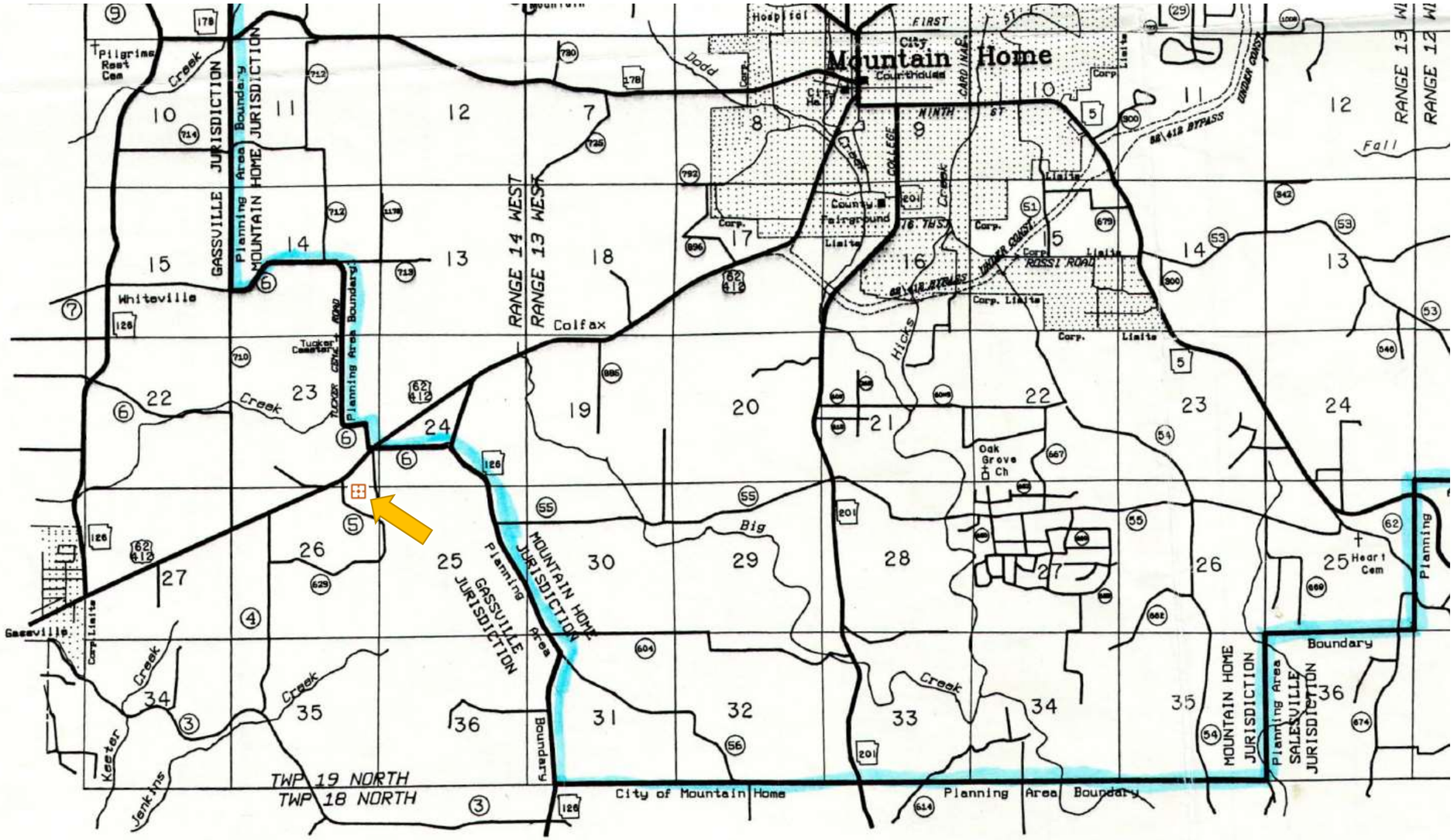
Search by RadiusUSGS Arkansas Water Science Center

Well ID	Land Owner	Contractor Name & Number	Driller Name & Number	Pump Installer Name & Number	Latitude	Longitude	County	Date Well Completed	Water Level	Yield	Dia.	Use Type
922634361739	PAT GOETTLER	FLIPPIN BROS. DRILLING CO., IN(1108)	MARCUS FLIPPIN(2070)	Not Available (Not Available)	36.29416667	-92.44277778	BAXTER(5)	2-Oct-97	120	20	6	DO
922650361720	EARL BETTS	FOSTER DRILLING CO.(1171)	GARY FOSTER(2305)	Not Available (Not Available)	36.28888889	-92.44722222	BAXTER(5)	25-Apr-03		0		
922700361758	JACK L. GREGORY	HAMMACK WELL DRILLING(1388)	GARY HAMMACK(2392)	Not Available (Not Available)	36.29944444	-92.45	BAXTER(5)	29-Oct-96	80	18	6	DO
922705361808	MICHAEL TUCKER	FLIPPIN BROS. DRILLING CO., IN(1108)	MARCUS FLIPPIN(2070)	4315(HAROLD W. FLIPPIN)	36.30222222	-92.45138889	BAXTER(5)	20-Feb-92	100	15	6	DO
922706361801	JACK GREGORY	HAMMACK WELL DRILLING(1388)	GARY HAMMACK(2392)	Not Available (Not Available)	36.30027778	-92.45166667	BAXTER(5)	20-Jul-06	30	18	-9999	
922714361743	GARY FARRIS	HAMMACK WELL DRILLING(1388)	GARY HAMMACK(2392)	Not Available (Not Available)	36.29527778	-92.45388889	BAXTER(5)	20-Nov-06	18	8	-9999	
922718361749	Jeff Melford	A.A. SHIPMAN DRILLING(1573)	JOHN KING(2313)	Not Available (Not Available)	36.29694444	-92.455	BAXTER(5)	14-May-20	25	25	6	DO

