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, 2021

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 Number 1-6003

FEDERAL SIGNAL CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**36-1063330**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*

1415 West 22nd Street, Oak Brook, Illinois
(Address of principal executive offices)

60523
(Zip Code)

(630) 954-2000
(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 Stock, par value $1.00 per share	FSS	New York Stock Exchange

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or 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.

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. ☑

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

As of June 30, 2021, the aggregate market value of voting stock held by non-affiliates was $2,409,212,678. For purposes of the foregoing calculation only, executive officers and directors of the registrant have been deemed to be affiliates.

As of February 28, 2022, the number of shares outstanding of the registrant's common stock was 60,931,540.

Documents Incorporated By Reference

Portions of the registrant's definitive proxy statement for the 2022 Annual Meeting of Stockholders are incorporated by reference in Part III.

FEDERAL SIGNAL CORPORATION

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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K ("Form 10-K") is being filed by Federal Signal Corporation and its subsidiaries (referred to collectively as the "Company," "we," "our" or "us" herein, unless the context otherwise indicates) with the United States ("U.S.") Securities and Exchange Commission (the "SEC"), and includes comments made by management that may contain words such as "may," "will," "believe," "expect," "anticipate," "intend," "plan," "project," "estimate" and "objective" or similar terminology, or the negative thereof, concerning the Company's future financial performance, business strategy, plans, goals and objectives. These expressions are intended to identify forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the Private Securities Litigation Reform Act of 1995. Forward-looking statements include information concerning the Company's possible or assumed future performance or results of operations and are not guarantees. While these statements are based on assumptions and judgments that management has made in light of industry experience as well as perceptions of historical trends, current conditions, expected future developments and other factors believed to be appropriate under the circumstances, they are subject to risks, uncertainties and other factors that may cause the Company's actual results, performance or achievements to be materially different.

These risks and uncertainties, some of which are beyond the Company's control, include, but are not limited to, the risk factors described under Item 1A, *Risk Factors* as set forth in Part I, as well as those discussed elsewhere in this Form 10-K and in our subsequently filed documents, as applicable. These factors may not constitute all factors that could cause actual results to differ materially from those discussed in any forward-looking statement. The Company operates in a continually changing business environment and new factors emerge from time to time including, for example, the ongoing coronavirus pandemic and the governmental responses to the pandemic. The Company cannot predict such factors, nor can it assess the impact, if any, of such factors on its results of operations, financial condition or cash flow. Accordingly, forward-looking statements should not be relied upon as a predictor of actual results. The Company disclaims any responsibility to update any forward-looking statement provided in this Form 10-K.

ADDITIONAL INFORMATION

The Company is subject to the reporting and information requirements of the Exchange Act and, as a result, is obligated to file Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other reports and information with the SEC, as well as amendments to those reports. The Company makes these filings available free of charge through our website at www.federalsignal.com as soon as reasonably practicable after such materials are filed with, or furnished to, the SEC. Information on our website does not constitute part of this Form 10-K. In addition, the SEC maintains a website at www.sec.gov that contains reports, proxy and information statements and other information regarding issuers that file electronically.

PART I

Item 1. *Business.*

Federal Signal Corporation, founded in 1901, was reincorporated as a Delaware corporation in 1969. The Company designs, manufactures and supplies a suite of products and integrated solutions for municipal, governmental, industrial and commercial customers. The Company's portfolio of products that it manufactures includes sewer cleaners, industrial vacuum loaders, vacuum- and hydro-excavation trucks (collectively, "safe-digging" trucks), street sweepers, road-marking and line-removal equipment, waterblasting equipment, dump truck bodies, trailers, and safety and security systems, including technology-based products and solutions for the public safety market. In addition, the Company engages in the sale of parts, service and repair, equipment rentals and training as part of a comprehensive aftermarket offering to its customers. The Company operates 20 principal manufacturing facilities in five countries and provides products and integrated solutions to customers in all regions of the world.

Narrative Description of Business

Products manufactured and supplied, and services rendered, by the Company are divided into two reportable segments: the Environmental Solutions Group and the Safety and Security Systems Group. The individual operating businesses are organized as such because they share certain characteristics, including technology, marketing, distribution and product application, which create long-term synergies. Corporate contains those items that are not included in the Company's reportable segments.

Financial information concerning the Company's two reportable segments for each of the three years in the period ended December 31, 2021, is included in Note 17 – Segment Information to the accompanying consolidated financial statements and is incorporated herein by reference.

During the year ended December 31, 2021, the Company completed the acquisition of all of the outstanding equity of OSW Equipment & Repair, LLC ("OSW") and the acquisitions of substantially all of the assets and operations of Ground Force Manufacturing LLC ("Ground Force") and Deist Industries, Inc., Bucks Fabricating, LLC, Roll-Off Parts, LLC and Switch-N-Go, LLC (collectively, "Deist").

Environmental Solutions Group

The Company's Environmental Solutions Group is a leading manufacturer and supplier of a full range of street sweepers, sewer cleaners, industrial vacuum loaders, safe-digging trucks, high-performance waterblasting equipment, road-marking and line-removal equipment, dump truck bodies, trailers and metal extraction support equipment. The Group manufactures vehicles and equipment in the U.S. and Canada that are sold under the Elgin®, Vactor®, Guzzler®, TRUVAC®, Westech™, Jetstream®, Mark Rite Lines, Ox Bodies®, Crysteel®, J-Craft®, Duraclass®, Rugby®, Travis®, OSW, NTE, WTB, Ground Force, Bucks® and Switch-N-Go® brand names. The Group's product offerings also include certain products manufactured by other companies, such as refuse and recycling collection vehicles, camera systems, ice resurfacing equipment and snow-removal equipment. Products are sold to both municipal and industrial customers either through a dealer network or direct sales to service customers generally depending on the type and geographic location of the customer. In addition to vehicle and equipment sales, the Group also engages in the sale of parts, service and repair, equipment rentals and training as part of a comprehensive aftermarket offering to its current and potential customers through its service centers located across North America.

Under the Elgin brand name, the Company sells a leading U.S. brand of street sweepers primarily designed for large-scale cleaning of curbed streets, parking lots and other paved surfaces utilizing mechanical sweeping, vacuum and recirculating air technology. Vactor is a leading manufacturer of equipment solutions for cleaning and maintaining sewers and catch basins. Under the TRUVAC brand name, the Company manufactures a range of premium vacuum- and hydro-excavation trucks designed to satisfy the safe-digging requirements of businesses or organizations that locate and verify underground utility lines and pipes. Guzzler is a leader in industrial vacuum loaders used to manage industrial waste or recover and recycle valuable raw materials. Westech is a manufacturer of high-quality, rugged vacuum-excavation trucks. Jetstream manufactures high-pressure waterblasting equipment and accessories for commercial and industrial cleaning and maintenance operations. Mark Rite Lines Equipment Company, Inc. ("MRL"), is a U.S. manufacturer of truck-mounted and ride-on road-marking and line-removal equipment. Ground Force is a leading manufacturer of specialty material handling vehicles that support the extraction of metals. The Company manufactures and sells dump truck bodies and trailers under the Ox Bodies, Crysteel, J-Craft, Duraclass, Rugby, Travis, OSW, NTE and WTB brand names, as well as a range of interchangeable truck body systems and waste hauling products under the Bucks and Switch-N-Go brand names.

Safety and Security Systems Group

The Company's Safety and Security Systems Group is a leading manufacturer and supplier of comprehensive systems and products that law enforcement, fire rescue, emergency medical services, campuses, military facilities and industrial sites use to protect people and property. Offerings include systems for community alerting, emergency vehicles, first responder interoperable communications and industrial communications. Specific products include public safety equipment, such as vehicle lightbars and sirens, industrial signaling equipment, public warning systems and general alarm/public address systems. Products are sold under the Federal Signal™, Federal Signal VAMA®, and Victor® brand names. The Group operates manufacturing facilities in the U.S., Europe and South Africa.

Marketing and Distribution

Depending primarily on the type and geographic location of the end-customer, the Environmental Solutions Group uses either a dealer network or direct sales to serve customers. The 2017 acquisition of Truck Bodies and Equipment International ("TBEI") increased the number of dealers within the Company's network and also added additional direct sales resources. The dealer network serves both municipal and industrial end-markets. Within municipal markets, the majority of the Company's dealers operate exclusively in their assigned territory. In conjunction with selling vehicles to end-customers, dealer representatives demonstrate vehicle functionality and capability and provide vehicle service. In addition to selling products manufactured by the Company, certain of our businesses distribute and re-sell products manufactured by other companies. The Company believes its regional, national and global dealer networks for vehicles is a distinguishing factor from its competitors. The Company has an ownership interest in certain dealers.

The Environmental Solutions Group's direct sales channel concentrates primarily on the industrial, utility and construction market segments. To support current and potential customers in these market segments, the Group also engages in the sale of parts, service and repair, equipment rentals and training through its service centers located across North America.

The Safety and Security Systems Group sells to industrial customers through wholesalers and distributors who are supported by Company sales personnel or independent manufacturer representatives. Products are also sold to municipal and governmental customers through active independent distributors, as well as through original equipment manufacturers and the direct sales force. The Company sells comprehensive integrated warning and interoperable communications through a combination of the direct sales force and independent distributors. International sales are made through independent foreign distributors or on a direct basis.

Customers and Backlog

No single customer accounted for 10% or more of the Company's net sales in any year within the three-year period ended December 31, 2021.

The Company's backlog totaled $629 million at December 31, 2021, compared to $304 million at December 31, 2020. Backlogs vary by group due to the nature of the Company's products and the buying patterns of its customers. The Environmental Solutions Group typically experiences an average backlog of approximately three to six months of shipments. The Safety and Security Systems Group typically experiences an average backlog of approximately two months of shipments. While supply chain and coronavirus-related labor disruptions have contributed to longer lead times for certain businesses, production of the Company's December 31, 2021 backlog is expected to be substantially completed during 2022.

Suppliers

The Company purchases a wide variety of raw materials from around the world for use in the manufacture of its products, although the majority of its purchases are currently from North American sources. To minimize risks relating to availability, price and quality of key products and components, the Company is party to numerous strategic supplier arrangements. Although certain materials are obtained from either a single-source supplier or a limited number of suppliers, the Company has generally identified alternative sources to minimize the interruption of its business in the event of supply disruptions. However, the Company may incur supply disruptions and unanticipated costs in transitioning to a new supplier.

Components critical to the production of the Company's vehicles, such as engines, are purchased from a select number of suppliers. The Company also purchases raw and fabricated steel, as well as commercial chassis, from multiple sources. In addition, we may incorporate chassis provided directly by our customers in our production process. In those situations, the Company's production processes rely upon the customer providing the chassis on a timely basis. Certain of the Company's businesses also rely on the availability of equipment supplied by others to meet customer demand.

The Company actively manages material supply sourcing and employs various methods to limit risk associated with commodity cost fluctuations and availability. During 2021, the Company's manufacturing operations were adversely affected as the continuity of its material supply was adversely impacted by capacity constraints, global logistics disruptions, component shortages and coronavirus-related production downtime at certain suppliers. The Company has designed and implemented plans to partially mitigate the impact of these challenges by using alternate suppliers, re-engineering products, expanding its supply base globally, leveraging overall purchasing volumes to obtain favorable pricing and quantities and developing a closer working relationship with key suppliers. However, the Company can provide no assurance that those efforts will be successful and anticipates that similar material shortages and production delays will persist into 2022.

Competition

Within the Environmental Solutions Group, Elgin is recognized as a market leader among domestic sweeper competitors and differentiates itself primarily on product performance. The Vactor, TRUVAC and Guzzler brands each maintain a leading domestic position in their respective marketplaces by enhancing product performance with leading technology and application flexibility. Jetstream is a market leader in the in-plant cleaning segment of the U.S. waterblast industry, competing on product performance, rapid delivery and solutions services. Joe Johnson Equipment, Inc. with Joe Johnson Equipment (USA), Inc., (collectively, “JJE”), is a leading Canadian-based distributor of maintenance equipment for municipal and industrial markets. TBEI includes a portfolio of regional dump truck body and trailer brands with market leadership positions in distinct geographies and product categories, differentiating itself with its broad regional distribution network, focus on customer responsiveness and operational expertise. MRL is a market-leading manufacturer of road-marking and line-removal equipment. Ground Force is a leading manufacturer of specialty material handling vehicles that support the extraction of metals.

Within specific product categories and domestic markets, the businesses within the Safety and Security Systems Group are among the market leaders. This Group’s international market position varies from leader to ancillary participant depending on the geographic region and product line. Generally, competition is intense within all of this Group’s product lines and purchase decisions are made based on price, features, reputation, performance and service, often within competitive bidding situations.

Patents and Trademarks

The Company owns a number of patents and possesses rights under others to which it attaches importance, but it does not believe that its business as a whole is materially dependent upon any such patents or rights. The Company also owns a number of trademarks, including those listed within the “*Narrative Description of Business*” section above. We believe these trademarks are important in connection with the identification of our products and associated goodwill with customers, but no material part of the Company’s business is dependent on our trademarks.

Human Capital Management

As of December 31, 2021, the Company employed approximately 3,900 people in its businesses located in five countries, with the Company’s U.S. hourly workers accounting for approximately 54% of its total workforce. As of December 31, 2021, approximately 13% of the Company’s U.S. hourly workers were represented by unions. The Company believes that its labor relations with its employees are good.

The Company believes that its employees are key to its ability to deliver exceptional products and services to its customers. The Company applies a holistic total rewards strategy, designed to recruit, motivate, and retain talented employees at all levels of the organization, and offer competitive, market-based compensation programs, and attractive benefit packages.

Diversity, Equity and Inclusion

The Company is committed to promoting and supporting diversity, equity and inclusion (“DE&I”). The Company believes that behaving inclusively is the right thing to do. The Company also believes that hearing different voices, and seeking different perspectives and ideas, leads to better results. The Company strives to promote diversity on its Board of Directors, senior management and in leadership roles throughout the Company. Currently, two of the Company’s seven directors self-identify as members of a minority group.

In addition, two of the Company’s directors are female, placing the Company ahead of the 26% average for companies in the Russell 3000 Index. Of the companies in the Russell 3000 Index, approximately 6% have a female Chief Executive Officer (“CEO”), and the Company is proud to be among that group. In addition, 40% of the Company’s current executive officers are female, including the Company’s President and CEO and Vice President and Corporate Controller.

The Company’s commitment to DE&I throughout the organization is further evidenced by its policies related to various aspects of employment, including, but not limited to, recruiting, selecting, hiring, employment placement, job assignment, compensation, access to benefits, selection for training, use of facilities, and participation in Company-sponsored employee activities. During 2021, the Company’s Executive Leadership Team, comprised of business leaders from across the organization, completed a comprehensive DE&I educational awareness training led by an industry expert.

Employee Training and Development

The Company believes that identifying and developing the next generation of business leaders is important to its long-term success, and is proud to support its employees in furthering their education with tuition reimbursement programs and training.

The Company provides extensive training to employees within its facilities, ranging from topics such as workplace safety, anti-fraud, anti-discrimination and anti-harassment training, to advanced instruction in lean manufacturing principles and inside sales training programs. On average, the Company's employees each receive more than 10 hours of job training per year, with some employees of certain business units each averaging nearly 80 hours of training per year.

Through its Tuition Assistance Program, the Company also aims to assist and encourage employees to expand their knowledge, skills, and job effectiveness by continuing their education at local accredited institutions of higher learning. Certain of the Company's businesses also partner with nearby universities, from time to time, to offer courses and programs directly related to the employee's growth in the business.

The Company is committed to the communities in which it operates, and to developing a strong pipeline from which it can recruit new talent. Many of the Company's businesses support their local high schools with cooperative learning extension programs at their manufacturing plants, hosting in-person or virtual tours of our facilities, and providing scholarships and "signing-day" offers to high school seniors.

The Company's employees also donate time and expertise through volunteering and mentorship programs, and work with local colleges on training programs to teach valuable technical skills that can be applied in the workplace. These programs attempt to help the Company's next generation, and others, understand what career paths may be available to them and to explore future job opportunities with the Company.

Safety

The Company considers the safety of its employees a significant focus and strives to have zero workplace injuries. The Company has established an enterprise-wide Safety Council, which includes representatives from several of our manufacturing facilities. The Safety Council meets regularly to collaborate and implement safety improvement measures, focusing on continuous improvement initiatives and the reduction of incident frequency.

Beginning in February 2020, in response to the onset of the coronavirus pandemic, the Company was proactive in procuring personal protective equipment and sanitizing supplies for its facilities. The Company implemented a series of enhanced health and safety measures across the organization, such as reconfiguring work spaces and staggering manufacturing shifts to allow for social distancing, introducing temperature screening protocols, enhancing facility cleaning, limiting non-essential travel and restricting the number of visitors to its facilities.

The Company also quickly established a cross-functional task force to monitor ongoing developments, implement mitigation plans, and centrally coordinate its response. In addition to the centralized response team, local response teams were established at every business unit. Management team update calls are held frequently to communicate issues related to safety and risk mitigation, and to share coronavirus-related best practices and other policy issues. This platform has allowed management to rapidly disseminate evolving guidance from federal, state, and local health departments, at the same time promoting a consistent, iterative response. The Company continues to partner with a third-party to provide self-administered, at-home test kits to its employees and their family members at no cost and has deployed surveillance testing to reduce the probability of spreading the virus within its facilities.

During 2021, the Company launched an internal initiative to raise awareness about coronavirus vaccines, assist eligible employees in gaining access to available vaccines, and encourage participation levels. The Company has also hosted on-site vaccination events at multiple locations, provided ongoing education on vaccine-related topics, supported employee vaccination logistics, and developed a system of individual and collective incentives to work towards protecting the health and safety of its workforce and local communities. Through its efforts, the Company believes the vaccination rates at most of its businesses exceed those of the local communities in which it operates.

The Company continues to monitor the impact of the pandemic on its business and employees and will implement or modify its policies to adapt to changing circumstances arising from this pandemic.

Governmental Regulation of the Environment

As part of its ongoing commitment to environmental, social and governance initiatives, the Company endeavors to establish environmentally-friendly policies and objectives, and believes that these actions are also consistent with cost-effective operating practices. With the application of these policies, the Company believes it complies with federal, state and local provisions that have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment. Capital expenditures in 2021 attributable to compliance with such laws were not material. The Company also believes that the overall impact of compliance with environmental regulations will not have a material adverse effect on our financial position, results of operations or cash flow.