SCS ENGINEERS
9780 Maumelle Blvd.
N. Little Rock, Arkansas 72113
Office: (501) 812-4551
www.scsengineers.com

Water Well Locations & Records
Gassville Solid Waste Transfer Station
Gassville, Arkansas

FIGURE 7
Date: 9/20/23
By: BR


Mountain Home
City
Courthouse
FIRST ST
NINTH ST
COLLEGE
CARDINAL
Creek
Dodd
Corp. Limits
County Fairground
Corp.
Limits
Corp. Limits
ROSSI ROAD
Corp. Limits
Corp.
Limits
Fall
Creek
RANGE 14 WEST
RANGE 13 WEST
RANGE 13 WEST
RANGE 12 WEST
Colfax
Whiteville
Tucker Cemetery
TUCKER CREEK ROAD
Planning Area Boundary
GASSVILLE JURISDICTION
Planning Area Boundary
MOUNTAIN HOME JURISDICTION
Creek
Oak Grove Ch
Big
Creek
Creek
Creek
Creek
Gassville
Corp. Limits
Kester
Jenkins
TWP 19 NORTH
TWP 18 NORTH
Boundary
MOUNTAIN HOME JURISDICTION
Planning Area
GASSVILLE JURISDICTION
Planning Area Boundary
City of Mountain Home
Planning Area Boundary
Heart Cem
Planning
Pilgrim Rest Cem
Creek
Hospital
BYPASS
BYPASS
BYPASS
BYPASS
Limits
Limits
Limits

VERKAMP LAW OFFICE, P.A.
P.O. Box 425
503 East Main Street
Charleston, AR 72933

John P. Verkamp
jverkamp@sbcglobal.net

(479) 965-2224, telephone
(479) 965-2229, facsimile

May 11, 2023

SCS Engineers
ATTN: Stacy Whitmer
11219 Richardson Drive
North Little Rock, AR 72113

RE: Transfer Station Permit Transfer; Gassville, AR; Additional Tonnage

Dear Ms. Whitmer:

This letter is being sent in my capacity as attorney for the Ozark Mountain Regional Solid Waste Management District. The board of the District took up the issue of the transfer of the permit for the transfer station in Gassville, AR. The permit is currently held by Methvin Sanitation. The transfer of the permit will be to Waste Connections of Arkansas. It is also understood that with the transfer of the permit to Waste Connections, there will be a request from Arkansas DEQ to allow additional tonnage or throughput of solid waste at that existing transfer station. The board took up these items, and after a motion was duly made and seconded, the board voted unanimously to approve of these requests. Therefore, this letter is being sent as an expression of the consent of the Ozark Mountain Regional Solid Waste Management District board that the transfer of the permit to Waste Connections is agreeable and that the request for additional tonnage or throughput at the Gassville transfer station is agreeable as well.

If you need anything further from me or the district, please let me know.

Kindest regards.

Sincerely,

John P. Verkamp

JPV:bmw



Image Source:

USGS – Earth Explorer - https://earthexplorer.usgs.gov/

SCS ENGINEERS
9780 Maumelle Blvd.
N. Little Rock, Arkansas 72113
Office: (501) 812-4551
www.scsengineers.com

Site Layout

Gassville Transfer Station

Gassville, Arkansas

FIGURE 2

Date: 9/20/2023

By: BR



N

W E

S

Site Location:

Scale:

0 100 200 400

Feet

Image Source:

USGS – Earth Explorer - https://earthexplorer.usgs.gov/

SCS ENGINEERS

9780 Maumelle Blvd.

N. Little Rock, Arkansas 72113

Office: (501) 812-4551

www.scsengineers.com

Site Location & Aerial

Gassville Transfer Station

Gassville, Arkansas

FIGURE 1

Date: 9/20/2023

By: BR

SCS ENGINEERS



PLAN OF OPERATIONS
GASSVILLE TRANSFER STATION
Gassville, Arkansas

Presented to:

Waste Connections of Arkansas, Inc.
Gassville, Arkansas 72635

Presented by:

SCS ENGINEERS
11219 Richardson Drive
North Little Rock, Arkansas 72113
501-812-4551

September 2023
File No. 27223415.00

Offices Nationwide
www.scsengineers.com

PLAN OF OPERATIONS
GASSVILLE TRANSFER STATION
Gassville, Arkansas

Presented to:
Waste Connections of Arkansas, Inc.
Gassville, Arkansas 72635

Presented by:

SCS ENGINEERS
11219 Richardson Drive
North Little Rock, Arkansas 72113
501-812-4551

September 2023
File No. 27223415.00

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8.0 LOADING OPERATIONS AND STORAGE AREAS 2
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LIST OF FIGURES

Figure 1 – Site Location Map
Figure 2 – Facility Map

LIST OF APPENDICES

Appendix A – Emergency Response List
Appendix B – Financial Assurance Documentation

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER

I hereby certify that I am familiar with the provision of Arkansas Pollution Control and Ecology Commission Regulation No. 22, as amended, and attest that this Operations Plan has been prepared in accordance with sound environmental engineering practices, and applicable state and local requirements.