Seasonality

Certain of the Company's businesses are susceptible to the influences of seasonal factors, including buying patterns, delivery patterns and productivity influences from holiday periods and weather. In general, the Company tends to have lower equipment sales in the first calendar quarter of each year compared to other quarters as a result of these factors. In addition, rental income and parts sales are generally higher in the second and third quarters of the year, because many of the Company's products are used for maintenance activities in North America, where usage is typically lower during periods of harsher weather conditions.

Executive Officers of the Registrant

The following is a list of the Company's executive officers, including their ages, business experience and positions as of February 1, 2022:

Jennifer L. Sherman, age 57, was appointed President and CEO effective January 1, 2016. Ms. Sherman was also appointed to the Board of Directors effective January 1, 2016. Since joining the Company in 1994, Ms. Sherman has served in various roles of increasing responsibility, most recently as Senior Vice President and Chief Operating Officer from April 2014 to December 31, 2015. Ms. Sherman also previously served as Senior Vice President, Chief Administrative Officer, General Counsel and Secretary from 2010 to April 2014, Senior Vice President, Human Resources, General Counsel and Secretary from 2008 to 2010, and Vice President, General Counsel and Secretary from 2004 to 2008.

Daniel A. DuPré, age 65, was appointed Vice President, General Counsel and Secretary in November 2015. Mr. DuPré joined the Company in 2006, most recently serving as its Deputy General Counsel. Mr. DuPré previously held senior legal positions at Sears Holdings Corporation, Bank One Corporation, and Brunswick Corporation and served as an Assistant United States Attorney for the Northern District of Illinois.

Lauren B. Elting, age 40, was appointed Vice President and Corporate Controller in May 2018. Prior to joining the Company in January 2017, Ms. Elting worked at Ernst & Young, LLP from 2004 to 2016, most recently as Senior Audit Manager.

Ian A. Hudson, age 45, was appointed Senior Vice President and Chief Financial Officer in October 2017. Mr. Hudson joined the Company in August 2013 as Vice President and Corporate Controller. Prior to joining the Company, Mr. Hudson served as Director of Accounting – Latin America and Asia Pacific at Groupon, Inc. from June 2012 to August 2013. Prior to that role, Mr. Hudson worked at Ernst & Young, LLP from 1998 to 2012, most recently as Senior Audit Manager.

Mark D. Weber, age 64, was appointed Senior Vice President and Chief Operating Officer in January 2018, upon rejoining the Company after four years at Supreme Industries, Inc. ("Supreme"). Mr. Weber joined Supreme in May 2013 as President and Chief Executive Officer, serving in that capacity up to the sale of Supreme to Wabash National Corporation, which was completed in September 2017. Prior to joining Supreme, Mr. Weber worked for 17 years as an executive within the Company's Environmental Solutions Group, including a decade as Group President.

These officers hold office until the next annual meeting of the Board of Directors following their election and until their successors have been elected and qualified.

There are no family relationships among any of the foregoing executive officers.

Item 1A. *Risk Factors.*

We may occasionally make forward-looking statements and estimates such as forecasts and projections of our future performance or statements of our plans and objectives. These forward-looking statements may be contained in, but are not limited to, filings with the SEC, including this Form 10-K, press releases made by us and oral statements made by our officers. Actual results could differ materially from those contained in such forward-looking statements. Important factors that could cause our actual results to differ from those contained in such forward-looking statements include, but are not limited to, the risks described below. Many of such risks and uncertainties may be exacerbated by the coronavirus pandemic and any worsening of the global business and economic environment that may result.

Macroeconomic and Industry Risks

Our financial results are subject to U.S. economic uncertainty.

In 2021, we generated approximately 76% of our net sales in the U.S. Our ability to be profitable depends heavily on varying conditions in the U.S. governmental and municipal markets, as well as the overall U.S. economy. The industrial markets in which we compete are subject to considerable cyclicality, and move in response to cycles in the overall business environment. Many of our customers are municipal government agencies, and as a result, we are dependent on municipal government spending. Spending by our municipal customers can be affected by federal, state and local political circumstances, budgetary constraints, changing priorities, actual or potential government shutdowns and other factors. The U.S. government and municipalities depend heavily on tax revenues as a source of spending and accordingly, there is a historical correlation that suggests a lag of one to two years between the condition of the U.S. economy and our sales to the U.S. government and municipalities. Therefore, downturns in the U.S. economy are likely to result in decreases in demand for our products. During previous economic downturns, we experienced decreases in sales and profitability, and we expect our business to remain subject to similar economic fluctuations in the future. In addition, the extent of any potential changes to policies and regulations under the current U.S. administration, and how any such changes may impact the Company’s operations, is currently uncertain.

The extent to which the coronavirus pandemic will continue to adversely impact our business, financial condition and operating results is highly uncertain and cannot be predicted but could be material.

The coronavirus pandemic has created, and continues to create, significant worldwide volatility, uncertainty and disruption. In particular, the pandemic and the governmental responses to the pandemic have resulted in a substantial curtailment of business activities, a significant number of business closures, slowdowns, suspensions or delays of production and commercial activity, and weakened economic conditions, both in the United States and in many foreign countries. As such, the pandemic has directly and indirectly adversely impacted the Company and such adverse impact will likely continue. However, the extent to which the pandemic will ultimately adversely impact the Company’s business, financial condition and operating results, which could be material, will depend on numerous evolving factors that are highly uncertain, rapidly changing and cannot be predicted at this time, including:

- the duration and scope of the pandemic, including the emergence of new variants;
- governmental, business and individual actions that have been, continue to be and may in the future be taken in response to the pandemic, including business and travel restrictions, “stay-at-home” and “shelter-in-place” directives, quarantines, and slowdowns, suspensions or delays of commercial activity;
- the dissemination and adoption of coronavirus vaccines and their effectiveness against new variants and any government-mandated vaccine or testing requirement in any of our facilities and markets;
- the effect of the pandemic and the government response on our dealers, distributors and other channel partners and customers, including their ability to remain open, continue to sell and service our products, pay for the products purchased from us and obtain vehicle chassis, to the extent that they source such components directly;
- the effect of the pandemic and the governmental response on the budgets of our municipal customers;
- our ability to continue to run our operations as an essential business during the pandemic and/or to maintain our normal production capacity, in light of the potential for adverse impacts associated with decreased labor availability, including as a result of any government-mandated vaccine or testing requirement or otherwise, the temporary suspension of production activity mandated or otherwise made necessary by governmental authorities, weakened demand, supply chain disruptions, or other production delays;
- significant reductions or volatility in demand for one or more of our products or services;
- the effect of the pandemic on our suppliers and our ability to obtain commodities, components and parts, on a timely basis through our supply chain and at previously anticipated costs;
- logistics costs and challenges, including availability of transportation and at previously anticipated costs;
- costs incurred as a result of necessary actions and preparedness plans to help ensure the health and safety of our employees and continued operations, including remote working accommodations, enhanced cleaning processes,

protocols designed to implement appropriate social distancing practices, and/or adoption of additional wage and benefit programs to assist employees;
- costs incurred relating to coronavirus-related medical expenses;
- potential future restructuring, impairment and other charges;
- availability of employees, their ability to conduct work away from normal working locations and/or under revised work environment protocols, the general willingness of employees to come to and perform work and the impact of any government-mandated vaccine or testing requirement;
- the impact of the pandemic on the financial and credit markets and economic activity generally;
- our ability to access lending, capital markets, and other sources of liquidity when needed on reasonable terms or at all;
- our ability to comply with the financial covenants in our debt agreements if a material economic downturn as a result of the pandemic results in substantially increased indebtedness and/or lower earnings; and
- the exacerbation of negative impacts resulting from the occurrence of a global or national recession, depression or other sustained adverse market event as a result of the pandemic.

We have international operations that are subject to compliance with domestic and foreign laws and regulations, economic and political uncertainties and conflicts and foreign currency rate fluctuations.

Our business is subject to fluctuations in demand and changing international economic, legal and political conditions that are beyond our control. In 2021, approximately 24% of our net sales were to customers outside the U.S. and we expect a significant portion of our revenues to come from international sales in the foreseeable future. Operating in the international marketplace exposes us to a number of risks, including the need to comply with U.S. and foreign laws and regulations applicable to our foreign operations, such as the Foreign Corrupt Practices Act, the United Kingdom ("U.K.") Bribery Act and their counterparts in other foreign jurisdictions in which we operate, restrictive domestic and international trade regulations, and changes in these laws, regulations and policies by the U.S. and foreign governments. In addition, we may be exposed to risks and adverse economic effects associated with emerging geopolitical conflicts, actual or threatened imposition of tariffs or trade barriers on our products or materials incorporated into our products, actual or threatened trade disputes, including so-called "trade wars," political and economic instability in the jurisdictions in which we operate, foreign receivables collection risk and local labor market conditions. Further, government administrations and agencies, the investment community, employees and other stakeholders have had an increased focus on certain climate change and other environmental, social and governance ("ESG") factors, issues and initiatives. Regulatory and other legal changes in laws in response to such ESG matters could require material efforts and costs by us to comply with such changes. The costs of compliance with the various laws, regulations and policies applicable to us could be significant and penalties for non-compliance could significantly impact our business.

To the extent that our international operations are affected by adverse foreign economic or political conditions, we may experience disruptions and losses that could have a material impact on our financial position, results of operations or cash flow. To mitigate the risk of foreign receivables collection, we may obtain letters of credit from international customers to satisfy concerns regarding the collectability of amounts billed to customers.

Some of our contracts are denominated in foreign currencies, which may expose us to risks of fluctuating currency values and exchange rates, hard currency shortages and controls on currency exchange. Changes in the value of foreign currencies over the long term could increase our U.S. dollar costs for, or reduce our U.S. dollar revenues from, our foreign operations. Any increased costs or reduced revenues as a result of foreign currency fluctuations could adversely affect our results of operations.

The execution of our growth strategy is dependent upon the continued availability of credit and third-party financing arrangements for our customers.

Economic downturns result in tighter credit markets, which could adversely affect our customers' ability to secure financing or to secure financing at favorable terms or interest rates necessary to proceed or continue with purchases of our products and services. Further, certain government agencies, including the U.S. Treasury, have implemented or signaled the implementation of policies that may result in increased interest rates and borrowing costs. Our customers' or potential customers' inability to secure financing for projects could result in the delay, cancellation or downsizing of new purchases or the suspension of purchases already under contract, which could cause a decline in the demand for our products and services and negatively impact our financial position, results of operations or cash flow.

We operate in highly competitive markets.

The markets in which we operate are highly competitive. Many of our competitors have significantly greater financial resources than we do. The intensity of this competition, which is expected to continue, can result in price discounting and margin pressures throughout the industry and may adversely affect our ability to increase or maintain prices for our products. In addition, certain of our competitors may have lower overall labor or material costs. In some cases, our contracts with municipal and other governmental customers are awarded and renewed through competitive bidding. We may not be successful in obtaining or renewing these contracts, which could have an adverse effect on our financial condition, results of operations or cash flow.

Strategic and Operational Risks

Failure to keep pace with technological developments may adversely affect our operations.

We are engaged in an industry that will be affected by future technological developments. The introduction of products or processes utilizing new technologies, including those resulting from any new ESG regulations, could require us to make significant changes to our existing products or processes in order for them to remain marketable and competitive. Our success will depend upon our ability to develop and introduce on a timely and cost-effective basis new products, applications and processes that keep pace with technological developments and address increasingly sophisticated customer requirements. We may not be successful in identifying, developing and marketing new products, applications and processes and product or process enhancements. We may experience difficulties that could delay or prevent the successful development, introduction and marketing of product or process enhancements or new products, applications or processes. Our products, applications or processes may not adequately meet the requirements of the marketplace and achieve market acceptance. Our financial condition, results of operations or cash flow could be materially and adversely affected if we were to incur delays in developing new products, applications or processes or product or process enhancements, or if our products do not gain market acceptance.

Our efforts to develop new products and services or enhance existing products and services involve substantial research, development and marketing expenses, and the resulting new or enhanced products or services may not generate sufficient revenues to justify the expense.

We place a high priority on developing new products and services, as well as enhancing our existing products and services. As a result of these efforts, we may be required to expend substantial research, development and marketing resources, and the time and expense required to develop a new product or service or enhance an existing product or service are difficult to predict. We may not succeed in developing, introducing or marketing new products or services or product or service enhancements. In addition, we cannot be certain that any new or enhanced product or service will generate sufficient revenue to justify the expense and resources devoted to the related product diversification effort.

The inability to obtain raw materials, component parts and/or finished goods in a timely and cost-effective manner would adversely affect our ability to manufacture and market our products.

We purchase from suppliers raw materials, component parts and finished goods to be used in the manufacturing and sale of our products. In addition, we may incorporate vehicle chassis provided directly by our customers in our production process. Although the vast majority of our raw materials and component parts are sourced domestically, certain of our suppliers are based overseas, and certain of our domestic suppliers may source subcomponents from overseas. Outbreaks of communicable diseases have been known to occur in certain of these international regions, resulting in public health crises. Global markets for various products and goods have suffered, and are continuing to suffer, material disruptions to certain supply chains. Changes in our relationships with suppliers, shortages in availability of materials, production delays, regulatory restrictions, public health crises, or other supply chain disruptions, whether due to our suppliers or customers, could have a material adverse effect on our ability to timely manufacture and deliver products to our customers. Increases in the costs of purchased raw materials, component parts or finished goods could result in manufacturing interruptions, delays, inefficiencies or our inability to market products. In addition, our profit margins would decrease if prices of purchased raw materials, component parts or finished goods increase and we are unable to pass on those increases to our customers.

As economies around the world have recovered since the initial onset of the pandemic, sharp increases in demand have created significant disruption to the global supply chain, which has adversely affected our ability to receive goods on a timely basis and increased our material costs. Short-term or sustained increases in market demand may exceed our suppliers’ production capacity or otherwise strain our supply chain. Our failure, or our suppliers’ failure, to meet the demand for raw materials and components could adversely affect our business and results of operations.

During 2021, our manufacturing operations were adversely affected as the continuity of our material supply was adversely impacted by capacity constraints, global logistics disruptions, component shortages and coronavirus-related production downtime at certain suppliers. We are currently experiencing supply shortages and inflationary pressure for certain components and raw materials, including chassis, hydraulic pumps, steel, aluminum and electronic components that are important to our manufacturing processes. When facing supply-related challenges, we may increase our inventory levels and purchase commitments to shorten lead times and to help maintain adequate inventory levels to meet customer expectations. While we actively monitor and take steps in an effort to mitigate supply chain risk, there can be no assurance that our mitigation plans will prevent disruptions that may arise from shortages of materials that we use in the production of our products.

Challenges within global logistics networks, including shortages of shipping containers, international port congestion, trucking and chassis shortages, rail, ocean and air freight capacity constraints, and shortages in labor availability, have resulted in delays in receiving key manufacturing components, increased order backlogs and higher transportation costs. Such logistical disruption may cause us to incur higher freight costs to expedite the receipt of components from our suppliers or the delivery of products to our customers, and may also result in longer lead times for our customers.

Uncertainties related to the magnitude and duration of global supply chain disruptions have adversely affected, and may continue to adversely affect, our business and our outlook. If we are unable to recover a substantial portion of the increase in material and transportation costs from our customers through price adjustments and/or surcharges, our business or results of operations could be adversely affected. We may also experience an increase in order cancellations if any such pricing actions are not accepted by our customers.

Disruptions within our dealer network or the inability of our dealers to secure adequate access to capital could adversely affect our business.

We rely on national and global dealer networks to market certain of our products and services. As a result, our business with respect to these products and services is influenced by our ability to manage new and existing relationships with dealers. While we have relatively low turnover of dealers, from time to time, we or a dealer may choose to terminate the relationship as a result of difficulties that our dealers experience in operating their businesses due to economic conditions or other factors. While we do not believe our business is dependent on any single dealer, a disruption in our dealer network, or with a significant dealer, or within a specific market, could have an adverse impact on our business within the affected market. In addition, our dealers require adequate liquidity to finance their operations, including purchases of our products. Dealers are subject to numerous risks and uncertainties that could unfavorably affect their liquidity positions, including, among other things, continued access to adequate financing sources on a timely basis on reasonable terms. These sources of financing are vital to our ability to sell products through our dealer network. Deterioration in the liquidity or credit worthiness of our dealers could have a significant adverse effect on our business. From time to time, we may provide financing assistance to dealers or consider taking ownership positions. The loss or termination of a significant dealer, or a significant number of dealers, could cause difficulties in marketing and distributing our products and have an adverse effect on our business, financial condition, results of operations or cash flow.

We may be unsuccessful in our future acquisitions, if any, which may have an adverse effect on our business.

Our long-term strategy includes exploring acquisitions of companies or businesses to facilitate our growth, enhance our global market position and broaden our product offerings. Such acquisitions may help us expand into adjacent markets, add complementary products and services or allow us to leverage our distribution channels. In connection with this strategy, we could face certain risks and uncertainties in addition to those we face in the day-to-day operations of our business. We also may be unable to identify suitable targets for acquisition or to make acquisitions at favorable prices. If we identify a suitable acquisition candidate, our ability to successfully implement the acquisition would depend on a variety of factors, including our ability to obtain financing on acceptable terms. In addition, our acquisition activities could be disrupted by overtures from competitors for the targeted companies, governmental regulation and rapid developments in our industry that decrease the value of a potential target's products or services.

Acquisitions involve risks, including those associated with the following:

- integrating the operations, financial reporting, disparate systems and processes and personnel of acquired companies;
- managing geographically dispersed operations;
- diverting management's attention from other business concerns;
- changing the competitive landscape, including disrupting existing sales channels or markets;
- entering markets or lines of business in which we have either limited or no direct experience; and
- losing key employees, customers and strategic partners of acquired companies.

We also may not achieve anticipated revenue and cost benefits associated with our acquisitions. Acquisitions may not be accretive to our earnings and may negatively impact our results of operations as a result of, among other things, the incurrence of debt, acquisition costs, impairment of goodwill and amortization of other intangible assets. In addition, future acquisitions could result in dilutive issuances of equity securities.

Businesses acquired by us may have liabilities that are not known to us.

We may assume liabilities in connection with the acquisition of businesses. There may be liabilities that we fail or are unable to discover in the course of performing due diligence investigations on the acquired businesses, or that may be more material than we discovered. In these circumstances, we cannot assure that our rights to indemnification will be sufficient in amount, scope or duration to fully offset the possible liabilities associated with the businesses or property acquired. Further, these liabilities could result in unexpected legal or regulatory exposure, unexpected increases in taxes or other adverse effects on our business. Any such liabilities, individually or in the aggregate, could have a material adverse effect on our financial condition, results of operations or cash flow.

We could incur restructuring and impairment charges as we continue to evaluate opportunities to restructure our business and rationalize our manufacturing operations in an effort to optimize our cost structure.

We continue to evaluate opportunities to restructure our business and rationalize our manufacturing operations in an effort to optimize our cost structure. These actions could result in significant charges that could adversely affect our financial condition and results of operations. Future actions could result in restructuring and related charges, including but not limited to impairments, employee termination costs and charges for pension and other postretirement contractual benefits and pension curtailments that could be significant and could have an adverse effect on our financial condition, results of operations or cash flow.

Indebtedness Risk

We are subject to a number of restrictive debt covenants.

Our credit facility contains certain restrictive debt covenants and customary events of default. Our ability to comply with these restrictive covenants may be affected by the other factors described in this "*Risk Factors*" section, as well as other factors outside of our control. Failure to comply with one or more of these restrictive covenants may result in an event of default which, if not cured by us or waived by our lenders, allows our lenders to declare all amounts outstanding as due and payable. Such an acceleration of the maturity of our indebtedness may cause us to incur substantial costs and may prevent or limit us from engaging in transactions that benefit us, including responding to changing business and economic conditions and taking advantage of attractive business opportunities.

Human Capital and Labor Risks

Our ability to operate effectively could be impaired if we fail to attract and retain key personnel.

Our ability to operate our businesses and implement our strategies depends in part on the efforts of our executive officers and other key employees. In addition, our future success will depend on, among other factors, our ability to attract and retain qualified personnel. The loss of the services of any key employee or the failure to attract or retain other qualified personnel could have a material adverse effect on our business or business prospects.

Our business may be adversely impacted by work stoppages and other labor relations matters.

As a portion of our workforce is unionized, we are subject to risk of work stoppages and other labor relations matters. As of December 31, 2021, approximately 13% of our U.S. hourly workers were represented by labor unions and were covered by collective bargaining agreements with various unions. Our current collective bargaining agreement with the International Brotherhood of Electrical Workers is due to expire in April 2022. Any strikes, threats of strikes or other organized disruptions in connection with the negotiation of new labor agreements or other negotiations could materially adversely affect our business as well as impair our ability to implement further measures to reduce costs and improve production efficiencies. In addition, the stoppage of work for a prolonged period of time at one, or several, of our principal manufacturing facilities, due to public health concerns or the implementation of any government-mandated vaccine or testing requirement, or any other reason, could materially adversely affect our business.

Our pension funding requirements and expenses are affected by certain factors outside of our control, including the performance of plan assets, the discount rate used to value liabilities, actuarial assumptions and experience and legal and regulatory changes.

Our funding obligations and pension expense for our defined benefit pension plans are driven by the performance of assets set aside in trusts for these plans, the discount rate used to value the plans' liabilities, actuarial assumptions and experience and legal and regulatory funding requirements. Changes in these factors could have an adverse impact on our financial condition, results of operations or cash flow. In addition, a portion of our pension plan assets are invested in equity securities, which can experience significant declines if financial markets weaken. The level of the funding of our defined benefit pension plan liabilities was approximately 91% as of December 31, 2021. Funding of the Company's U.S. defined benefit pension plan is determined in accordance with guidelines set forth in the Employee Retirement Income Security Act. The current year funding status was impacted by a higher discount rate than in the prior year. Our future pension expenses and funding requirements could increase significantly due to the effect of adverse changes in the discount rate, asset values or the estimated expected return on plan assets. In addition, we could become legally required to make increased cash contributions to the pension plans, and these contributions could be material and negatively affect our cash flow.

Data Security and Intellectual Property Risks

Increased information technology security threats and more sophisticated cybersecurity attacks pose a risk to our systems, networks, products and operations.

We rely upon information technology systems and networks, some of which are managed by third parties, to support a variety of business processes and activities, and to comply with regulatory, legal and tax requirements. Additionally, in the ordinary course of business, we collect and store sensitive information relating to our businesses, customers, suppliers and employees. Sensitive information may also be stored by our vendors and on the platforms and networks of third-party providers. The secure operation of these information technology systems and networks and processing and maintenance of this information is critical to the Company's business operations and strategy.

These information technology systems and networks may be susceptible to damage, disruptions or shutdowns due to hardware failures, computer viruses, cybersecurity attacks, telecommunication failures, user errors, catastrophic events or other factors. Further, information technology security threats are growing in frequency and sophistication. Accordingly, we have implemented and continue to implement measures to address cybersecurity attacks and mitigate potential risks to our systems from these information technology-related disruptions. Despite the information security measures we have taken, our systems and networks remain potentially vulnerable to attacks, as do those of our vendors and third-party providers. Cybersecurity attacks on the Company, our vendors or our third-party providers could potentially result in the compromising of confidential information, misuse of our systems and networks, manipulation and destruction of data, misappropriation of assets or production stoppages and supply shortages, which in turn could adversely affect our reputation, financial condition, results of operations or cash flow.

Although we have not suffered any significant cyber incidents that have had a material business impact, we and our vendors have, from time to time, been the target of malicious cyber threats. While various procedures and controls have been and are being utilized to mitigate information technology risks, there can be no guarantee that the actions and controls that we and our third-party providers have implemented will be sufficient to protect our systems, information or other property. Further, the amount of insurance coverage we maintain may be inadequate to cover claims or liabilities relating to a cybersecurity attack.

Infringement of, or an inability to protect, our intellectual property rights could adversely affect our business.

We rely on a combination of patents, trademarks, copyrights, nondisclosure agreements, information technology security systems, physical security and other measures to protect our proprietary intellectual property and the intellectual property of certain customers and suppliers. However, we cannot be certain that our efforts to protect these intellectual property rights will be sufficient. Intellectual property protection is subject to applicable laws in various jurisdictions where interpretations and protections differ or can be unpredictable and costly to enforce. Further, our ability to protect our intellectual property rights may be limited in certain foreign jurisdictions that do not have, or do not enforce, strong intellectual property rights. Any failure to protect or enforce our intellectual property rights could have a material adverse effect on our competitive position, financial condition, results of operations or cash flow.

Legal and Financial Risks

We may incur material losses and costs as a result of lawsuits or claims that may be brought against us which are related to product liability, warranty, product recalls, intellectual property, client service interruptions or other matters.

We are exposed to product liability and warranty claims in the normal course of business in the event that our products actually or allegedly fail to perform as expected, or the use of our products results, or is alleged to result, in bodily injury and/or property damage. For example, we have been sued by firefighters seeking damages claiming that exposure to our sirens has impaired their hearing and that the sirens are, therefore, defective. In addition, we are subject to other claims and litigation from time to time, as further described in the accompanying notes to our consolidated financial statements. We could experience material product liability or warranty costs in the future and incur significant costs to defend ourselves against these claims. While we carry insurance and maintain reserves for product liability claims, our insurance coverage may be inadequate if such claims do arise, and any defense costs and liability not covered by insurance could have a material adverse impact on our financial condition, results of operations or cash flow. A future claim could involve the imposition of punitive damages, the award of which, pursuant to state laws, may not be covered by insurance. In addition, warranty and certain other claims are not typically covered by insurance. Any product liability or warranty issues may adversely impact our reputation as a manufacturer of high-quality, safe products and may have a material adverse effect on our business.

The costs associated with complying with environmental, safety and other ESG regulations could lower our margins.

We, like other manufacturers, continue to face heavy governmental regulation of our products, especially in the areas of the environment and employee health and safety. Increased public awareness and concern regarding climate change and other ESG matters at numerous levels of government in various jurisdictions may lead to additional international, national, regional and local legislative and regulatory responses, and compliance with any new rules could be difficult and costly. These regulations could include environmental requirements applicable to manufacturing and vehicle emissions and regulations impacting our supply chain both nationally and internationally. Complying with environmental, safety and other ESG requirements has added and will continue to add to the cost of our products, could increase the capital required to support our business and could affect the products and services that we offer. While we believe that we are in compliance in all material respects with these laws and regulations, we may be adversely impacted by costs, liabilities or claims with respect to our operations under existing laws or those that may be adopted. These requirements are complex, change frequently and have tended to become more stringent over time. Therefore, we could incur substantial costs, including cleanup costs, fines and civil or criminal sanctions as a result of violation of, or liabilities under, environmental laws and safety regulations. Further, climate change regulations at the federal, state or local level or in international jurisdictions could require us to limit emissions, change our manufacturing processes or product offerings, or undertake other activities which may require us to incur additional expense. These requirements may increase the cost of our products, which may diminish demand for those products.

Additionally, uneven application of environmental, safety and other ESG regulations could place our products at a cost or features disadvantage, which could reduce our revenues and profitability. A failure, or perceived failure, to respond to investor or customer expectations related to ESG concerns in areas such as climate change and supply chain management could materially adversely affect our business and reputation.

An impairment in the carrying value of goodwill, intangible assets or long-lived assets could negatively affect our financial position and results of operations.

As of December 31, 2021, goodwill and intangible assets represented 32% and 15% of total consolidated assets, respectively. Rental equipment and properties and equipment are long-lived assets, which also represented more than 5% of our total consolidated assets as of December 31, 2021. Goodwill and indefinite-lived intangible assets are tested for impairment annually, or more frequently if indicators of impairment exist. Definite-lived intangible assets and long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. In evaluating the potential for impairment of goodwill, intangible assets and long-lived assets, we make assumptions regarding future operating performance, business trends, competition and market and general economic conditions. Such analyses further require us to make certain assumptions about our sales, operating margins, growth rates and discount rates. There are inherent uncertainties related to these factors. An impairment charge may result from, among other things, a significant decline in operating results, adverse market conditions, unfavorable changes in applicable laws or regulations, or a variety of other factors. Our total consolidated assets and results of operations for the applicable period could be materially adversely affected if any such charge is recorded.

Item 1B. *Unresolved Staff Comments.*

None.

Item 2. *Properties.*

As of December 31, 2021, the Company utilized 15 principal manufacturing plants located throughout the U.S., as well as two in Europe, two in Canada and one in South Africa. The Company also leases facilities within the U.S., Europe and Canada from which we provide sales, service and/or equipment rentals. As of December 31, 2021, the Company devoted approximately 2.3 million square feet to manufacturing and 0.9 million square feet to sales, service, warehousing and office space. Of the total square footage, approximately 82% is devoted to the Environmental Solutions Group and 18% to the Safety and Security Systems Group. Approximately 53% of the total square footage is owned by the Company with the remaining 47% being leased. Owned facilities are subject to liens under the Company's Second Amended and Restated Credit Agreement dated July 30, 2019 (as amended, the "2019 Credit Agreement").

The Company believes its properties, and related machinery and equipment, are well-maintained, suitable and adequate for their intended purposes. In the aggregate, these facilities are of sufficient capacity for the Company's current business needs. However, the Company may make additional investments in certain facilities in the future in response to increased demand for the Company's products.

Item 3. *Legal Proceedings.*

The information concerning the Company's legal proceedings included in Note 13 – Legal Proceedings to the accompanying consolidated financial statements is incorporated herein by reference.

Item 4. *Mine Safety Disclosures.*

Not applicable.

PART II

Item 5. *Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.*

Market Information

The Company's common stock is listed and traded on the New York Stock Exchange under the symbol "FSS".

Holders

As of February 28, 2022, there were 1,462 holders of record of the Company's common stock.

Securities Authorized for Issuance under Equity Compensation

Information concerning the Company's equity compensation plans is included under Item 12 of Part III of this Form 10-K.

Recent Sales of Unregistered Securities

There were no sales of unregistered securities by the Company during the year ended December 31, 2021.

Purchases of Equity Securities

The following table provides a summary of the Company's repurchase activity for its common stock during the three months ended December 31, 2021:

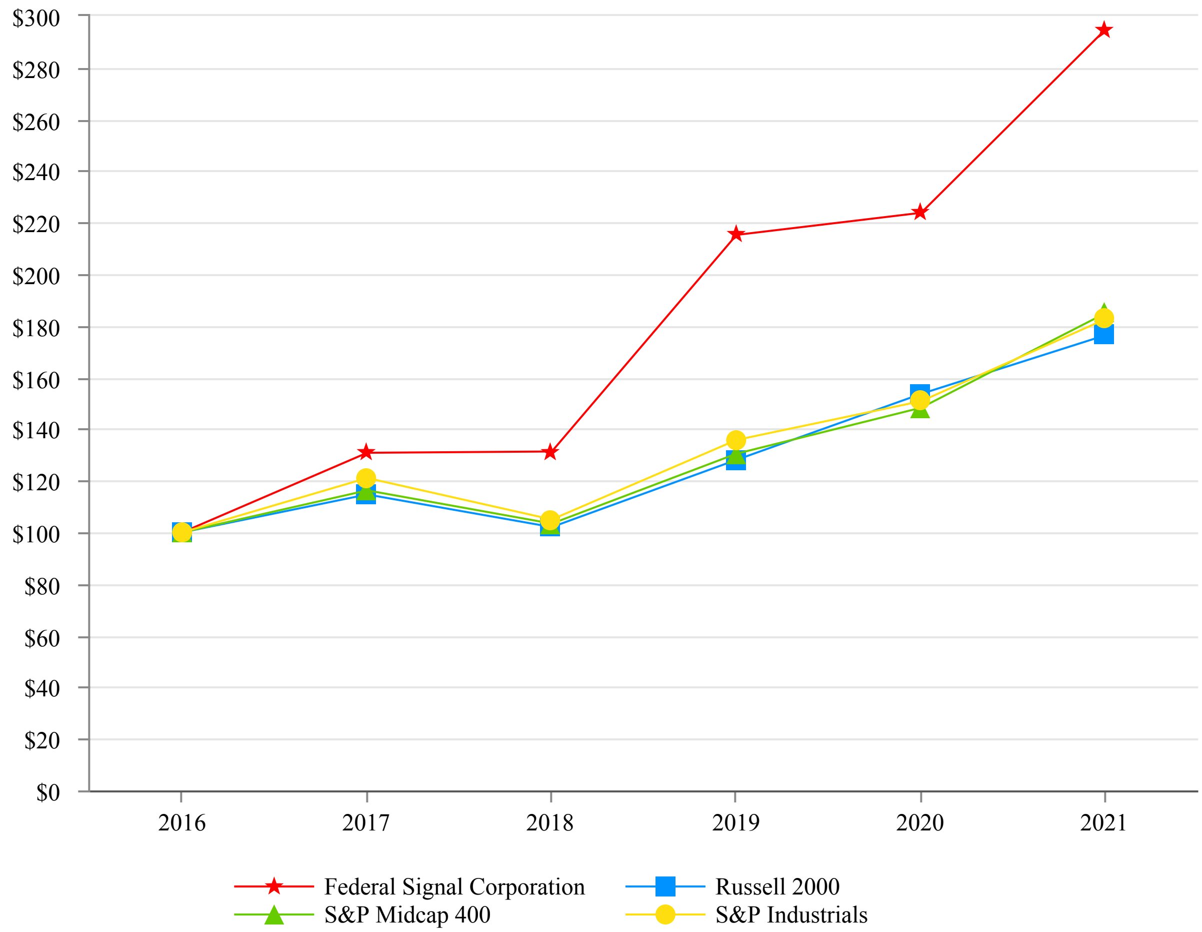
Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs [(a) (b)]
October 2021 (10/3/21 - 11/6/21)	—	$ —	—	$ 87,149,983
November 2021 (11/7/21 - 12/4/21)	100,000	43.3434	100,000	82,815,639
December 2021 (12/5/21 - 12/31/21)	174,050	44.0428	174,050	75,149,983

(a) In November 2014, the Company's Board of Directors (the "Board") authorized a stock repurchase program of up to $75.0 million of the Company's common stock.

(b) In March 2020, the Board authorized an additional stock repurchase program of up to $75.0 million of the Company's common stock. This program supplements the November 2014 stock repurchase program, which remains in effect.

Performance Graph

The following graph compares the cumulative five-year total return to stockholders of the Company's common stock relative to the cumulative total returns of the Russell 2000 index, the S&P Midcap 400 index and the S&P Industrials index. The graph assumes that the value of the investment in the Company's common stock, and in each index, was $100 on December 31, 2016 and assumes reinvestment of all dividends through December 31, 2021.



	As of December 31,					
	2016	2017	2018	2019	2020	2021
Federal Signal Corporation	$ 100.00	$ 130.80	$ 131.30	$ 215.20	$ 223.77	$ 294.95
Russell 2000	100.00	114.65	102.02	128.06	153.62	176.39
S&P Midcap 400	100.00	116.24	103.36	130.44	148.26	184.96
S&P Industrials	100.00	121.03	104.95	135.77	150.79	182.63

The stock price performance included in this graph is not necessarily indicative of future stock price performance. Notwithstanding anything set forth in any of our previous filings under the Securities Act or the Exchange Act, which might be incorporated into future filings in whole or part, including this Form 10-K, the preceding performance graph shall not be deemed incorporated by reference into any such filings.

Item 6. [Reserved]

Not applicable.

Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations.*

Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is designed to provide information that is supplemental to, and shall be read together with, the consolidated financial statements and the accompanying notes contained in this Form 10-K. Information in MD&A is intended to assist the reader in obtaining an understanding of (i) the consolidated financial statements, (ii) the Company's business segments and how the results of those segments impact the Company's results of operations and financial condition as a whole and (iii) how certain accounting principles affect the Company's consolidated financial statements.