Prepared and Submitted by:

Benjamin Reynolds, P.E.
Senior Project Professional
SCS Engineers
COA# 921

PLAN OF OPERATIONS
GASSVILLE SOLID WASTE TRANSFER STATION
GASSVILLE, ARKANSAS
September 2023

1.0 INTRODUCTION

This Plan of Operations document contains the operating procedures for the Gassville Solid Waste Transfer Station (Gassville TS) in Gassville, Arkansas as required by the Arkansas Department of Environmental Quality (ADEQ) Regulation 22.904. The facility is owned by Waste Connections of Arkansas, Inc. (WC).

This document includes a description of personnel and equipment requirements, operating hours, housekeeping procedures, record keeping procedures, and contingency plans that will be utilized in connection with the operation of the transfer station.

2.0 HOURS OF OPERATION

Monday through Friday 8:00 am to 4:00 pm
Saturday from 8:00 am to 12:00 pm
Sunday, Closed

The facility is closed on the following holidays:
- Thanksgiving Day
- Christmas Day

3.0 FACILITY CONTACT INFORMATION

Facility Owner
Waste Connections of Arkansas, Inc.
3 Waterway Square Place, Suite 110
The Woodlands, TX 77380

Facility Physical Address
162 County Road 5
Gassville, Arkansas 72635
(870) 741-8095

4.0 FACILITY PERSONNEL

The following personnel will be staffed at the transfer station:

- Site Manager
- Scale Attendant
- Equipment Operator

WCI employees or WC contractor will drive trucks to the designated landfill for disposal. Actual staff is subject to change, however at least one Manager licensed in accordance with Regulation 27 of the Arkansas Pollution Control and Ecology Commission will be present at the transfer station during all hours of operation.

5.0 DUTIES OF PERSONNEL

Site Manager – Has responsibility for all operations at the facility. The Manager of the facility will be responsible for documenting incoming waste, outgoing waste, sources or waste, Type or Class of waste accepted, daily accounting for monies accepted, and daily labor activities. The site manager will be a licensed site operator who has been certified in accordance with Regulation Number 27.

Hard hats, safety glasses, and hearing protection are available to site personnel through the site manager. Fire extinguishers are mounted in the transfer station, office areas, and in the vehicle maintenance area. An eye wash station is available onsite near the transfer station. Additionally, an office and restroom facilities are located within the permitted boundary.

6.0 FACILITY EQUIPMENT

The facility equipment includes four (4) "enclosed" roll-off boxes, four (4) "open top" roll-off boxes for Class 4 wastes, (1) roll-off yard truck, one (1) front-end loader, drive-on scales with electronic printers, and additional tools and safety equipment. The on-site equipment list may vary based on customer requirements, facility operations, or other internal requirements.

7.0 TRAFFIC CONTROL

Ingress and egress at the facility will be via an all-weather access road from County Road 5. Once at the transfer station, drivers will be subject to the direction of onsite signs or Gassville Transfer Station personnel. If needed, an employee will be dispatched to direct incoming trucks so that waste transfer operations may proceed in a safe and efficient manner.

8.0 LOADING OPERATIONS AND STORAGE AREAS

Incoming trucks will be directed to an appropriate location within the building to unload. All unloading will take place within the building by disposing waste onto the floor of the transfer

station. A frontend loader will push waste into open top transfer trailers located in the transfer tunnel of the waste pit inside the transfer station building. The waste floor is designed to capture any liquids and prevent the migration of those liquids to stormwater. All refuse will be loaded into collection trailers in the shortest time possible.

Waste will be loaded into trailers upon receipt. Partially loaded trailers may remain on site until the next day when they are loaded to capacity. Maximum storage time will be 24 hours.

No putrescible waste will be stored outside of the facility building outside of loaded enclosed containers awaiting transfer or covered roll-off boxes. Any non-putrescible solid waste recovered for recycling will be stored outside for no longer than 1-week unless containerized so that it will not come into contact with rainfall.

9.0 LITTER CONTROL

The site manager will utilize the following procedures to insure that blowing litter is minimized:

1. Commercial unloading and waste transfer operations will take place inside of the building.
2. Waste from the public is placed into an enclosed transfer trailer and transferred in to an enclosed compactor receiver box daily.
3. Equipment operators will load trailers in a timely manner.
4. Trailers will be properly enclosed once filled.
5. The site manager or personnel will collect litter as required.

In the event of a significant wind event or other unusual weather conditions, the site manager will collect blowing litter within 48 hours or the shortest possible time.