Executive Summary

The Company is a leading global manufacturer and supplier of (i) vehicles and equipment for maintenance and infrastructure end-markets, including sewer cleaners, industrial vacuum loaders, safe-digging trucks, street sweepers, waterblasting equipment, road-marking and line-removal equipment, dump truck bodies, trailers and metal extraction support equipment, and (ii) public safety equipment, such as vehicle lightbars and sirens, industrial signaling equipment, public warning systems and general alarm/public address systems. In addition, we engage in the sale of parts, service and repair, equipment rentals and training as part of a comprehensive aftermarket offering to our customer base. We operate 20 manufacturing facilities in five countries and provide products and integrated solutions to municipal, governmental, industrial and commercial customers in all regions of the world.

As described in Note 17 – Segment Information to the accompanying consolidated financial statements, the Company's business units are organized in two reportable segments: the Environmental Solutions Group and the Safety and Security Systems Group.

Coronavirus Update

The coronavirus pandemic adversely impacted our operating results for the year ended December 31, 2020. As market conditions have gradually improved, we have seen strong recovery in customer demand, with orders for the year ended December 31, 2021 increasing by $492 million, or 47%, compared to the prior year. This order improvement has contributed to a record backlog of $629 million as of December 31, 2021.

However, the pace of economic recovery in many countries and high levels of demand have placed significant pressure on global supply chains, which has been exacerbated by labor shortages and transportation challenges. In particular, there have been significant global shortages in semi-conductors and component parts, which among other things has led to a decline in the availability of chassis in North America. These supply chain disruptions have impacted our ability to obtain certain raw materials and purchased components that are necessary to our production processes, including the ability to obtain a sufficient quantity of chassis from third-party suppliers to maximize production efficiencies and deliver products to our customers. With these supply chain challenges, we have also experienced increases in the cost of raw materials, such as steel, and have taken measures designed to mitigate the associated impacts. While we were able to largely mitigate these issues during the year ended December 31, 2021, we cannot provide any assurance that such mitigation efforts will be successful in addressing further supply chain disruption, especially with respect to chassis, which may impact our ability to service our customers, effectively roll out and realize price increases to offset the effects of commodity inflation and sustain our profit margins.

We continue to closely monitor the impact of the pandemic, and its emerging variants, on our business, including how it is affecting our employees, customers, supply chain and distribution network. The overall magnitude of the direct and indirect impact of the pandemic on our operating and financial results remains uncertain and will largely depend on the duration of the pandemic and the measures implemented in response, as well as the effect on our customers and suppliers.

Operating and Financial Performance in 2021

Despite the challenges created by the coronavirus pandemic, the Company was able to sustain a high level of financial performance and make progress against several long-term objectives in 2021. Included among the Company's highlights in 2021 were the following:

- Orders exceeded $1.5 billion for the first time in the Company's history, and were up $492 million, or 47%, from last year.
- Backlog at December 31, 2021 was $629 million, a new Company record, and more than double the backlog at the end of last year.
- Net sales for the year ended December 31, 2021 were $1.2 billion, an increase of $82 million, or 7% from last year.
- For the year ended December 31, 2021, we reported operating income and income from continuing operations of $130.7 million and $100.6 million, respectively.

- On a consolidated basis, we reported adjusted EBITDA* of $180.5 million for the year ended December 31, 2021, which translated to an adjusted EBITDA margin* of 14.9%, towards the high-end of our target range.
- Cash flow from continuing operating activities for the year ended December 31, 2021 was $101.8 million.
- With the positive operating cash flow, we ended the year with $41 million of cash and $209 million of availability for borrowings under our $500 million credit facility, which was executed in July 2019. The five-year facility can be increased by an additional $250 million for acquisitions.
- With our strong balance sheet, positive operating cash flow, and capacity under our revolving credit facility, we are well positioned to continue to invest in internal growth initiatives, pursue strategic acquisitions and consider ways to return value to stockholders, as we did during 2021:
    - Our capital expenditures in 2021 were approximately $37 million, most of which related to the acquisition of our Elgin, Illinois manufacturing facility, which we had previously leased. We also continued to make strategic investments for the future by purchasing new machinery and equipment aimed at gaining operating efficiencies and expanding capacity at several of our production facilities.
    - We continue to invest in new product development and are encouraged that these efforts will provide additional opportunities to further diversify our customer base, penetrate new end-markets or gain access to new geographic regions.
    - We completed three acquisitions in 2021, with the addition of OSW, Ground Force and Deist providing us with opportunities to expand our geographic footprint and augment our specialty vehicle product offerings.
    - We demonstrated our commitment to returning value to our stockholders by paying cash dividends of $22.0 million, and spending $15.4 million repurchasing shares under our authorized repurchase program.
- Our eighty-twenty improvement initiatives remain a critical part of our culture and we continue to focus on reducing product costs and improving manufacturing efficiencies across all our businesses.
- To highlight our ongoing focus on operating in a socially responsible and sustainable manner, we published our second annual Sustainability Report in November 2021.

* The Company uses adjusted earnings before interest, tax, depreciation and amortization (“adjusted EBITDA”) and the ratio of adjusted EBITDA to net sales (“adjusted EBITDA margin”) as additional measures which are representative of its underlying performance and to improve the comparability of results across reporting periods. Refer to the Results of Operations section for further discussion regarding these non-GAAP metrics and a reconciliation of each to the most comparable GAAP measure for each of the periods presented.

Results of Operations

The following table summarizes our Consolidated Statements of Operations as of, and for the years ended, December 31, 2021, 2020 and 2019, and illustrates the key financial indicators used to assess our consolidated financial results:

	For the Years Ended December 31,			Change	
($ in millions, except per share data)	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Net sales	$ 1,213.2	$ 1,130.8	$ 1,221.3	$ 82.4	$ (90.5)
Cost of sales	924.5	837.2	898.5	87.3	(61.3)
Gross profit	288.7	293.6	322.8	(4.9)	(29.2)
Selling, engineering, general and administrative expenses	149.2	149.2	164.4	—	(15.2)
Amortization expense	10.9	9.6	8.8	1.3	0.8
Acquisition and integration-related (benefits) expenses	(2.1)	2.1	2.5	(4.2)	(0.4)
Restructuring	—	1.3	—	(1.3)	1.3
Operating income	130.7	131.4	147.1	(0.7)	(15.7)
Interest expense	4.5	5.7	7.9	(1.2)	(2.2)
Pension settlement charges	10.3	—	—	10.3	—
Other (income) expense, net	(1.7)	1.1	0.6	(2.8)	0.5
Income before income taxes	117.6	124.6	138.6	(7.0)	(14.0)
Income tax expense	17.0	28.5	30.2	(11.5)	(1.7)
Income from continuing operations	100.6	96.1	108.4	4.5	(12.3)
Gain from discontinued operations and disposal, net of tax	—	0.1	0.1	(0.1)	—
Net income	$ 100.6	$ 96.2	$ 108.5	$ 4.4	$ (12.3)
Other data:					
Operating margin	10.8 %	11.6 %	12.0 %	(0.8)%	(0.4)%
Adjusted EBITDA [(a)]	$ 180.5	$ 182.2	$ 191.3	$ (1.7)	$ (9.1)
Adjusted EBITDA margin [(a)]	14.9 %	16.1 %	15.7 %	(1.2)%	0.4 %
Diluted earnings per share — Continuing operations	$ 1.63	$ 1.56	$ 1.76	$ 0.07	$ (0.20)
Total orders	1,538.8	1,047.1	1,269.0	491.7	(221.9)
Backlog	628.9	303.9	386.9	325.0	(83.0)
Depreciation and amortization	50.4	44.8	41.5	5.6	3.3

(a) The Company uses adjusted EBITDA and adjusted EBITDA margin as additional measures which are representative of its underlying performance and to improve the comparability of results across reporting periods. We believe that investors use versions of these metrics in a similar manner. For these reasons, the Company believes that adjusted EBITDA and adjusted EBITDA margin are meaningful metrics to investors in evaluating the Company's underlying financial performance. Adjusted EBITDA is a non-GAAP measure that represents the total of income from continuing operations, interest expense, pension settlement charges, acquisition and integration-related (benefits) expenses, restructuring activity, coronavirus-related expenses, purchase accounting effects, other income/expense, income tax expense, depreciation and amortization expense and the impact of adoption of a new lease accounting standard, where applicable. Adjusted EBITDA margin is a non-GAAP measure that represents the total of income from continuing operations, interest expense, pension settlement charges, acquisition and integration-related (benefits) expenses, restructuring activity, coronavirus-related expenses, purchase accounting effects, other income/expense, income tax expense, depreciation and amortization expense and the impact of adoption of a new lease accounting standard, where applicable, divided by net sales for the applicable period(s). Other companies may use different methods to calculate adjusted EBITDA and adjusted EBITDA margin.

A discussion of changes in the Company's financial condition and results of operations during the year ended December 31, 2020 compared to the year ended December 31, 2019 has been omitted from this Annual Report on Form 10-K, but may be found under the heading "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in the Company's Annual Report on Form 10-K for the year ended December 31, 2020, filed with the SEC on February 25, 2021.

Year ended December 31, 2021 vs. year ended December 31, 2020

Net sales

Net sales for the year ended December 31, 2021 increased by $82.4 million, or 7%, compared to the prior year. The Environmental Solutions Group reported a net sales increase of $88.2 million, or 10%, primarily due to a $55.8 million improvement in aftermarket revenues, inclusive of a $30.0 million increase in used equipment sales, increases in sales of dump truck bodies, industrial vacuum loaders and waterblasting equipment of $27.4 million, $7.5 million and $6.9 million, respectively, and a $12.2 million favorable foreign currency translation impact. Partially offsetting these improvements were reductions in shipments of street sweepers and sewer cleaners of $14.5 million and $13.8 million, respectively. Within the Safety and Security Systems Group, net sales decreased by $5.8 million, or 3%, primarily due to reductions in sales of public safety equipment and warning systems of $7.7 million and $2.5 million, respectively, partially offset by a $2.2 million increase in sales of industrial signaling equipment and a $2.2 million favorable foreign currency translation impact.

Cost of sales

For the year ended December 31, 2021, cost of sales increased by $87.3 million, or 10%, compared to the prior year, largely due to an increase of $90.1 million, or 13%, within the Environmental Solutions Group, primarily related to increased sales volumes, inclusive of current-year acquisition effects, higher material costs, an $11.6 million unfavorable foreign currency translation impact and a $3.8 million increase in depreciation expense. Within the Safety and Security Systems Group, cost of sales decreased by $2.8 million, or 2%, primarily related to lower sales volumes, partially offset by a $1.6 million unfavorable foreign currency translation impact and higher material and freight costs.

Gross profit

For the year ended December 31, 2021, gross profit decreased by $4.9 million, or 2%, compared to the prior year, primarily due to reductions of $3.0 million and $1.9 million within the Safety and Security Systems Group and Environmental Solutions Group, respectively. Gross profit as a percentage of net sales ("gross profit margin") for the year ended December 31, 2021 was 23.8%, compared to 26.0% in the prior year, primarily driven by reductions within the Environmental Solutions Group and Safety and Security Systems Group of 220 basis points and 40 basis points, respectively.

Selling, engineering, general and administrative ("SEG&A") expenses

For the year ended December 31, 2021, SEG&A expenses remained consistent with the prior year, with a $1.5 million reduction in Corporate SEG&A expenses being largely offset by a $1.4 million increase within the Environmental Solutions Group. As a percentage of net sales, SEG&A expenses decreased from 13.2% in the prior year, to 12.3% in the current year.

Operating income

Operating income for the year ended December 31, 2021 decreased by $0.7 million, or 1%, compared to the prior year, largely due to the $4.9 million reduction in gross profit and a $1.3 million increase in amortization expense, partially offset by a $4.2 million decrease in acquisition-related costs and the non-recurrence of $1.3 million of restructuring charges that were recognized in the prior year. Consolidated operating margin for the year ended December 31, 2021 was 10.8%, compared to 11.6% in the prior year.

Interest expense

Interest expense for the year ended December 31, 2021 decreased by $1.2 million, or 21%, compared to the prior year, largely due to lower average debt levels in comparison to the prior year.

Pension settlement charges

During the year ended December 31, 2021, the Company recognized a pension settlement charge of $10.3 million in connection with the purchase of a group annuity contract from an insurance company, under which approximately $25 million of the projected benefit obligation of the Company's U.S. defined benefit plan was transferred to the insurance company. For further discussion, see Note 11 – Pension and Other Post-Employment Plans to the accompanying consolidated financial statements.

Other (income) expense, net

For the year ended December 31, 2021, Other (income) expense, net, totaled $1.7 million of income, largely due to the recognition of $1.1 million of net periodic pension benefit and $0.3 million of foreign currency transaction gains. For the year ended December 31, 2020, Other (income) expense, net, totaled $1.1 million of expense, largely due to the recognition of a $2.3 million charge associated with the withdrawal from a multi-employer pension plan, partially offset by $0.5 million of net periodic pension benefit and $0.4 million of foreign currency transaction gains.

Income tax expense

The Company recognized income tax expense of $17.0 million for the year ended December 31, 2021, compared to $28.5 million for the year ended December 31, 2020. The reduction in income tax expense in the current year was primarily due to the recognition of a $3.4 million tax benefit associated with the release of state valuation allowances and a $3.3 million tax benefit associated with the remeasurement of deferred taxes for changes in state tax apportionment, both of which resulted from a change in tax status during the year, a $2.0 million increase in excess tax benefits from stock compensation activity and the effects of lower pre-tax earnings. Including these items, the Company's effective tax rate for the year ended December 31, 2021 was 14.5%, compared to 22.9% in 2020. For further discussion, see Note 10 – Income Taxes to the accompanying consolidated financial statements.

Income from continuing operations

Income from continuing operations for the year ended December 31, 2021 increased by $4.5 million, or 5%, compared to the prior year, largely due to a $11.5 million decrease in income tax expense, the $2.8 million increase in other income and the $1.2 million reduction in interest expense, partially offset by the recognition of the $10.3 million pension settlement charge and the reduced operating income.

Adjusted EBITDA

Adjusted EBITDA for the year ended December 31, 2021 was $180.5 million, compared to $182.2 million in the prior year. Adjusted EBITDA margin for the year ended December 31, 2021 was 14.9%, compared to 16.1% in the prior year.

The following table summarizes the Company's adjusted EBITDA and adjusted EBITDA margin and reconciles income from continuing operations to adjusted EBITDA for each of the three years in the period ended December 31, 2021:

	For the Years Ended December 31,		
($ in millions)	**2021**	**2020**	**2019**
Income from continuing operations	$ 100.6	$ 96.1	$ 108.4
Add (less):			
Interest expense	4.5	5.7	7.9
Pension settlement charges	10.3	—	—
Acquisition and integration-related (benefits) expenses	(2.1)	2.1	2.5
Restructuring	—	1.3	—
Coronavirus-related expenses [a]	1.2	2.3	—
Purchase accounting effects [b]	0.3	0.3	0.2
Other (income) expense, net	(1.7)	1.1	0.6
Income tax expense	17.0	28.5	30.2
Depreciation and amortization	50.4	44.8	41.5
Adjusted EBITDA	$ 180.5	$ 182.2	$ 191.3
Net sales	$1,213.2	$1,130.8	$1,221.3
Adjusted EBITDA margin	14.9 %	16.1 %	15.7 %

(a) Coronavirus-related expenses relate to direct expenses incurred in connection with the Company's response to the coronavirus pandemic, that are incremental to, and separable from, normal operations. Such expenses primarily relate to incremental paid time off provided to employees and costs incurred to implement enhanced workplace safety protocols.

(b) Purchase accounting effects represent the step-up in the valuation of equipment acquired in recent business combinations that was sold during the periods presented.

Environmental Solutions

The following table summarizes the Environmental Solutions Group's operating results as of, and for the years ended, December 31, 2021, 2020 and 2019:

($ in millions)	For the Years Ended December 31, 2021	2020	2019	Change 2021 vs. 2020	2020 vs. 2019
Net sales	$ 1,004.0	$ 915.8	$ 992.9	$ 88.2	$ (77.1)
Operating income	120.5	124.3	139.4	(3.8)	(15.1)
Other data:					
Operating margin	12.0 %	13.6 %	14.0 %	(1.6)%	(0.4)%
Total orders	$ 1,297.3	$ 840.0	$ 1,038.0	$ 457.3	$ (198.0)
Backlog	576.4	282.5	357.6	293.9	(75.1)
Depreciation and amortization	46.7	41.3	38.1	5.4	3.2

Year ended December 31, 2021 vs. year ended December 31, 2020

Total orders increased by $457.3 million, or 54%, for the year ended December 31, 2021. U.S. orders increased by $416.6 million, or 63%, primarily due to improvements in orders for sewer cleaners, street sweepers, dump truck bodies, safe-digging trucks, trailers, industrial vacuum loaders, metal extraction support equipment and road-marking and line-removal equipment of $103.9 million, $67.6 million, $46.7 million, $37.3 million, $24.7 million, $21.3 million, $15.1 million and $10.4 million, respectively. In addition, upon acquiring OSW, Ground Force and Deist, we acquired a backlog of U.S. orders aggregating to $36.3 million, while aftermarket demand also increased by $36.3 million. Non-U.S. orders increased by $40.7 million, or 22%, primarily due to a $17.2 improvement in aftermarket demand, increases in orders for sewer cleaners, dump truck bodies, and industrial vacuum loaders of $7.9 million, $6.9 million, and $3.5 million, respectively, and a $11.9 million favorable foreign currency translation impact. In addition, upon acquiring OSW, Ground Force and Deist, we acquired a backlog of non-U.S. orders aggregating to $5.0 million. Partially offsetting these improvements was a $14.3 million reduction in orders for refuse trucks, primarily associated with the timing of large fleet orders in the prior-year period.

Net sales increased by $88.2 million, or 10%, for the year ended December 31, 2021. U.S. sales increased by $58.2 million, or 8%, largely due to a $40.1 million increase in aftermarket revenues and a $22.1 million increase in sales of dump truck bodies, partially offset by a $12.0 million reduction in shipments of sewer cleaners. Non-U.S. sales increased by $30.0 million, or 18%, primarily due to a $15.7 million improvement in aftermarket revenues, a $5.3 million increase in sales of dump truck bodies and a $12.2 million favorable foreign currency translation impact, partially offset by a $6.7 million reduction in shipments of street sweepers.