10.0 VECTOR CONTROL

The transfer station will be operated in a manner to prevent conditions favorable to rodents, insects, and other vectors. No unloading or refuse will be allowed outside of the building and all refuse will be loaded into designated enclosed containers in a timely manner. All waste will be removed from the transfer station concrete floor each day and the floor will be washed down or cleaned as needed. All areas of the Gassville Transfer Station are readily accessible for general cleaning and the application of vector repellents if necessary.

11.0 SCREENING PROCEDURES

The purpose of implementing screening procedures is to prevent prohibited wastes from entering the facility and ultimately the landfill. The Gassville Transfer Station has screening procedures for waste and for Class 4 material. The procedures for screening each are discussed below.

A sign is posted at the entrance of the facility with the hours of operation and a list of acceptable and unacceptable wastes. Acceptable wastes include household, commercial, and industrial waste. No industrial process waste, asbestos, or infectious waste shall be accepted unless specifically approved by the Arkansas Department of Environmental Quality (ADEQ). If special wastes are to be accepted for disposal at an approved landfill, adequate provision will be made for the proper separation, handling, storage and transfer of this waste.

11.1 WASTE SCREENING PROCEDURES

The site manager will insure that all personnel responsible for waste screening have been instructed on proper inspection procedures, and to recognize prohibited or dangerous wastes.

Gassville Transfer Station employees will visually screen the waste as it is discharged from the collection vehicle or public convince roll-off container and pushed into the transfer trailers. The scale house attendant will question drivers about the sources of the load and the nature of the generators. During visual screening, employees will monitor for product labels, especially warning labels, and flag sludges, powders, granular material(s) with unusual colors or odors for further examination. Employees should never deliberately inhale vapors from suspicious material or containers because this may lead to injury or death. The containers should be visually screened to ensure excessive liquid is not present. Additionally, employees will visually screen for non-household waste items that have a high probability of containing prohibited waste such as transformers, batteries, compressors, electrical circuit boards, or red bags which may contain medical waste.

If unacceptable wastes are detected, they will be isolated in an area separate from acceptable wastes. The driver of the truck carrying the unacceptable waste will be stopped prior to weighing out. The site manager will direct the hauler responsible to return the unacceptable waste to the generator or to an acceptable disposal facility (i.e. tires to a tire monofill, hazardous waste to a hazardous waste disposal facility, etc.). In the event of receiving hazardous materials that cannot be returned to the generator, the material will be segregated from other wastes and personnel. The Gassville Transfer Station owner and ADEQ will be notified for proper disposal procedures.

11.2 CLASS 4 SCREENING PROCEDURES

The Class 4 (Construction and Demolition debris) material loads may be source separated and be deposited into the respective container. The container type will be based on the type of Class 4 material.

Incidental bags of Class 1 waste, or Class 4 loads that are excessively contaminated with Class 1 waste, will be managed inside the transfer building and loaded into a transfer trailer. Prohibited or other dangerous waste will be separated from other waste immediately and handled as described in Section 11.1.

12.0 EMERGENCY RESPONSE

Facility personnel will be trained on the emergency procedures established for fire or other emergencies. Safety training will occur at weekly meetings.

In the event of a fire or other emergency, the site manager will contact the appropriate local and state authorities. The site manager will suspend all operations at the facility until such time that the emergency condition no longer exists. Phone lists with the appropriate emergency numbers will be posted in conspicuous locations at the site and all employees will be made aware of their locations. A list of the emergency telephone numbers is presented in **APPENDIX A**.

In the event of a small fire, site personnel will attempt to extinguish it using the fire extinguishers available at the site. However, if in the judgment of the personnel responding, the fire cannot be safely extinguished with on-site resources, the site manager will be notified and operations will be suspended. The Gassville Fire Department will be notified immediately, and if necessary, the building will be evacuated.

In addition to the fire extinguishers that are available at the site, an adequate supply of water will be available to assist in firefighting if needed.

The Gassville Transfer Station has been designed and is operated and maintained to protect the health and safety of personnel involved with the operations. Gassville Transfer Station personnel implement the use of personal safety equipment in accordance with OSHA and WCI safety guidelines. Personal safety equipment (as applicable) is utilized at all times by employees at the facility. The use of safety equipment is required for all visitors, equipment vendors, and contract personnel. In the event emergency medical treatment is required, a first aid kit is located in the main office and at the transfer station building.

If in the unlikely event that facility personnel are involved in an accident requiring medical attention, the employee will be stabilized and if the site manager deems necessary, the employee will be immediately taken to the nearest emergency medical treatment center for examination or an emergency responder will be contacted.

13.0 WASTE DESTINATION

The primary destination for all waste transported from the transfer station will be Cherokee Village Landfill in Cherokee Village, AR.

14.0 CONTINGENCY PLAN

In the event that the primary landfill is temporarily not accessible, the interim disposal facility will be other locally available permitted landfills. If the transfer station operations are suspended for any reason, all waste will be diverted to the primary landfill via direct haul.

In the event that a spill of any petroleum product regulated TSCA waste, or regulated hazardous waste occurs at the facility, the spill will be isolated and the Arkansas Department of Emergency Management will be contacted immediately at 1-800-322-4012. This contact number is staffed 24 hours every day. If a spill occurs that impacts off-site waterways the National Response Center will also be contacted at 1-800-424-8802. A full list of emergency contact numbers can be found in Appendix A.

Dust, noise, and odor are not expected to be present at the site at undesirable levels. However, for purposes of contingency planning, dust will be suppressed as needed with the use of water. Should undesirable levels of odor or noise be detected, the source will be identified and eliminated. This may be accomplished by implementing changes to operational procedures, use of odor masking products, or removal of the source from site.

In the event of on-site equipment failure, the necessary equipment will be transferred to the site from one of the nearby WCI facilities in northern Arkansas. Alternatively, equipment may be rented from a vendor.

In case of personnel emergencies that affect waste screening, waste acceptance will cease and resume when the personnel emergency is resolved. If waste acceptance is suspended, a "CLOSED" sign will be posted at the site entrance. During temporary closure, site access will be restricted to personnel appropriate to address the situation.

15.0 SITE SECURITY

The entire perimeter of the facility will have security fencing and all access gates will be locked whenever the facility is not staffed. Signs will be posted at all access gates indicating the public hours of operation and the types of solid waste that are acceptable and not accepted at the transfer station. Additionally, an electronic answering machine will state the operating hours of the facility during hours that employees are not available.

16.0 WASTE AND STORM WATER MANAGEMENT

Floor drains are located on the site which connects to the onsite leachate tank system and includes drains inside the waste deposit area and inside the waste collection trailer area to maintain the floors from free from standing water. The drains will collect wastewater produced on site from the transfer building and transferred into the on-site leachate tank. The tank's contents will be periodically pumped into a tanker truck for transfer to the City of Springfield Wastewater Treatment Facility in Missouri or other permitted treatment facilities.

Stormwater run-on to the site is diverted away from the Transfer Station and staging area with appropriate grading, swales, and ditches. The waste is transferred directly from a collection vehicle to the tipping floor inside the covered collection structure; therefore, stormwater does not come in contact with the solid waste. Stormwater at the site will be managed in accordance with the requirements of NPDES General Permit ARR001234 – Stormwater Runoff Associated with Industrial Activity. A copy of the General Permit is included in Appendix C.

17.0 CLOSURE PLAN

The GassvilleTransfer Station will provide notification to the ADEQ in writing of closure of the facility 60 days prior to the proposed termination of the facility in accordance with Regulation 22.906(d)(2). Upon closure of the facility, the following closure measures shall be performed:

- All waste material located within the transfer station building will be placed in containers and transported to a properly permitted landfill within 10 days of ceasing operations.
- The facility and equipment shall be brought to a sanitary condition within 10 days of ceasing operations.
- The transfer station equipment and waste containers will be cleaned to remove all residual waste material.
- All facility surfaces having come in contact with source-separated organic waste or solid waste will also be cleaned.
- All equipment and containers will be removed from the premises.

All closure activities will be completed within 45 days of the termination date of facility operations unless otherwise approved by ADEQ.

A financial assurance in the amount required for a third party to complete the closure activities described above is provided in Appendix B. The facility Closure Plan will be updated annually and submitted to ADEQ in the annual report.

18.0 REPORTING AND RECORD KEEPING REQUIREMENTS

Administrative personnel will maintain written record of the volume and tonnage of solid waste received at the transfer station, its source, and its class. Records of the volume or tonnage of solid waste removed from the site and its final destination will be maintained at the transfer station's scale house. In accordance with Regulation 22.907(a) the following information will be maintained at the transfer station's scale house:

- Any required location restriction demonstrations;
- Approved closure plans;
- Any cost estimates and financial assurance documentation;
- Records of any periodic inspections.

The facility owner or operator shall prepare and file with the ADEQ annual reports by March 31 covering the period from the previous January through December on a form provided by or acceptable to ADEQ. Contents of the reports shall at a minimum include the following:

- Source, volume or weight, and class of solid waste received at the facility;

- The volume or weight and type of recyclables recovered, if any;
- The volume or weight of solid waste removed from the facility and the disposal location; and
- The annual update to the Closure Plan.

FIGURES



N

W E

S

Site Location:

Scale:

0 100 200 400

Feet

Image Source:

USGS – Earth Explorer - https://earthexplorer.usgs.gov/

SCS ENGINEERS

9780 Maumelle Blvd.

N. Little Rock, Arkansas 72113

Office: (501) 812-4551

www.scsengineers.com

Site Location & Aerial

Gassville Transfer Station

Gassville, Arkansas

FIGURE 1

Date: 9/20/2023

By: BR



Image Source:

USGS – Earth Explorer - https://earthexplorer.usgs.gov/

SCS ENGINEERS
9780 Maumelle Blvd.
N. Little Rock, Arkansas 72113
Office: (501) 812-4551
www.scsengineers.com

Site Layout

Gassville Transfer Station

Gassville, Arkansas

FIGURE 2

Date: 9/20/2023

By: BR

APPENDIX A

EMERGENCY RESPONSE LIST

EMERGENCY RESPONSE LIST

Fire

Gassville Fire Department ..... 911 or (870) 435-6119

Medical

Baxter Regional Medical Center – Emergency ..... 911 or (870) 508-1000

Baxter Regional Medical Center – Non Emergency.....(870) 508-1000

Baxter Health Ambulance Service.....911

Police

Gassville Police Department ..... 911 or (870) 435-6439

Arkansas Department of Environmental Quality

Solid Waste Management Division .....(501) 682-0600

24 Hour Spill Response

Arkansas Department of Emergency Management .....(800) 322-4012

If a spill occurs that impacts off-site waterways the National Response Center will be contacted at 1-800-424-8802.