Cost of sales increased by $90.1 million, or 13%, for the year ended December 31, 2021, primarily due to increased sales volumes, inclusive of current-year acquisition effects, higher material costs, an $11.6 million unfavorable foreign currency translation impact and a $3.8 million increase in depreciation expense. Including these factors, gross profit margin for the year ended December 31, 2021 was 21.1%, compared to 23.3% in the prior year, with the impact of higher material costs and production inefficiencies associated with supply chain disruptions being partially offset by pricing actions and a more favorable sales mix, associated with the increase in aftermarket demand.

SEG&A expenses increased by $1.4 million, or 2%, for the year ended December 31, 2021, primarily due to the addition of expenses from current-year acquisitions. As a percentage of net sales, SEG&A expenses decreased from 8.6% in the prior year, to 8.0% in the current year.

Operating income decreased by $3.8 million, or 3%, for the year ended December 31, 2021, largely due to a $1.9 million reduction in gross profit, the $1.4 million increase in SEG&A expenses and a $1.3 million increase in amortization expense, partially offset by the non-recurrence of $0.7 million of restructuring charges that were recognized in the prior year and a $0.1 million decrease in acquisition-related costs.

Backlog was $576.4 million at December 31, 2021, compared to $282.5 million at December 31, 2020.

Safety and Security Systems

The following table summarizes the Safety and Security Systems Group's operating results as of, and for the years ended, December 31, 2021, 2020 and 2019:

	For the Years Ended December 31,			Change	
($ in millions)	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Net sales	$ 209.2	$ 215.0	$ 228.4	$ (5.8)	$ (13.4)
Operating income	32.7	35.5	38.6	(2.8)	(3.1)
Other data:					
Operating margin	15.6 %	16.5 %	16.9 %	(0.9)%	(0.4)%
Total orders	$ 241.5	$ 207.1	$ 231.0	$ 34.4	$ (23.9)
Backlog	52.5	21.4	29.3	31.1	(7.9)
Depreciation and amortization	3.6	3.4	3.3	0.2	0.1

Year ended December 31, 2021 vs. year ended December 31, 2020

Total orders increased by $34.4 million, or 17%, for the year ended December 31, 2021. U.S. orders increased by $15.6 million, or 12%, compared to the prior year, driven by improvements in orders for public safety equipment and industrial signaling equipment of $12.2 million and $6.3 million, respectively, partially offset by a $2.9 million reduction in orders for warning systems. Non-U.S. orders increased by $18.8 million, or 23%, due to improvements in orders for public safety equipment and industrial signaling equipment of $15.8 million and $3.0 million, respectively, as well as a $2.7 million favorable foreign currency translation impact, partially offset by a $2.7 million reduction in orders for warning systems.

Net sales decreased by $5.8 million, or 3%, for the year ended December 31, 2021. U.S. sales decreased by $3.7 million, or 3%, driven by reductions in sales of warning systems and public safety equipment of $4.2 million and $1.3 million, respectively, partially offset by a $1.8 million increase in sales of industrial signaling equipment. Non-U.S. sales decreased by $2.1 million, or 2%, largely due to a $6.4 million reduction in sales of public safety equipment, partially offset by an increase in sales of warning systems of $1.7 million, as well as a $2.2 million favorable foreign currency translation impact.

Cost of sales decreased by $2.8 million, or 2%, for the year ended December 31, 2021, primarily related to lower sales volumes, partially offset by a $1.6 million unfavorable foreign currency translation impact and higher material and freight costs. Gross profit margin for the year ended December 31, 2021 was 36.9%, compared to 37.3% in the prior year, with the decrease primarily attributable to the impact of higher material and freight costs.

SEG&A expenses increased by $0.1 million for the year ended December 31, 2021. As a percentage of net sales, SEG&A expenses were 21.2% in the current year, compared with 20.6% in the prior year.

Operating income decreased by $2.8 million, or 8%, for the year ended December 31, 2021, primarily due to a $3.0 million reduction in gross profit, partially offset by the non-recurrence of $0.3 million of restructuring charges that were recognized in the prior year.

Backlog was $52.5 million at December 31, 2021, compared to $21.4 million at December 31, 2020.

Corporate Expense

Corporate operating expenses were $22.5 million, $28.4 million and $30.9 million for the years ended December 31, 2021, 2020 and 2019, respectively.

For the year ended December 31, 2021, corporate operating expenses decreased by $5.9 million, primarily due to a $4.1 million decrease in acquisition and integration-related expenses, of which $3.5 million related to a reduction in the estimated fair value of contingent consideration, as well as lower incentive-based compensation costs.

The Company's hearing loss litigation has historically been managed by the Company's legal staff resident at the corporate office and not by management at either segment. In accordance with Accounting Standards Codification ("ASC") 280, *Segment Reporting*, which provides that segment reporting should follow the management of the item and that certain expenses may be corporate expenses, these legal expenses (which are not part of the normal operating activities of any of our reportable segments) are reported and managed as corporate expenses.

Financial Condition, Liquidity and Capital Resources

The Company uses its cash flow from operations to fund growth and to make capital investments that sustain its operations, reduce costs, or both. Beyond these uses, remaining cash is used to pay down debt, repurchase shares, fund dividend payments and make pension contributions. The Company may also choose to invest in the acquisition of businesses. In the absence of significant unanticipated cash demands, we believe that the Company's existing cash balances, cash flow from operations and borrowings available under the 2019 Credit Agreement will provide funds sufficient for these purposes. The net cash flows associated with the Company's rental equipment transactions are included in cash flow from operating activities.

The Company's cash and cash equivalents totaled $40.5 million, $81.7 million and $31.6 million as of December 31, 2021, 2020 and 2019, respectively. As of December 31, 2021, $18.2 million of cash and cash equivalents was held by foreign subsidiaries. Cash and cash equivalents held by subsidiaries outside the U.S. typically are held in the currency of the country in which it is located. The Company uses this cash to fund the operating activities of its foreign subsidiaries and for further investment in foreign operations. Generally, the Company has considered such cash to be indefinitely reinvested in its foreign operations and the Company's current plans do not demonstrate a need to repatriate such cash to fund U.S. operations. However, in the event that these funds were needed to fund U.S. operations or to satisfy U.S. obligations, they generally could be repatriated. The repatriation of these funds may cause the Company to incur additional U.S. income tax expense, dependent on income tax laws and other circumstances at the time any such amounts were repatriated.

Net cash provided by operating activities totaled $101.8 million, $136.2 million and $103.1 million in 2021, 2020 and 2019, respectively. The reduction in cash generated by operating activities in 2021 compared to the prior year was primarily due to a $13.2 million increase in income tax payments associated with tax planning initiatives, as well as differences in the timing of certain payments, with the prior year benefiting from the deferral of $7.3 million of payroll tax payments under the Coronavirus Aid, Relief, and Economic Security Act, of which, $3.7 million was remitted in the current year. The year-over-year change also reflects increases in working capital, primarily due to the strategic stocking of critical inventory components, such as chassis, to support demand levels and partially mitigate current supply chain constraints.

Net cash used for investing activities totaled $168.7 million, $34.4 million and $84.4 million in 2021, 2020 and 2019, respectively. In each of the years presented, cash was used to fund the purchase of properties and equipment, with $37.4 million, $29.7 million and $35.4 million of capital expenditures in 2021, 2020 and 2019, respectively. Capital expenditures in 2021 included the acquisition of the Company's Elgin, Illinois manufacturing facility for $19.8 million, whereas capital expenditures in 2020 and 2019 included the expansion of a number of the Company's other production facilities. In addition, as discussed further in Note 2 – Acquisitions to the accompanying consolidated financial statements, the Company completed three acquisitions during 2021 for aggregate initial consideration of $131.8 million, excluding cash acquired. In 2020, the Company paid $6.2 million to acquire certain assets and operations of Public Works Equipment and Supply, Inc. ("PWE") and received $0.8 million as part of the finalization of certain post-closing adjustments in connection with the acquisition of MRL, which it acquired in 2019 for an initial $49.6 million, net of cash acquired.

Net cash of $26.4 million was provided by financing activities in 2021, compared to a net cash usage of $53.4 million and $24.6 million in 2020 and 2019, respectively. In 2021, the Company borrowed $70.5 million under its revolving credit facility, primarily to fund current-year acquisitions, and received $4.2 million from stock option exercises. The Company also funded cash dividends and share repurchases of $22.0 million and $15.4 million, respectively, and redeemed $10.7 million of stock in order to remit funds to tax authorities to satisfy employees' tax withholdings following the vesting of stock-based compensation and the exercise of stock options. In 2020, the Company paid down $11.8 million of net borrowings, funded cash dividends and share repurchases of $19.4 million and $13.7 million, respectively, and redeemed $9.1 million of stock in order to remit funds to tax authorities to satisfy employees' minimum tax withholdings. In 2019, the Company increased net borrowings by $7.4 million, primarily to fund the acquisition of MRL. In addition, the Company funded payments of $10.3 million relating to acquisitions completed in 2016, paid cash dividends of $19.3 million, incurred $1.0 million of debt refinancing costs, repurchased $1.0 million of treasury stock, and redeemed $2.1 million of stock to satisfy employees' tax withholdings.

On July 30, 2019, the Company entered into the 2019 Credit Agreement, by and among the Company (the "U.S. Borrower") and certain of its foreign subsidiaries (collectively, the "Borrowers"), Wells Fargo Bank, National Association, as administrative agent, swingline lender and issuing lender, JPMorgan Chase Bank, N.A. as syndication agent, and the other lenders and parties signatory thereto.

The 2019 Credit Agreement is a $500 million revolving credit facility, maturing on July 30, 2024, that provides for borrowings in the form of loans or letters of credit up to the aggregate availability under the facility, with a sub-limit of $75 million for letters of credit. The 2019 Credit Agreement allows for the Borrowers to borrow in denominations of U.S. Dollars, Canadian Dollars, Euros or British Pounds (with borrowings in non-U.S. currencies subject to a sublimit of $200 million). In addition, the Company may cause the commitments to increase by up to an additional $250 million, subject to the approval of the applicable lenders providing such additional financing. Borrowings under the 2019 Credit Agreement may be used for working capital and general corporate purposes, including acquisitions.

The Company's material domestic subsidiaries provide guarantees for all obligations of the Borrowers under the 2019 Credit Agreement, which is secured by a first priority security interest in (i) all existing or hereafter acquired domestic property and assets of the U.S. Borrower and material domestic subsidiaries, (ii) the stock or other equity interests in each of the material domestic subsidiaries and (iii) 65% of outstanding voting capital stock of certain first-tier foreign subsidiaries, subject to certain exclusions.

Borrowings under the 2019 Credit Agreement bear interest, at the Company's option, at a base rate or a Eurocurrency or SONIA daily rate (as each is defined in the 2019 Credit Agreement), plus, in each case, an applicable margin. The applicable margin ranges from zero to 0.75% for base rate borrowings and 1.00% to 1.75% for Eurocurrency or SONIA daily rate borrowings. The Company must also pay a commitment fee to the lenders ranging between 0.10% to 0.25% per annum on the unused portion of the $500 million revolving credit facility along with other standard fees. Letter of credit fees are payable on outstanding letters of credit in an amount equal to the applicable Eurocurrency or SONIA daily rate margin plus other customary fees.

The Company is subject to certain net leverage ratio and interest coverage ratio financial covenants under the 2019 Credit Agreement that are to be measured at each fiscal quarter-end. The Company was in compliance with all such covenants as of December 31, 2021. The 2019 Credit Agreement also includes a series of "covenant holiday" periods, which allow for the temporary increase of the minimum net leverage ratio following the completion of a permitted acquisition, or a series of acquisitions, when the aggregate consideration over a period of twelve months exceeds $75 million. In addition, the 2019 Credit Agreement includes customary negative covenants, subject to certain exceptions, restricting or limiting the Company's and its subsidiaries' ability to, among other things: (i) make non-ordinary course dispositions of assets; (ii) make certain fundamental business changes, such as mergers, consolidations or any similar combination; (iii) make restricted payments, including dividends and stock repurchases; (iv) incur indebtedness; (v) make certain loans and investments; (vi) create liens; (vii) transact with affiliates; (viii) enter into sale/leaseback transactions; (ix) make negative pledges; and (x) modify subordinated debt documents.

Under the 2019 Credit Agreement, restricted payments, including dividends and stock repurchases, shall be permitted if (i) the Company's leverage ratio is less than or equal to 3.25; (ii) the Company is in compliance with all other financial covenants; and (iii) there are no existing defaults under the 2019 Credit Agreement. If its leverage ratio is more than 3.25, the Company is still permitted to fund (i) up to $35 million of dividend payments and stock repurchases in any fiscal year; and (ii) an incremental $50 million of other cash payments in the aggregate during the term of the 2019 Credit Agreement.

The 2019 Credit Agreement contains customary events of default. If an event of default occurs and is continuing, the Borrowers may be required immediately to repay all amounts outstanding under the 2019 Credit Agreement and the commitments from the lenders may be terminated.

As of December 31, 2021, there was $280.7 million of cash drawn and $10.1 million of undrawn letters of credit under the 2019 Credit Agreement, with $209.2 million of net availability for borrowings.

The following table summarizes the gross borrowings and gross payments under the Company's revolving credit facilities:

	For the Years Ended December 31,		
(in millions)	**2021**	**2020**	**2019**
Gross borrowings	$ 214.0	$ 82.6	$ 84.0
Gross payments	143.5	94.4	76.6

Aggregate maturities of total borrowings due amount to approximately $0.6 million in 2022, $0.5 million in 2023, $281.2 million in 2024, and $0.5 million in 2025. The weighted average interest rate on long-term borrowings was 1.5% at December 31, 2021.

The Company paid interest of $3.9 million in 2021, $5.4 million in 2020 and $7.8 million in 2019.

The Company paid income taxes of $35.5 million in 2021, $22.3 million in 2020 and $25.7 million in 2019.

Cash dividends of $22.0 million, $19.4 million and $19.3 million were declared and paid to stockholders in 2021, 2020 and 2019, respectively.

On February 16, 2022, the Company completed the acquisition of its University Park, Illinois manufacturing facility for approximately $28 million. Excluding this acquisition, the Company anticipates that capital expenditures for 2022 will be in the range of $25 million to $30 million. The Company believes that its financial resources and major sources of liquidity, including cash flow from operations and borrowing capacity, will be adequate to meet its operating needs, capital needs and financial commitments.

Contractual Obligations and Off-Balance Sheet Arrangements

The following table summarizes the Company's contractual obligations and payments due by period as of December 31, 2021:

	Payments Due by Period				
(in millions)	**Total**	**Less than 1 Year**	**2-3 Years**	**4-5 Years**	**More than 5 Years**
Long-term debt	$ 280.7	$ —	$ 280.7	$ —	$ —
Interest payments on long-term debt [(a)]	12.3	4.1	8.2	—	—
Operating lease obligations [(b)]	32.9	9.7	12.1	5.8	5.3
Finance lease obligations	2.1	0.6	1.0	0.5	—
Purchase obligations [(c)]	230.7	219.6	10.8	0.3	—
Pension contributions [(d)]	1.0	1.0	—	—	—
Contingent earn-out payments [(e)]	2.7	0.7	2.0	—	—
Total contractual obligations [(f)]	$ 562.4	$ 235.7	$ 314.8	$ 6.6	$ 5.3

(a) Amounts represent estimated contractual interest payments on outstanding long-term debt.

(b) Amounts include contractual obligations associated with lease arrangements with an initial term of twelve months or less, which are not recorded on the Consolidated Balance Sheets. For further discussion, see Note 4 – Leases to the accompanying consolidated financial statements.

(c) Purchase obligations primarily relate to commercial chassis and other contracts in the ordinary course of business.

(d) The Company expects to contribute up to $1.0 million to the non-U.S. benefit plan in 2022, which represents the minimum required contribution. The Company does not currently expect to make any contributions to the U.S. benefit plan in 2022. Future contributions to the plans will be based on such factors as (i) annual service cost, (ii) the financial return on plan assets, (iii) interest rate movements that affect discount rates applied to plan liabilities and (iv) the value of benefit payments made. Due to the high degree of uncertainty regarding the potential future cash outflows associated with these plans, the Company is unable to provide a reasonably reliable estimate of the amounts and periods in which any additional liabilities might be paid.

(e) Represents the fair value of the contingent earn-out payments associated with the acquisitions of MRL and Deist. For further discussion, see Note 2 – Acquisitions to the accompanying consolidated financial statements.

(f) As of December 31, 2021, the Company had a liability of approximately $1.2 million for unrecognized tax benefits. For further discussion, see Note 10 – Income Taxes to the accompanying consolidated financial statements. Due to the uncertainties related to these tax matters, the Company generally cannot make a reasonably reliable estimate of the period of cash settlement for this liability. As such, the potential future cash outflows are not included in the table above. We do not expect any significant change to our unrecognized tax benefits as a result of potential expiration of statute of limitations and settlements with tax authorities.

The following table summarizes the Company's off-balance sheet arrangements and the notional amount by expiration period as of December 31, 2021:

	Notional Amount by Expiration Period			
(in millions)	**Total**	**Less than 1 Year**	**2-3 Years**	**4-5 Years**
Financial standby letters of credit [(a)]	$ 9.8	$ 9.8	$ —	$ —
Performance standby letters of credit [(a)]	0.3	0.3	—	—
Performance and bid bonds [(b)]	18.5	18.1	0.4	—
Repurchase obligations [(c)]	2.7	0.6	1.3	0.8
Total off-balance sheet arrangements	$ 31.3	$ 28.8	$ 1.7	$ 0.8

(a) Financial standby letters of credit largely relate to casualty insurance policies for the Company's workers' compensation, automobile, general liability and product liability policies. Performance standby letters of credit primarily represent guarantees of performance of certain subsidiaries that engage in transactions with foreign customers.

(b) Performance and bid bonds primarily relate to guarantees of performance of certain subsidiaries that engage in transactions with domestic and foreign customers.

(c) Relates to certain transactions that the Company has entered into involving the sale of equipment to certain of its customers which included (i) guarantees to repurchase the equipment for a fixed price at a future date and (ii) guarantees to repurchase the equipment from the third-party lender in the event of default by the customer. For further discussion, see Note 12 – Commitments and Contingencies to the accompanying consolidated financial statements.