APPENDIX B

FINANCIAL ASSURANCE DOCUMENTATION

Surety Bond No. 0811398
Permit No. 0116-STSW-D

PERFORMANCE BOND

Date Bond Executed: June 28, 2023 Effective Date: January 1, 2023

Principal: Waste Connections of Arkansas, Inc.

Type of Organization: Corporation

State of Incorporation: Delaware

Surety(ies): Harco National Insurance Company

The Surety issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

Solid Waste Permit Number, Arkansas Facility Identification Number (AFIN), Consent Administrative Order (CAO), [if applicable], name, address, and closure and/or post-closure amount(s) for each facility guaranteed by this bond (indicate closure and post-closure amounts separately):

Gassville Transfer Station
162 County Road 5, Gassville, AR 72635
Permit No. 0116-STSW-D
AFIN: 03-00454

Total penal sum of bond: $ 33,000.00

Surety's Bond Number: 0811398

KNOW ALL PERSONS BY THESE PRESENT, that we, (insert full legal name and address of permit holder) as Principal, and (insert full name and address or legal title of Surety) as Surety, and licensed to do business in the State of Arkansas, hereinafter called Surety, are held and firmly bound unto the Arkansas Department of Energy and Environment, Division of Environmental Quality (hereinafter called DEQ), in the amount of Thirty Three Thousand and 00/100 (dollars) ($ 33,000.00),

for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these present.

WHEREAS, said Principal is required, under the Arkansas Solid Waste Management Act as amended, to have a permit, a consent administrative order, and/or a closure plan to operate each solid waste management facility identified above, and

WHEREAS, said Principal has been issued permit number 0116-STSW-D in the name of (insert complete name and address on permit) _____

Gassville Transfer Station, 162 County Road 5, Gassville, AR 72635

to operate a solid waste management facility, and

WHEREAS, said Principal is required to provide financial assurance for closure, post-closure and/or corrective action as a condition of the permit or CAO;

WHEREAS, said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall faithfully perform closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

AND, if the Principal shall faithfully perform post-closure care of each facility for which this bond guarantees post-closure care, in accordance with the post-closure plan and other requirements of the permit, as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended.

OR, if the Principal shall provide alternate financial assurance, as specified in Regulation 22.1402(b), 22.1403(b), or 22.1404(b), as applicable, and obtain the Director's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Director from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Director that the Principal has been found in violation of the closure requirements of APC&EC Regulation No. 22 for a facility for which this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amount guaranteed for the facility into the standby trust fund as directed by the Director.

Upon notification by the Director that the Principal has been found in violation of the post-closure requirements of APC&EC Regulation 22 for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other permit requirements or place the post-closure amount guaranteed for the facility into the standby trust fund as directed by the Director.

Upon notification by the Director that the Principal has failed to provide alternate financial assurance as specified in 22.1405 (b)(7) of APC&EC Regulation No. 22, and obtain written approval of such assurance from the Director during the 90 days following receipt by both the Principal and the Director of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Director.

The surety(ies) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Director one hundred twenty (120) days in advance of cancellation.

The principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Director.

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Director.

For any and all disputes arising out of, in connection with, or relating to this Performance Bond, the Principal and Surety expressly agree and consent that the exclusive jurisdiction and venue for any proceeding shall be in Pulaski County Circuit Court for the State of Arkansas in Little Rock, Arkansas, and the Principal and Surety waive any argument that the venue in such a forum is not convenient and any rights under any Federal or State law establishing jurisdiction or venue in another forum.

In Witness Whereof, the Principal and Surety(ies) have executed this Performance bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in APC&EC Regulation 22 as such regulation was constituted on the date this bond was executed.

Signed and sealed this 28th day of June, ~~19~~ 2023.

PRINCIPAL

Waste Connections of Arkansas, Inc.

(Signature(s)) _____

(Name(s)) James M. Little

(Title(s)) Executive Vice President - Engineering and Disposal

~~(Corporate Seal)~~ No Seal

CORPORATE SURETY (IES)

(Name and address) Harco National Insurance Company, 11900 NE 1st St., Suite 105, Bellevue WA 98005

State of Incorporation: Illinois

Liability Limit $ 33,000.00

(Signature(s)) _____

(Name(s) and Title(s)) Lisa Betancur, Attorney-In-Fact

Corporate Seal: HARCO NATIONAL INSURANCE COMPANY CORPORATE SEAL 1964 ILLINOIS

(For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.)

Bond Premium $ 182.00

SEE ATTACHED CA NOTARY ACKNOWLEDGMENT

(Witness) _____ (Witness)

Countersigned: Please see the attached document pertaining to Resident Agent Countersignature Laws

Arkansas Licensed Resident Agent

FINANCIAL ASSURANCE CHECKLIST
SURETY BOND GUARANTEEING PERFORMANCE OF CLOSURE AND/OR POST-CLOSURE CARE

Company Name: Waste Connections of Arkansas, Inc. Permit No.: 0116-STSW-D

YES	NO	QUESTION
☐	☐	Is the surety company listed as an acceptable surety on Federal bonds in Circular 570 of the U.S. Department of the Treasury?
☐	☐	Does the bond use wording approved by DEQ?
☐	☐	Does the bond make the surety liable if the owner or operator fails to perform as guaranteed by the bond?
☐	☐	Is the penal sum of the bond in an amount at least equal to the current closure cost and post-closure cost estimates?
☐	☐	Has the owner or operator established a standby trust fund?
☐	☐	Was the bond submitted at least 60 days before the date on which solid waste was first received for treatment, storage or disposal?
☐	☐	Has an originally signed duplicate of the standby trust agreement been submitted?
☐	☐	Have initial and updated estimates to the Director been provided to the Director?

Comments: _____

_____

Reviewed by: _____

Date: _____

WHAT IS REQUIRED AT A MINIMUM:

- ✓ The surety must be listed by the U.S. Department of the Treasury on its Circular 570. The circular can be accessed at: http://fms.treas.gov/c570/index.html.

- ✓ The text of the surety bond must be filed on forms developed by DEQ and provided to the Director for approval.

- ✓ A standby trust fund must be established with a qualified financial institution according to the requirements for trust funds stipulated in Reg.22.1405 (a).

- ✓ The penal sum of the bond must be equal to the current closure, post-closure care or corrective action cost estimates.

The owner/operator must provide the regulator with the surety bond and an originally signed copy of the standby trust agreement.

POWER OF ATTORNEY

Bond # 0811398

HARCO NATIONAL INSURANCE COMPANY
INTERNATIONAL FIDELITY INSURANCE COMPANY

Member companies of IAT Insurance Group, Headquartered: 702 Oberlin Road, Raleigh, North Carolina 27605

KNOW ALL MEN BY THESE PRESENTS: That **HARCO NATIONAL INSURANCE COMPANY**, a corporation organized and existing under the laws of the State of Illinois, and **INTERNATIONAL FIDELITY INSURANCE COMPANY**, a corporation organized and existing under the laws of the State of New Jersey, and having their principal offices located respectively in the cities of Rolling Meadows, Illinois and Newark, New Jersey, do hereby constitute and appoint

DAVID W. GARESE, LISA BETANCUR, A. CATHERINE SKEEN, BROOKE A. SKEEN

Sacramento, CA

their true and lawful attorney(s)-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise, and the execution of such instrument(s) in pursuance of these presents, shall be as binding upon the said **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY**, as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by their regularly elected officers at their principal offices.

This Power of Attorney is executed, and may be revoked, pursuant to and by authority of the By-Laws of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** and is granted under and by authority of the following resolution adopted by the Board of Directors of **INTERNATIONAL FIDELITY INSURANCE COMPANY** at a meeting duly held on the 13th day of December, 2018 and by the Board of Directors of **HARCO NATIONAL INSURANCE COMPANY** at a meeting held on the 13th day of December, 2018.

"**RESOLVED**, that (1) the Chief Executive Officer, President, Executive Vice President, Senior Vice President, Vice President, or Secretary of the Corporation shall have the power to appoint, and to revoke the appointments of, Attorneys-in-Fact or agents with power and authority as defined or limited in their respective powers of attorney, and to execute on behalf of the Corporation and affix the Corporation's seal thereto, bonds, undertakings, recognizances, contracts of indemnity and other written obligations in the nature thereof or related thereto; and (2) any such Officers of the Corporation may appoint and revoke the appointments of joint-control custodians, agents for acceptance of process, and Attorneys-in-fact with authority to execute waivers and consents on behalf of the Corporation; and (3) the signature of any such Officer of the Corporation and the Corporation's seal may be affixed by facsimile to any power of attorney or certification given for the execution of any bond, undertaking, recognizance, contract of indemnity or other written obligation in the nature thereof or related thereto, such signature and seals when so used whether heretofore or hereafter, being hereby adopted by the Corporation as the original signature of such officer and the original seal of the Corporation, to be valid and binding upon the Corporation with the same force and effect as though manually affixed."

IN WITNESS WHEREOF, **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** have each executed and attested these presents on this 31st day of December, 2019

INTERNATIONAL FIDELITY INSURANCE COMPANY CORPORATE SEAL 1904 NEW JERSEY

STATE OF NEW JERSEY
County of Essex

STATE OF ILLINOIS
County of Cook

HARCO NATIONAL INSURANCE COMPANY CORPORATE SEAL 1984 ILLINOIS

Kenneth Chapman
Executive Vice President, Harco National Insurance Company
and International Fidelity Insurance Company

On this 31st day of December, 2019 , before me came the individual who executed the preceding instrument, to me personally known, and, being by me duly sworn, said he is the therein described and authorized officer of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY**; that the seals affixed to said instrument are the Corporate Seals of said Companies; that the said Corporate Seals and his signature were duly affixed by order of the Boards of Directors of said Companies.