Critical Accounting Policies and Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect (i) the reported amounts of assets and liabilities, (ii) disclosure of contingent assets and liabilities at the date of the consolidated financial statements and (iii) the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. The Company considers the following policies to be the most critical in understanding the judgments that are involved in the preparation of the Company's consolidated financial statements and the uncertainties that could impact the Company's financial condition, results of operations or cash flow.

Goodwill

Goodwill represents the excess of the cost of an acquired business over the amounts assigned to its net assets. Goodwill is not amortized but is tested for impairment at a reporting unit level on an annual basis or more frequently if indicators of impairment exist. The Company performed its annual goodwill impairment test as of October 31, 2021.

In testing the goodwill of its reporting units for potential impairment, the Company applies either a qualitative or quantitative test, in accordance with ASC 350, *Intangibles – Goodwill and Other*.

A qualitative approach may be applied when the Company concludes that it is not "more likely than not" that the fair value of a reporting unit is less than its carrying value. In conducting a qualitative assessment, the Company analyzes a variety of events or factors that may influence the fair value of the reporting unit, including, but not limited to: the results of prior quantitative assessments performed; changes in the carrying amount; actual and projected financial performance; relevant market data for both the Company and its guideline comparable companies; industry outlook; and macroeconomic conditions. Significant judgment is used to evaluate the totality of these events and factors to make the determination of whether it is more likely than not that the fair value of the reporting unit is less than its carrying value. In this situation, the Company would not be required to perform the quantitative impairment test described below.

A quantitative approach is performed by comparing the fair value of a reporting unit with its carrying amount. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not impaired and no impairment charge is required. If the carrying amount of a reporting unit exceeds its fair value, this difference is recorded as an impairment charge not to exceed the carrying amount of goodwill. The Company generally determines the fair value of its reporting units using both the income and market approaches.

Under the income approach, the key assumptions include projected sales, cost of sales, operating expenses and earnings before interest, income taxes, depreciation and amortization ("EBITDA"). These assumptions are determined by management utilizing our internal operating plan, including growth rates for revenues and operating expenses and margin assumptions. An additional key assumption under this approach is the discount rate, which is determined by reviewing current risk-free rates of capital and current market interest rates and by evaluating the risk premium relevant to the reporting unit. If the Company's assumptions relative to growth rates were to change, the fair value calculation may change, which could result in impairment.

Under the market approach, the Company estimates fair value using marketplace fair value data from within a comparable industry grouping of publicly traded companies and from pricing multiples implied from sales of companies similar to the Company's reporting units. The Company's selection of comparable guideline companies is a key assumption underlying the market approach. Similar to the income approach discussed above, sales, cost of sales, operating expenses, EBITDA and their respective growth rates are also key assumptions utilized. The market prices of the Company's common stock and other guideline companies are additional key inputs. If these market prices increase, the estimated market value would increase. Conversely, if market prices decrease, the estimated market value would decrease.

The results of these two methods are weighted based upon management's evaluation of the relevance of the two approaches.

Although the Company believes its estimates of fair value are reasonable, actual financial results could differ from estimated financial results due to the inherent uncertainty involved in making such estimates. Changes in assumptions concerning future financial results or other underlying assumptions could have a significant impact on either the fair value of the reporting units, the amount of any goodwill impairment charge, or both. The Company also compares the sum of the estimated fair values of its reporting units to the overall fair value of the Company implied by its market capitalization. This comparison provides an indication that, in total, assumptions and estimates are reasonable. Future declines in the overall market value of the Company may also result in a conclusion that the fair value of one or more reporting units has declined below its carrying value.

In 2021, the Company performed a combination of qualitative and quantitative impairment tests to assess the goodwill of its reporting units for potential impairment. For one reporting unit, a quantitative impairment test was performed, using a combination of the income and market approaches to determine the fair value of the reporting unit. The valuation was prepared by a third-party valuation specialist. One measure of the sensitivity of assumptions used in the impairment analysis is the amount by which each reporting unit "passed" (fair value exceeds the carrying value). The fair value of the reporting unit exceeded its carrying value by more than 20%, and, therefore, no impairment was recognized. For its other reporting units, the Company applied the qualitative approach to assess the goodwill of its reporting units for potential impairment and concluded that it was not "more likely than not" that the fair value of the Company's reporting units were less than their carrying values. Accordingly, further quantitative testing was not required to be performed.

The Company had no goodwill impairments in 2021, 2020 or 2019. For all reporting units, a 10% decrease in the estimated fair value would have had no effect on the carrying value of goodwill at the annual measurement date in 2021. However, adverse changes to the Company's business environment and future cash flow could cause us to record impairment charges in future periods, which could be material. See Note 8 – Goodwill and Other Intangible Assets to the accompanying consolidated financial statements for a summary of the Company's goodwill by segment.

Indefinite-lived Intangible Assets

An intangible asset determined to have an indefinite useful life is not amortized. Indefinite-lived intangible assets are tested for impairment on an annual basis at year-end, or more frequently if an event occurs or circumstances change that indicate the fair value of an indefinite-lived intangible asset could be below its carrying amount. The Company's indefinite-lived intangible assets include trade names associated with acquisitions.

In testing the indefinite-lived intangibles assets for potential impairment, the Company applies either a qualitative test, or a quantitative test, in accordance with ASC 350, *Intangibles — Goodwill and Other*. A qualitative approach may be applied when the Company concludes that it is not "more likely than not" that the fair value of the indefinite-lived intangible assets are less than their carrying value. A quantitative impairment test consists of comparing the fair value of the indefinite-lived intangible asset with its carrying amount. An impairment loss would be recognized for the carrying amount in excess of its fair value.

Significant judgment is applied when evaluating whether an intangible asset has an indefinite useful life and in testing for impairment. The Company primarily uses the relief from royalty model to estimate the fair value of the indefinite-lived intangible assets. The relief from royalty model requires management to make a number of business and valuation assumptions including future revenue growth and royalty rates.

In 2021, the Company performed a combination of qualitative and quantitative impairment tests over its indefinite-lived intangible assets. The fair value of the indefinite-lived intangible asset that was quantitatively tested for impairment exceeded its carrying value by approximately 50%, and, therefore, no impairment was recognized. This valuation was prepared by a third-party valuation specialist. Further, the Company concluded that it was not "more likely than not" that the fair value of indefinite-lived intangible assets that were qualitatively tested for impairment were less than the carrying amounts. Accordingly, further quantitative testing was not required to be performed.

The Company had no indefinite-lived intangible asset impairments in 2021, 2020 or 2019. Although the Company believes its estimates of fair value are reasonable, actual financial results could differ from estimated financial results due to the inherent uncertainty involved in making such estimates. The use of alternative estimates and assumptions could increase or decrease the estimated fair value of the assets and potentially result in different impacts to the Company's results of operations. Actual results may differ from the Company's estimates.

See Note 8 – Goodwill and Other Intangible Assets to the accompanying consolidated financial statements for a summary of the Company's indefinite-lived intangible assets.

Revenue Recognition

Revenue is recognized when performance obligations under the terms of a contract with the customer are satisfied; generally this occurs at a point in time, with the transfer of control of the Company's products or services to customers. For most of the Company's product sales, these criteria are met at the time the product is shipped; however, occasionally control passes later or earlier than shipment due to customer contract or letter of credit terms. In circumstances where credit is extended, payment terms generally range from 30 to 120 days and customer deposits may be required.

Revenue is measured as the amount of consideration the Company expects to be entitled to in exchange for transferring products or providing services. Expected returns and allowances are estimated and recognized based primarily on an analysis of historical experience, with Net sales presented net of such returns and allowances.

The Company enters into sales arrangements that may provide for multiple performance obligations to a customer. These arrangements may include software and non-software components that function together to deliver the products' essential functionality. The Company identifies all performance obligations that are to be delivered separately under the sales arrangement and allocates revenue to each performance obligation based on its relative standalone selling price. The Company uses an observable price to determine the standalone selling price or a cost plus margin approach when one is not available. In general, performance obligations include hardware, integration and installation services. The allocated revenue for each performance obligation is recognized as such performance obligations are satisfied.

Net sales include sales of products and billed freight related to product sales. Freight has not historically comprised a material component of Net sales. The Company has elected to account for such shipping and handling activities as a fulfillment cost and not as a separate performance obligation. Taxes collected from customers and remitted to governmental authorities are recorded on a net basis and are excluded from Net sales.

Item 7A. *Quantitative and Qualitative Disclosures about Market Risk.*

The Company is subject to market risk associated with changes in interest rates and foreign exchange rates. To mitigate this risk, the Company may utilize derivative financial instruments, including interest rate swaps and foreign currency forward contracts. The Company does not hold or issue derivative financial instruments for trading or speculative purposes and is not party to leveraged derivatives contracts.

Interest Rate Risk

The Company has certain debt instruments which subject it to market risk associated with movements in interest rates. The fair value of the Company's total debt obligations held at December 31, 2021 was $282.8 million. From time to time, the Company may enter into interest rate swaps as a means of fixing the floating interest rate component on its variable-rate debt. At December 31, 2021, the Company had one interest rate swap outstanding. That swap had a notional amount of $75.0 million, and fixed the floating interest rate component on $75.0 million of the Company's variable-rate debt. See Note 9 – Debt to the accompanying consolidated financial statements for a description of the Company's debt agreements and interest rate swaps that were in place during 2021. A hypothetical 1% increase or decrease in variable interest rates on the Company's total debt obligations as of December 31, 2021 would increase or decrease annual interest expense by approximately $2.1 million.

Foreign Exchange Rate Risk

Although the majority of the Company's sales, expenses and cash flow are transacted in U.S. dollars, the Company has exposure to changes in foreign exchange rates, primarily the Canadian Dollar, Euro and British pound. The impact of currency movements on the Company's financial results is largely mitigated by natural hedges in its operations. The Canadian operations of JJE primarily conduct business in Canadian dollars. Almost all other sales of product from the U.S. to other parts of the world are denominated in U.S. dollars. Sales from and within other currency zones are predominantly transacted in the currency of the country sourcing the product or service. Approximately 76% of the Company's net sales are conducted within the U.S. and are transacted in U.S. dollars. The Company estimates that a 10% appreciation of the U.S. dollar against other currencies would reduce full-year net sales by approximately 2% and operating income by approximately 2%.

The Company may also have foreign currency exposures related to buying and selling in currencies other than the local currency in which it operates and to certain balance sheet positions. If such transactional or balance sheet exposures are material, the Company may enter into matching foreign currency forward contracts from time to time to protect against variability in exchange rates.

Item 8. ***Financial Statements and Supplementary Data.***

FEDERAL SIGNAL CORPORATION

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Federal Signal Corporation

Oak Brook, Illinois

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Federal Signal Corporation and subsidiaries (the "Company") as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2021, and the related notes and the schedule listed in the Index at Part IV, Item 15 (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, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

We have also 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, 2021, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 1, 2022, expressed an unqualified opinion on the Company's internal control over financial reporting.

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 Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates 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 matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Goodwill - Refer to Notes 1 and 8 to the financial statements

Critical Audit Matter Description

In testing the goodwill of its reporting units for potential impairment, the Company applies either a qualitative or quantitative test, in accordance with ASC 350, *Intangibles – Goodwill and Other*. A qualitative approach may be applied when the Company concludes that it is not "more likely than not" that the fair value of a reporting unit is less than its carrying value. A quantitative approach is performed by comparing the fair value of a reporting unit with its carrying amount ("quantitative assessment").

For reporting units tested for impairment using the quantitative assessment, the Company determines the fair value of each reporting unit using both the income approach and the market approach. The income approach requires management to make a number of business and valuation assumptions for each reporting unit including annual assumptions of projected sales, cost of sales, operating expenses, earnings before interest, income taxes, depreciation, and amortization ("EBITDA"), and discount rates. The market approach requires management to estimate fair value using marketplace fair value data derived from a comparable industry grouping of publicly traded companies and from pricing multiples implied from sales of companies similar to the Company's reporting units ("market multiples"). The Company's goodwill balance was $432.2 million as of December 31, 2021. No impairment was recognized in 2021.

We identified the valuation of goodwill for one of the Company's reporting units as a critical audit matter due to the reporting unit's historical performance as compared to projections and because the determination of reporting unit fair value was based on significant assumptions that are sensitive to changes and are affected by expected future market and economic conditions. Auditing management's judgments used in the quantitative assessment regarding significant assumptions related to projected sales, cost of sales, operating expenses, and EBITDA ("forecasts") as well as the selection of market multiples applied to management's projected sales and EBITDA estimates for this reporting unit required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the Company's forecasts and the selection of market multiples for this reporting unit included the following, among others:

- We tested the design and operating effectiveness of controls over the annual goodwill impairment assessment, including those over the forecasts and the market multiples.
- We evaluated management's ability to accurately forecast projected sales, cost of sales, operating expenses, and EBITDA by comparing actual results to management's historical forecasts.
- We evaluated the reasonableness of management's forecasts by comparing the forecasts to:
    - Internal communications to management and the Board of Directors.
    - Comparing the forecasts to historical results, third-party economic research, industry performance, and peer company performance.
    - Actual results from the October 31, 2021, annual measurement date to December 31, 2021.
- We performed sensitivity analyses to evaluate the risk of impairment if key assumptions are changed.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the (1) valuation methodology and (2) market multiples by performing certain procedures, that included:
    - Evaluating whether the fair value models being used are appropriate considering the Company's circumstances and valuation premise identified.
    - Evaluating the market multiples by considering (1) the selected comparable industry grouping of publicly traded companies, (2) the selected sales of companies similar to the Company's reporting units, and (3) the adjustments made for differences in growth prospects and risk profiles between the reporting unit and the comparable industry grouping of publicly traded companies.
    - Testing the underlying source information and mathematical accuracy of the calculations.

/s/ Deloitte & Touche LLP
Chicago, Illinois
March 1, 2022

We have served as the Company's auditor since 2013.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Federal Signal Corporation

Oak Brook, Illinois

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Federal Signal Corporation and subsidiaries (the "Company") as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* 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, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2021, of the Company and our report dated March 1, 2022, expressed an unqualified opinion on those financial statements.

As described in Management's Annual Report on Internal Control over Financial Reporting, management excluded from its assessment, the internal control over financial reporting at OSW Equipment & Repair, LLC ("OSW"), Ground Force Manufacturing LLC ("Ground Force"), and Deist Industries, Inc. ("Deist"), which were acquired on February 17, 2021, October 4, 2021, and December 30, 2021, respectively, and whose financial statements constitute approximately 4% of total assets and 4% of net sales of the consolidated financial statement amounts (excluding lease-related assets, goodwill and intangible assets, which were integrated into the Company's control environment) as of and for the year ended December 31, 2021. Accordingly, our audit did not include the internal control over financial reporting at OSW, Ground Force, and Deist.

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 Annual 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 the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP
Chicago, Illinois
March 1, 2022

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

(in millions, except per share data)	For the Years Ended December 31, 2021	2020	2019
Net sales	$ 1,213.2	$ 1,130.8	$ 1,221.3
Cost of sales	924.5	837.2	898.5
Gross profit	288.7	293.6	322.8
Selling, engineering, general and administrative expenses	149.2	149.2	164.4
Amortization expense	10.9	9.6	8.8
Acquisition and integration-related (benefits) expenses	(2.1)	2.1	2.5
Restructuring	—	1.3	—
Operating income	130.7	131.4	147.1
Interest expense	4.5	5.7	7.9
Pension settlement charges	10.3	—	—
Other (income) expense, net	(1.7)	1.1	0.6
Income before income taxes	117.6	124.6	138.6
Income tax expense	17.0	28.5	30.2
Income from continuing operations	100.6	96.1	108.4
Gain from discontinued operations and disposal, net of tax	—	0.1	0.1
Net income	$ 100.6	$ 96.2	$ 108.5
Basic earnings per share:			
Earnings from continuing operations	$ 1.65	$ 1.59	$ 1.80
Earnings from discontinued operations and disposal, net of tax	—	0.00	0.00
Net earnings per share	$ 1.65	$ 1.59	$ 1.80
Diluted earnings per share:			
Earnings from continuing operations	$ 1.63	$ 1.56	$ 1.76
Earnings from discontinued operations and disposal, net of tax	—	0.00	0.00
Net earnings per share	$ 1.63	$ 1.56	$ 1.76
Weighted average shares outstanding:			
Basic	60.8	60.3	60.2
Diluted	61.9	61.7	61.6

See notes to consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	For the Years Ended December 31,		
(in millions)	**2021**	**2020**	**2019**
Net income	$ 100.6	$ 96.2	$ 108.5
Other comprehensive income (loss):			
Change in foreign currency translation adjustment	(4.7)	8.4	1.8
Change in unrecognized net actuarial loss and prior service cost related to pension benefit plans, net of income tax expense (benefit) of $6.1, $(2.2) and $1.9, respectively	20.5	(8.0)	7.1
Change in unrealized gain or loss on interest rate swaps, net of income tax expense (benefit) of $0.6, $(1.0) and $(0.3), respectively	1.7	(3.0)	(0.7)
Total other comprehensive income (loss)	17.5	(2.6)	8.2
Comprehensive income	$ 118.1	$ 93.6	$ 116.7

See notes to consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(in millions, except per share data)	As of December 31, 2021	2020
ASSETS		
Current assets:		
Cash and cash equivalents	$ 40.5	$ 81.7
Accounts receivable, net of allowances for doubtful accounts of $2.1 and $2.9, respectively	136.0	127.0
Inventories	229.1	185.0
Prepaid expenses and other current assets	25.4	11.8
Total current assets	431.0	405.5
Properties and equipment, net	141.9	106.9
Rental equipment, net	108.4	113.3
Operating lease right-of-use assets	29.8	21.9
Goodwill	432.2	394.2
Intangible assets, net	205.7	153.5
Deferred tax assets	8.4	9.5
Deferred charges and other long-term assets	8.7	3.8
Long-term assets of discontinued operations	—	0.2
Total assets	$ 1,366.1	$ 1,208.8
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term borrowings and finance lease obligations	$ 0.6	$ 0.2
Accounts payable	64.8	51.6
Customer deposits	21.9	13.3
Accrued liabilities:		
Compensation and withholding taxes	29.9	30.3
Current operating lease liabilities	8.8	8.2
Other current liabilities	44.4	44.7
Current liabilities of discontinued operations	—	0.1
Total current liabilities	170.4	148.4
Long-term borrowings and finance lease obligations	282.2	209.8
Long-term operating lease liabilities	22.1	15.5
Long-term pension and other post-retirement benefit liabilities	40.4	54.0
Deferred tax liabilities	53.2	53.7
Other long-term liabilities	13.8	24.5
Long-term liabilities of discontinued operations	—	0.8
Total liabilities	582.1	506.7
Stockholders' equity:		
Common stock, $1 par value per share, 90.0 shares authorized, 68.9 and 67.8 shares issued, respectively	68.9	67.8
Capital in excess of par value	256.7	240.8
Retained earnings	683.6	605.0
Treasury stock, at cost, 8.0 and 7.3 shares, respectively	(151.0)	(119.8)
Accumulated other comprehensive loss	(74.2)	(91.7)
Total stockholders' equity	784.0	702.1
Total liabilities and stockholders' equity	$ 1,366.1	$ 1,208.8

See notes to consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

	For the Years Ended December 31,		
(in millions)	**2021**	**2020**	**2019**
Operating activities:			
Net income	$ 100.6	$ 96.2	$ 108.5
Adjustments to reconcile net income to net cash provided by operating activities:			
Net gain on discontinued operations and disposal	—	(0.1)	(0.1)
Depreciation and amortization	50.4	44.8	41.5
Deferred financing costs	0.3	0.3	0.3
Stock-based compensation expense	7.6	8.4	8.8
Pension settlement charges	10.3	—	—
Pension-related expense, net of funding	(3.8)	(6.6)	(0.1)
Changes in fair value of contingent consideration	(3.5)	(0.1)	1.0
Payments for acquisition-related activity	—	—	(3.1)
Deferred income taxes, including change in valuation allowance	(6.5)	5.8	3.3
Changes in operating assets and liabilities:			
Accounts receivable	2.5	8.6	(4.7)
Inventories	(24.2)	2.5	(10.4)
Prepaid expenses and other current assets	(2.6)	(0.6)	(2.2)
Rental equipment	(15.9)	(16.9)	(35.5)
Accounts payable	6.4	(13.9)	(6.6)
Customer deposits	3.9	1.7	(5.1)
Accrued liabilities	(5.5)	(1.2)	2.8
Income taxes	(11.6)	1.3	1.3
Other	(6.6)	6.1	3.7
Net cash provided by continuing operating activities	101.8	136.3	103.4
Net cash used for discontinued operating activities	—	(0.1)	(0.3)
Net cash provided by operating activities	101.8	136.2	103.1
Investing activities:			
Purchases of properties and equipment	(37.4)	(29.7)	(35.4)
Payments for acquisition-related activity	(131.8)	(5.4)	(49.6)
Other, net	0.5	0.7	0.6
Net cash used for investing activities	(168.7)	(34.4)	(84.4)
Financing activities:			
Increase (decrease) in revolving lines of credit, net	70.5	(11.8)	7.4
Payments of debt financing fees	—	—	(1.0)
Purchases of treasury stock	(15.4)	(13.7)	(1.0)
Redemptions of common stock to satisfy withholding taxes related to stock-based compensation	(10.7)	(9.1)	(2.1)
Payments for acquisition-related activity	—	—	(10.3)
Cash dividends paid to stockholders	(22.0)	(19.4)	(19.3)
Proceeds from stock compensation activity	4.2	0.6	1.7
Other, net	(0.2)	—	—
Net cash provided by (used for) financing activities	26.4	(53.4)	(24.6)
Effects of foreign exchange rate changes on cash and cash equivalents	(0.7)	1.7	0.1
(Decrease) increase in cash and cash equivalents	(41.2)	50.1	(5.8)
Cash and cash equivalents at beginning of year	81.7	31.6	37.4
Cash and cash equivalents at end of year	$ 40.5	$ 81.7	$ 31.6

See notes to consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(in millions, except per share data)	Common Stock Par Value	Capital in Excess of Par Value	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total
Balance at January 1, 2019	$ 66.4	$ 217.0	$ 432.5	$ (88.5)	$ (97.3)	$ 530.1
Net income			108.5			108.5
Total other comprehensive income					8.2	8.2
Cash dividends declared ($0.32 per share)			(19.3)			(19.3)
Impact of adoption of ASU 2016-02			6.5			6.5
Stock-based payments:						
Stock-based compensation		8.1				8.1
Stock option exercises and other	0.4	3.6		(2.6)		1.4
Performance share unit transactions	0.1	(0.1)		(0.9)		(0.9)
Stock repurchase program				(1.0)		(1.0)
Balance at December 31, 2019	66.9	228.6	528.2	(93.0)	(89.1)	641.6
Net income			96.2			96.2
Total other comprehensive loss					(2.6)	(2.6)
Cash dividends declared ($0.32 per share)			(19.4)			(19.4)
Stock-based payments:						
Stock-based compensation		7.8				7.8
Stock option exercises and other	0.7	4.6		(10.2)		(4.9)
Performance share unit transactions	0.2	(0.2)		(2.9)		(2.9)
Stock repurchase program				(13.7)		(13.7)
Balance at December 31, 2020	67.8	240.8	605.0	(119.8)	(91.7)	702.1
Net income			100.6			100.6
Total other comprehensive income					17.5	17.5
Cash dividends declared ($0.36 per share)			(22.0)			(22.0)
Stock-based payments:						
Stock-based compensation		7.0				7.0
Stock option exercises and other	0.9	9.1		(12.0)		(2.0)
Performance share unit transactions	0.2	(0.2)		(3.8)		(3.8)
Stock repurchase program				(15.4)		(15.4)
Balance at December 31, 2021	$ 68.9	$ 256.7	$ 683.6	$ (151.0)	$ (74.2)	$ 784.0

See notes to consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1 — SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization and Description of the Business

Federal Signal Corporation was founded in 1901 and was reincorporated as a Delaware corporation in 1969. References herein to the "Company," "we," "our" or "us" refer collectively to Federal Signal Corporation and its subsidiaries.

Products manufactured and services rendered by the Company are divided into two reportable segments: Environmental Solutions Group and Safety and Security Systems Group. The individual operating businesses are organized as such because they share certain characteristics, including technology, marketing, distribution and product application, which create long-term synergies.

The Company's fiscal year ends on December 31. All references to 2021, 2020 and 2019 relate to the fiscal year unless otherwise indicated.

Basis of Presentation and Consolidation

The accompanying consolidated financial statements represent the consolidation of Federal Signal Corporation and its subsidiaries and have been prepared by the Company pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC") and in accordance with United States ("U.S.") generally accepted accounting principles ("GAAP").

Intercompany balances and transactions have been eliminated in consolidation. During the current year, the Company is separately presenting Amortization expense on the Consolidated Statements of Operations. Accordingly, prior-year amounts have been reclassified from Selling, engineering, general and administrative ("SEG&A") expenses to conform to current-year presentation.

New Accounting Standards Adopted in 2021

In December 2019, the Financial Accounting Standards Board (the "FASB") issued Accounting Standards Update ("ASU") No. 2019-12, *Income Taxes (Topic 740), Simplifying the Accounting for Income Taxes*, which is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. The amendments in this ASU are effective for fiscal years beginning after December 15, 2020 and interim periods within those fiscal years, with early adoption permitted. The amendments should be applied on a retrospective, modified retrospective or prospective basis, depending on the area covered by the update. The Company adopted this guidance on a prospective basis effective January 1, 2021. The adoption of this ASU did not have a material impact on the Company's consolidated financial statements.

Non-U.S. Operations

Assets and liabilities of non-U.S. subsidiaries, other than those whose functional currency is the U.S. dollar, are translated at current exchange rates with the related translation adjustments reported in stockholders' equity as a component of Accumulated other comprehensive loss. Accounts within the Consolidated Statements of Operations are translated at the average exchange rate during the period. Non-monetary assets and liabilities are translated at historical exchange rates.

The Company incurs foreign currency transaction gains or losses, related to transactions that are denominated in a currency other than the functional currency, which are recognized in the Consolidated Statements of Operations as a component of Other (income) expense, net. For the years ended December 31, 2021, 2020 and 2019, the Company realized foreign currency transaction gains of $0.3 million, $0.4 million and $0.1 million, respectively.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect (i) the reported amounts of assets and liabilities, (ii) the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and (iii) the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents

The Company considers all highly liquid investments with a maturity of three months or less, when purchased, to be cash equivalents. The carrying amount of cash and cash equivalents approximates fair value because of the short-term maturity and highly liquid nature of these instruments.

Accounts Receivable

The Company carries accounts receivable at the face amount less an allowance for doubtful accounts for estimated losses as a result of a customer's inability to make required payments. Management evaluates the aging of the accounts receivable balances, the financial condition of its customers, historical trends and the time outstanding of specific balances to estimate the amount of accounts receivables that may not be collected in the future and records the appropriate provision.

Inventories

The Company's inventories are valued at the lower of cost and net realizable value. Cost is determined using the first-in, first-out method. Included in the cost of inventories are raw materials, direct wages and associated production costs.

Properties and Equipment

Properties and equipment are stated at cost, net of accumulated depreciation. Depreciation is recorded using the straight-line method over the estimated useful lives of the assets. Useful lives generally range from eight to 40 years for buildings and three to 15 years for machinery and equipment. Leasehold improvements are depreciated over the shorter of the remaining life of the lease or the useful life of the improvement. Depreciation expense is primarily included as a component of Cost of sales on the Consolidated Statements of Operations, with depreciation expense associated with certain assets used for administrative purposes being presented within SEG&A expenses. Depreciation expense, which includes depreciation on rental equipment, was $39.5 million, $35.2 million and $32.7 million in the years ended December 31, 2021, 2020 and 2019, respectively.

Properties and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable.

Rental Equipment

The Company enters into lease agreements with customers related to the rental of certain equipment. All of these leasing agreements are classified as operating leases and are for periods generally not to exceed five years. In accounting for these leases, the cost of the equipment purchased or manufactured by the Company is recorded as an asset and is depreciated over its estimated useful life. Rental income is recognized ratably over the term of the underlying leases.

Rental equipment is depreciated to an estimated residual value on a straight-line basis over the estimated useful lives of the assets and is reviewed for potential impairment whenever an event occurs or circumstances change that indicate the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset or asset group to be tested for possible impairment, the Company first compares non-discounted cash flows expected to be generated by that asset group to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on a non-discounted cash flow basis, an impairment is recognized to the extent that the carrying amount exceeds fair value. Fair value is determined through various valuation techniques including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary.

Rental equipment includes certain equipment that is manufactured by the Company and subsequently transferred to the rental fleet, as well as equipment purchased from third-party manufacturers, for the purpose of renting to end-customers. The related cash flow activity associated with these transactions is reflected within operating activities on the Consolidated Statements of Cash Flows.

Goodwill

Goodwill represents the excess of the cost of an acquired business over the amounts assigned to its net assets. Goodwill is not amortized but is tested for impairment at a reporting unit level on an annual basis or more frequently if indicators of impairment exist. The Company performed its annual goodwill impairment test as of October 31, 2021.

In testing the goodwill of its reporting units for potential impairment, the Company applies either a qualitative or quantitative test, in accordance with Accounting Standards Codification ("ASC") 350, *Intangibles – Goodwill and Other*.

A qualitative approach may be applied when the Company concludes that it is not "more likely than not" that the fair value of a reporting unit is less than its carrying value. In this situation, the Company would not be required to perform the quantitative impairment test described below.

A quantitative approach is performed by comparing the fair value of a reporting unit with its carrying amount. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not impaired and no impairment charge is required. If the carrying amount of a reporting unit exceeds its fair value, this difference is recorded as an impairment charge not to exceed the carrying amount of goodwill. The Company generally determines the fair value of its reporting units using both the income and market approaches.

Under the income approach, the key assumptions include projected sales, cost of sales, operating expenses and the discount rate. Under the market approach, the Company estimates fair value using marketplace fair value data from within a comparable industry grouping. The results of these two methods are weighted based upon management's evaluation of the relevance of the two approaches.

In 2021 and 2020, the Company performed a combination of qualitative and quantitative impairment tests to assess the goodwill of its reporting units for potential impairment. For one reporting unit, a quantitative impairment test was performed, using a combination of the income and market approaches to determine the fair value of the reporting unit. The fair value of the reporting unit exceeded its carrying values by more than 20%, and therefore, no impairment was recognized. For its other reporting units, the Company applied the qualitative approach to assess the goodwill of its reporting units for potential impairment and concluded that it was not "more likely than not" that the fair value of the Company's reporting units were less than their carrying values. Accordingly, further quantitative testing was not required to be performed.

In 2019, the Company applied the quantitative approach to assess the goodwill of its reporting units for potential impairment, using a combination of the income and market approaches to determine the fair value of its reporting units. The fair values of the Company's reporting units exceeded their carrying values by more than 20% and, therefore, no impairment was recognized.

The Company had no goodwill impairments in 2021, 2020 or 2019. See Note 8 – Goodwill and Other Intangible Assets for a summary of the Company's goodwill by segment.

Intangible Assets

Definite-lived intangible assets are amortized on a straight-line basis over the estimated useful lives and are tested for impairment if indicators exist in a manner similar to that described above for *Rental Equipment*.

Indefinite-lived intangible assets are tested for impairment on an annual basis at October 31, or more frequently if an event occurs or circumstances change that indicate the fair value of an indefinite-lived intangible asset could be below its carrying amount. In testing the indefinite-lived intangibles assets for potential impairment, the Company applies either a qualitative test, or a quantitative test, in accordance with ASC 350. A qualitative approach may be applied when the Company concludes that it is not "more likely than not" that the fair value of the indefinite-lived intangible assets are less than their carrying value. A quantitative impairment test consists of comparing the fair value of the indefinite-lived intangible asset with its carrying amount. An impairment loss would be recognized for the carrying amount in excess of its fair value.

In 2021, 2020 and 2019, the Company performed a combination of qualitative and quantitative impairment tests over its indefinite-lived intangible assets. The fair value of the indefinite-lived intangible assets that were quantitatively tested for impairment significantly exceeded their carrying value, and therefore, no impairment was recognized. Further, the Company concluded that it was not "more likely than not" that the fair value of indefinite-lived intangible assets that were qualitatively tested for impairment were less than the carrying amounts. Accordingly, further quantitative testing was not required to be performed.

The Company had no indefinite-lived intangible asset impairments in 2021, 2020 or 2019. See Note 8 – Goodwill and Other Intangible Assets for a summary of the Company's intangible assets.

Warranties

Warranties are classified as either assurance-type or service-type warranties. A warranty is considered an assurance-type warranty if it provides the customer with assurance that the product will function as intended. A warranty that goes above and beyond ensuring basic functionality is considered a service-type warranty. The Company offers certain limited warranties that are assurance-type warranties and extended service arrangements that are service-type warranties. Assurance-type warranties are not accounted for as separate performance obligations under the revenue model. If a service-type warranty is sold with a product or separately, revenue is recognized over the life of the warranty.

Sales of many of the Company's products include assurance-type warranties based on terms that are generally accepted in the Company's marketplaces. The Company records provisions for estimated warranty costs, which are included within Cost of sales, at the time of sale based on historical experience. The Company periodically adjusts these provisions to reflect actual experience. Infrequently, a material warranty issue can arise which is beyond the scope of the Company's historical experience. The Company records costs related to these issues as they become probable and estimable.

The Company also sells optional service-type warranty contracts that extend coverage beyond the initial term of the express warranty period. At the time of sale, revenue related to the service-type warranty contract is deferred and typically recognized as revenue on a straight-line basis over the life of the contract. As of December 31, 2021 and 2020, deferred revenue associated with service-type warranty contracts was $4.0 million and $4.2 million, respectively, and was included within Other current liabilities and Other long-term liabilities on the Consolidated Balance Sheets. Costs under service-type warranty contracts are expensed as incurred.

Workers' Compensation and Product Liability Reserves

Due to the nature of the Company's manufacturing and products, the Company is subject to claims for workers' compensation and product liability in the normal course of business. The Company is self-funded for a portion of these claims. The Company establishes a reserve using a third-party actuary for any known outstanding matters, including a reserve for claims incurred but not yet reported. The amount and timing of cash payments relating to these claims are considered to be reliably determinable given the nature of the claims and historical claim volumes to support the actuarial assumptions and judgments used to derive the expected loss payment patterns. As such, the reserves recorded are discounted using a risk-free rate that matches the average duration of the claims.

The Company has not established a reserve for potential losses resulting from the firefighter hearing loss litigation, with the exception of certain estimated losses that have been recognized related to settlement discussions (see Note 13 – Legal Proceedings). If the Company is not successful in its defense after exhausting all appellate options, it would record a charge for such claims, to the extent they exceed insurance recoveries, when the related losses become probable and estimable.

Pensions

The Company sponsors domestic and foreign defined benefit pension plans. Key assumptions used in the accounting for these employee benefit plans include the discount rate, expected long-term rate of return on plan assets and estimates of future mortality of plan participants.

The weighted-average discount rate used to measure pension liabilities and costs is selected using a hypothetical portfolio of high-quality bonds that would provide the necessary cash flow to match the projected benefit payments of the plans. The discount rate represents the rate at which our benefit obligations could effectively be settled as of the year-end measurement date. The weighted-average discount rate used to measure pension liabilities increased from 2020 to 2021. See Note 11 – Pension and Other Post-Employment Plans for further discussion.

The expected long-term rate of return on plan assets is based on historical and expected returns for the asset classes in which the plans are invested. The Company references published mortality tables and scales in determining its estimate of future mortality.

Revenue Recognition

See Note 3 – Revenue Recognition for discussion regarding the Company's revenue recognition accounting policies.

Product Shipping Costs

Product shipping costs are expensed as incurred and are included within Cost of sales.

Research and Development

The Company invests in research to support development of new products and the enhancement of existing products and services. Expenditures for research and development by the Company were $11.4 million in 2021, $12.2 million in 2020 and $13.6 million in 2019, and are included within SEG&A expenses.

Stock-Based Compensation Plans

The Company has various stock-based compensation plans, described more fully in Note 15 – Stock-Based Compensation. Stock-based compensation expense is recorded net of estimated forfeitures in the Company's Consolidated Statements of Operations. The Company estimates the forfeiture rate based on historical forfeitures of equity awards and adjusts the rate to reflect changes in facts and circumstances, if any. The Company revises its estimated forfeiture rate if actual forfeitures differ from its initial estimates.