SHIRELLE A. OUTLEY My Comm. Exp. 04-04-2023 NOTARY PUBLIC No. 50079910 NEW JERSEY

IN TESTIMONY WHEREOF, I have hereunto set my hand affixed my Official Seal, at the City of Newark, New Jersey the day and year first above written.

Shirelle A. Outley a Notary Public of New Jersey
My Commission Expires April 4, 2023

CERTIFICATION

I, the undersigned officer of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Sections of the By-Laws of said Companies as set forth in said Power of Attorney, with the originals on file in the home office of said companies, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

IN TESTIMONY WHEREOF, I have hereunto set my hand on this day, June 28, 2023

A00711

Irene Martins, Assistant Secretary

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Sacramento)

On June 18, 2023 before me, Donna Marie Borja, Notary Public
(insert name and title of the officer)

personally appeared Lisa Betancur,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

DONNA MARIE BORJA
COMMISSION #2430459
NOTARY PUBLIC - CALIFORNIA
SOLANO COUNTY
MY COMMISSION EXPIRES
DECEMBER 12, 2026

Signature Donna Marie Borja (Seal)

NATIONAL ASSOCIATION OF SURETY BOND PRODUCERS
7735 Old Georgetown Road, Suite 900
Bethesda, MD 20814
Tel: 240.200.1270
Fax: 240.200.1295
www.nasbp.org

NASBP White Paper: Resident Agent Countersignature Laws Have Been Eradicated and Violate the Law in Every U.S. State

The purpose of this short white paper is to inform the reader that resident agent countersignature laws have been eradicated throughout the United States and its territories (with the exception of Guam, where it has not been challenged). Any bid, performance, or payment bond that requires a resident agent countersignature or a resident agent signature violates the law, as such requirements have been held unconstitutional by federal courts throughout the United States or have been repealed by state legislatures, because such requirements impermissibly favor licensed resident agents over licensed non-resident agents. It is not the countersignature requirement that is problematic; it is the *resident agent* countersignature requirement that violates the law.

The National Association of Surety Bond Producers (NASBP) is aware that officials in some state and local agencies are not informed about the illegality of resident agent countersignature mandates. These officials will improperly reject a bid based on lack of a required resident agent countersignature or improperly refuse to accept performance and payment bonds based on lack of a required resident agent countersignature. NASBP receives dozens of member requests each year to send comment letters to public agencies that have included the unlawful resident agent countersignature requirement in their surety bonds.

Countersignature laws date back to the early twentieth century when states passed the laws as a consumer protection measure. The regulations requiring non-resident agents to receive sign-off by a local resident agent were originally intended to ensure compliance with local insurance laws. Those regulations also meant that out-of-state agents had to pay local agents for their signatures. By the 1990s, technology made the countersignature laws an anachronism of regulation. The movement to repeal countersignature laws began in the 1990s and ended in 2008 when the Ninth Circuit struck down Nevada's countersignature law. This movement was spearheaded by The Council of Insurance Agents & Brokers.

One of the most well-known and widely quoted cases on this matter is *Council of Insurance Agents and Brokers v. Tom Gallagher*, 287 F. Supp. 2d 1302 (N.D. Fla. 2003), in which the U.S. District Court for the Northern District of Florida struck down a Florida statute that impermissibly favored resident agents. The district court determined that there was no rational basis for a distinction between Florida licensed resident agents and Florida licensed non-resident agents and declared unconstitutional the Florida statute at issue that discriminated against Florida-licensed non-resident agents.

Agency officials may want to have the agency's bond forms reviewed to ensure that its bonds do not contain an illegal resident agent signature or countersignature requirement. The bonds should contain a licensed (resident OR non-resident) agent requirement.

October 2018

ENVIRONMENTAL QUALITY

Certification of ePortal Submission

This form is to be used to certify electronic ePortal submissions. Please check with the appropriate section for who has the authority to sign this form. A hardcopy of this form with original signature must be sent to DEQ, 5301 Northshore Drive, North Little Rock, AR 72118. Please do **not** send a hardcopy of the ePortal submission with this form. **All fields are required**.

1. Section to which the ePortal Submission was Submitted:	Solid Waste Management Section
2. Form Name:	Individual - Solid Waste Processing Facility Permit Application - Yard Waste (Y), Organic Waste (O), or Mixed Solid Waste (S) Composting Facilities; Transfer Station (TS); SW Material Recovery (WRF); Construction and Demolition Recycling Facility (CDRF)
3. Arkansas DEQ Facility Identification Number (AFIN), if available:	03-00454
4. Facility Name:	Gassville Solid Waste Transfer Station
5. Facility Physical Address:	162 County Road 5 Gassville, AR 72635

I certify under penalty of law that the ePortal submission with Submission ID# HPX-SWPP-XD68W and revision # 1 which was submitted electronically on 9/22/2023 5:53:07 PM and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, I certify the information provided in this submission is true and accurate.

Joseph Vieceli	Senior Engineer
typed/printed name of applicant	title
signature of applicant	date

Benjamin Reynolds	Senior Project Professional
typed/printed name of engineer or consultant	title
signature of engineer or consultant	date