Income Taxes

The Company accounts for income taxes under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and tax benefit carryforwards. Deferred tax assets and liabilities at the end of each period are determined using enacted tax rates expected to apply to taxable income in the period in which the deferred tax liability or asset is expected to be settled or realized. A valuation allowance is established or maintained when, based on currently available information and other factors, it is more likely than not that all or a portion of a deferred tax asset will not be realized.

The Company files a consolidated U.S. federal income tax return for Federal Signal Corporation and its eligible domestic subsidiaries. The Company's non-U.S. subsidiaries file income tax returns in their respective local jurisdictions. The Company accounts for taxes on Global Intangible Low-Taxed Income ("GILTI") as a period expense in the year in which it is incurred.

Accounting standards on accounting for uncertainty in income taxes address the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the consolidated financial statements. Under the guidance on accounting for uncertainty in income taxes, the Company may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. The Company presents interest and penalties related to income tax matters as a component of Income tax expense.

Litigation Contingencies

The Company is subject to various claims, including pending and possible legal actions for product liability and other damages, and other matters arising in the ordinary course of the Company's business. The Company believes, based on current knowledge and after consultation with counsel, that the outcome of such claims and actions in the aggregate will not have an adverse effect on the Company's financial position or results of operations. However, in the event of unexpected future developments, it is possible that the ultimate resolution of such matters, if unfavorable, could have a material adverse effect on the Company's results of operations. Professional legal fees are expensed when incurred. The Company accrues for contingent losses when such losses are probable and reasonably estimable. In the event that estimates or assumptions of contingent losses are different from actual results, adjustments are made in subsequent periods to reflect more current information.

NOTE 2 – ACQUISITIONS

The Company's acquisitions are accounted for in accordance with ASC 805, *Business Combinations*. In accordance with this guidance, the fair value of consideration transferred is allocated to assets acquired and liabilities assumed based on their estimated fair values as of the completion of the acquisition, with the remaining amount recognized as goodwill. A single estimate of fair value results from a complex series of judgments about future events and uncertainties and relies heavily on estimates and assumptions. The Company's judgments used to determine the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives, can materially impact the Company's results of operations.

Under ASC 805-10, acquisition-related costs (e.g., advisory, legal, valuation and other professional fees) are not included as a component of consideration transferred, but are accounted for as expenses in the periods in which the costs are incurred. Acquisition-related costs are included as a component of Acquisition and integration-related (benefits) expenses on the Consolidated Statements of Operations.

Acquisitions Completed in 2021

During the year ended December 31, 2021, the Company completed three acquisitions. The assets and liabilities of each of the acquisitions have been consolidated into the Company's Consolidated Balance Sheet as of December 31, 2021, and the results of operations of each of the acquisitions have been included in the Consolidated Statement of Operations, within the Environmental Solutions Group, from their respective acquisition dates through December 31, 2021. Collectively, these acquisitions generated net sales and operating income of $44.3 million and $0.6 million, respectively, during the year ended December 31, 2021. All of the acquisitions were accounted for as business combinations in accordance with ASC 805.

Acquisition of Deist

On December 30, 2021, the Company completed the acquisition of substantially all of the assets and operations of each of Deist Industries, Inc.; Bucks Fabricating, LLC; Roll-Off Parts, LLC and Switch-N-Go, LLC (collectively, “Deist”). Deist designs, manufactures and sells interchangeable truck body systems for class 3-7 vehicles in the work truck industry and a full line of waste hauling products, including front/rear loading containers and specialty roll-off containers. The Company expects that the Deist acquisition will strengthen its specialty vehicle market position by expanding its geographic footprint and enhancing its portfolio of dump truck body and trailer product offerings.

The initial cash consideration paid by the Company to acquire Deist was approximately $36.5 million, inclusive of certain preliminary closing adjustments and a payment of $4.1 million to acquire Deist’s manufacturing facilities. In addition, there is a contingent earn-out payment of up to $7.5 million, based upon the achievement of certain financial targets over a specified performance period. Any additional closing adjustments are expected to be finalized before the end of the second quarter of 2022.

As of December 31, 2021, the Company’s purchase price allocation reflects various provisional estimates that were based on the information that was available as of the acquisition date and the filing date of this Form 10-K. The Company believes that information provides a reasonable basis for estimating the fair values of assets acquired and liabilities assumed; however, the determination of those fair values is not yet finalized. Thus, the preliminary measurements of fair value set forth in the table below are subject to change during the measurement period as valuations are finalized. The Company expects to finalize the valuation and complete the purchase price allocation as soon as practicable, but not more than one year from the acquisition date.

The following table summarizes the preliminary fair value of assets acquired and liabilities assumed as of the acquisition date:

(in millions)		
Purchase price, inclusive of preliminary adjustment for working capital and other post-closing items [(a)]	$	36.5
Estimated fair value of additional consideration [(b)]		2.0
Total consideration		38.5
Accounts receivable		5.1
Inventories		8.9
Prepaid expenses and other current assets		0.2
Properties and equipment		8.5
Customer relationships [(c)]		10.0
Trade names [(d)]		6.1
Other intangible assets		0.3
Accounts payable		(1.8)
Accrued liabilities		(3.3)
Customer deposits		(0.6)
Net assets acquired		33.4
Goodwill [(e)]	$	5.1

Purchase price, inclusive of preliminary adjustment for working capital and other post-closing items [(a)]

(a) The initial purchase price, which is subject to certain post-closing adjustments, including working capital, was funded through existing cash and borrowings under the Company's revolving credit facility.

(b) Represents the estimated fair value of the contingent earn-out payment as of the acquisition date, which is included as a component of Other long-term liabilities on the Consolidated Balance Sheets. See Note 18 – Fair Value Measurements for discussion of the methodology used to determine the fair value of the contingent earn-out payment.

(c) Represents the preliminary fair value assigned to customer relationships, which are considered to be definite-lived intangible assets, with a preliminary estimated useful life of approximately 12 years.

(d) Represents the preliminary fair value assigned to trade names, which are considered to be indefinite-lived intangible assets.

(e) Goodwill, which is tax-deductible, has been allocated to the Environmental Solutions Group on the basis that the synergies identified will primarily benefit this segment.

Acquisition of Ground Force

On October 4, 2021, the Company completed the acquisition of substantially all of the assets and operations of Ground Force Manufacturing LLC ("Ground Force"). Ground Force is a leading manufacturer of specialty material handling vehicles that support the extraction of metals. The Company expects that the Ground Force acquisition will further bolster its position as an industry leading diversified industrial manufacturer of specialized vehicles for maintenance and infrastructure markets with leading brands of premium, value-adding products, and a strong supporting aftermarket platform.

The initial cash consideration paid by the Company to acquire Ground Force was approximately $43.1 million, inclusive of certain preliminary closing adjustments. Any additional closing adjustments are expected to be finalized during the first quarter of 2022.

As of December 31, 2021, the Company's purchase price allocation reflects various provisional estimates that were based on the information that was available as of the acquisition date and the filing date of this Form 10-K. The Company believes that information provides a reasonable basis for estimating the fair values of assets acquired and liabilities assumed; however, the determination of those fair values is not yet finalized. Thus, the preliminary measurements of fair value set forth in the table below are subject to change during the measurement period as valuations are finalized. The Company expects to finalize the valuation and complete the purchase price allocation as soon as practicable, but not more than one year from the acquisition date.

The following table summarizes the preliminary fair value of assets acquired and liabilities assumed as of the acquisition date:

(in millions)	
Purchase price, inclusive of preliminary adjustment for working capital and other post-closing items [(a)]	$ 43.1
Total consideration	43.1
Accounts receivable	3.4
Inventories	3.9
Prepaid expenses and other current assets	0.3
Properties and equipment	1.3
Operating lease right-of-use assets	3.0
Customer relationships [(b)]	16.3
Trade names [(c)]	10.0
Other intangible assets	0.4
Operating lease liabilities	(3.0)
Accounts payable	(1.8)
Accrued liabilities	(0.7)
Customer deposits	(3.3)
Net assets acquired	29.8
Goodwill [(d)]	$ 13.3

(a) The initial purchase price, which is subject to certain post-closing adjustments, including working capital, was funded through existing cash and borrowings under the Company's revolving credit facility.

(b) Represents the preliminary fair value assigned to customer relationships, which are considered to be definite-lived intangible assets, with a preliminary estimated useful life of approximately 12 years.

(c) Represents the preliminary fair value assigned to trade names, which are considered to be indefinite-lived intangible assets.

(d) Goodwill, which is tax-deductible, has been allocated to the Environmental Solutions Group on the basis that the synergies identified will primarily benefit this segment.

In connection with the acquisition of Ground Force, the Company entered into a lease agreement for a facility owned by an entity affiliated with the sellers of Ground Force. The agreement includes an initial term of five years, with options to renew, and an annual rent that is considered market-based. During the year ended December 31, 2021, total rent paid under this agreement was approximately $0.2 million, and the total lease liability as of December 31, 2021 was $2.9 million.

Acquisition of OSW

On February 17, 2021, the Company completed the acquisition of all of the outstanding equity of OSW Equipment & Repair, LLC, a leading manufacturer of dump truck bodies and custom upfitter of truck equipment and trailers. The acquisition also includes OSW's wholly-owned subsidiaries, Northend Truck Equipment, LLC and Western Truck Body Mfg. ULC (collectively "OSW"). The Company expects that the OSW acquisition will strengthen its specialty vehicle market position by expanding its geographic footprint and enhancing its portfolio of dump truck body and trailer product offerings.

The initial cash consideration paid by the Company to acquire OSW was approximately $53.2 million, inclusive of an adjustment for working capital and a preliminary adjustment for other post-closing items. The remaining post-closing adjustments are expected to be finalized during 2022.

As of December 31, 2021, the Company's purchase price allocation reflects various provisional estimates that were based on the information that was available as of the acquisition date and the filing date of this Form 10-K. The Company believes that information provides a reasonable basis for estimating the fair values of assets acquired and liabilities assumed; however, the determination of those fair values is not yet finalized. Thus, the preliminary measurements of fair value set forth in the table below are subject to change during the measurement period as valuations are finalized. The Company expects to finalize the valuation and complete the purchase price allocation during the first quarter of 2022.

The following table summarizes the preliminary fair value of assets acquired and liabilities assumed as of the acquisition date:

(in millions)	
Purchase price, inclusive of adjustment for working capital and preliminary adjustment for other post-closing items [(a)]	$ 53.2
Total consideration	53.2
Cash	1.3
Accounts receivable	3.5
Inventories	8.3
Prepaid expenses and other current assets	0.7
Properties and equipment	5.8
Operating lease right-of-use assets	12.3
Customer relationships [(b)]	11.3
Trade names [(c)]	8.4
Other intangible assets	0.2
Operating lease liabilities	(12.3)
Accounts payable	(3.8)
Accrued liabilities	(1.9)
Customer deposits	(0.8)
Finance lease obligations	(1.7)
Net assets acquired	31.3
Goodwill [(d)]	$ 21.9

(a) The purchase price was funded through existing cash and borrowings under the Company's revolving credit facility. The purchase price includes a working capital adjustment of $0.2 million, which was received in January 2022, and remains subject to change based on the finalization of certain other post-closing adjustments, which are expected to be resolved during 2022.

(b) Represents the fair value assigned to customer relationships, which are considered to be definite-lived intangible assets, with a preliminary estimated useful life of approximately 12 years.

(c) Represents the fair value assigned to trade names, which are considered to be indefinite-lived intangible assets.

(d) Goodwill, the majority of which is tax-deductible, has been allocated to the Environmental Solutions Group on the basis that the synergies identified will primarily benefit this segment.

In connection with the acquisition of OSW, the Company entered into a lease agreement for a facility owned by an entity affiliated with the sellers of OSW. The agreement includes an initial term of 10 years, with options to renew, and an annual rent that is considered market-based. During the year ended December 31, 2021, total rent paid under this agreement to such entity, which is owned by individuals, certain of whom are now employees of the Company, was approximately $0.8 million, and the total lease liability as of December 31, 2021 was $9.3 million.

Unaudited Pro Forma Financial Information

The following table presents the unaudited pro forma combined net sales of the Company, OSW, Ground Force and Deist for the years ended December 31, 2021 and 2020, assuming the transactions occurred on January 1, 2020. Pro forma combined income from continuing operations and pro forma diluted earnings per share are not presented, as they would not be materially different from the results reported for the years ended December 31, 2021 and 2020.

	For the Years Ended December 31,	
(in millions)	2021	2020
Net sales	$ 1,287.7	$ 1,229.1

The unaudited pro forma financial information is presented for informational purposes only and is not intended to represent or be indicative of the consolidated results of operations of the Company that would have been reported had the acquisitions been completed as of the beginning of the periods presented, and should not be taken as being representative of the future consolidated results of operations of the Company.

Acquisitions Completed in 2020 and 2019

Acquisition of Public Works Equipment and Supply, Inc.

On June 12, 2020, the Company acquired certain assets and operations of Public Works Equipment and Supply, Inc. (“PWE”), a distributor of maintenance and infrastructure equipment covering North Carolina, South Carolina and parts of Tennessee. The acquisition included cash consideration of $6.2 million, which included a payment to acquire certain inventory and fixed assets at closing. As the acquisition closed on June 12, 2020, the assets and liabilities of PWE have been consolidated into the Company’s Consolidated Balance Sheet as of December 31, 2021, and the post-acquisition results of operations have been included in the Consolidated Statements of Operations, within the Environmental Solutions Group.

The assets acquired and liabilities assumed in the PWE acquisition have been measured at their fair values at the acquisition date, resulting in $2.5 million of goodwill, which is deductible for tax purposes. The Company’s purchase price allocation was finalized during the year ended December 31, 2020.

The acquisition was not, and would not have been, material to the Company’s net sales, results of operations or total assets during any period presented. Accordingly, the Company’s consolidated results from operations do not differ materially from historical performance as a result of the acquisition, and therefore, pro-forma results are not presented.

Acquisition of Mark Rite Lines Equipment Company, Inc.

On July 1, 2019, the Company completed the acquisition of substantially all of the assets and operations of Mark Rite Lines Equipment Company, Inc. (“MRL”), a U.S. manufacturer of truck-mounted and ride-on road-marking and line-removal equipment, including its wholly-owned subsidiary HighMark Traffic Services, Inc. The Company expects that MRL will provide an efficient entry into a new line of product offerings and access to new markets. As the acquisition closed on July 1, 2019, the assets and liabilities of MRL have been consolidated into the Consolidated Balance Sheet as of December 31, 2021, while the post-acquisition results of operations have been included in the Consolidated Statements of Operations, within the Environmental Solutions Group.

The initial cash consideration paid by the Company to acquire MRL was $49.8 million, inclusive of a preliminary adjustment for working capital and other post-closing items. The purchase price was subsequently reduced by a final adjustment for working capital and other post-closing items in the amount of $0.8 million, which the Company received in the first quarter of 2020. In addition, there is a contingent earn-out payment of up to $15.5 million, which is contingent upon the achievement of certain financial targets and objectives. The contingent earn-out payment, if earned, would be due to be paid following the third anniversary of the closing.

The Company's purchase price allocation was finalized during the year ended December 31, 2019. The following table summarizes the fair value of assets acquired and liabilities assumed as of the acquisition date:

(in millions)	
Purchase price, inclusive of adjustment for working capital and other post-closing items [(a)]	$ 49.0
Estimated fair value of additional consideration [(b)]	4.1
Total consideration	53.1
Cash	0.2
Accounts receivable	3.8
Inventories	13.8
Prepaid expenses and other current assets	0.3
Properties and equipment	6.4
Operating lease right-of-use assets	4.6
Other long-term assets	0.1
Customer relationships [(c)]	17.7
Trade names [(d)]	9.0
Other intangible assets	1.4
Operating lease liabilities	(4.6)
Accounts payable	(3.7)
Accrued liabilities	(1.9)
Customer deposits	(6.5)
Deferred tax liabilities	(1.4)
Net assets acquired	39.2
Goodwill [(e)]	$ 13.9

(a) The purchase price was funded with borrowings under the Company's revolving credit facility. The purchase price includes adjustments for working capital and other post-closing items, which were finalized in the fourth quarter of 2019, with the Company receiving $0.8 million in the first quarter of 2020.

(b) Represents the estimated fair value of the contingent earn-out payment as of the acquisition date. Changes in the estimated fair value of the contingent earn-out payment subsequent to the completion of the Company's purchase price allocation have been included as a component of Acquisition and integration-related (benefits) expenses on the Consolidated Statements of Operations. See Note 18 – Fair Value Measurements for discussion of the methodology used to determine the fair value of the contingent earn-out payment.

(c) Represents the fair value assigned to customer relationships, which are considered to be definite-lived intangible assets, with an estimated useful life of approximately 12 years.

(d) Represents the fair value assigned to trade names, which are considered to be indefinite-lived intangible assets.

(e) Goodwill, the majority of which is tax-deductible, has been allocated to the Environmental Solutions Group on the basis that the synergies identified will primarily benefit this segment.

Unaudited Pro Forma Financial Information

The following table presents the unaudited pro forma combined net sales of the Company and MRL for the years ended December 31, 2019 and 2018, assuming the transaction occurred on January 1, 2018. Pro forma combined income from continuing operations and pro forma diluted earnings per share are not presented, as they would not be materially different from the results reported for the years ended December 31, 2019 and 2018.

	For the Years Ended December 31,	
(in millions)	**2019**	**2018**
Net sales	$ 1,252.7	$ 1,156.4

The unaudited pro forma financial information is presented for informational purposes only and is not intended to represent or be indicative of the consolidated results of operations of the Company that would have been reported had the acquisition been completed as of the beginning of the periods presented, and should not be taken as being representative of the future consolidated results of operations of the Company.

NOTE 3 – REVENUE RECOGNITION

Revenue is recognized when performance obligations under the terms of a contract with the customer are satisfied; generally this occurs at a point in time, with the transfer of control of the Company's products or services to customers. For most of the Company's product sales, these criteria are met at the time the product is shipped; however, occasionally control passes later or earlier than shipment due to customer contract or letter of credit terms. In circumstances where credit is extended, payment terms generally range from 30 to 120 days and customer deposits may be required.

Revenue is measured as the amount of consideration the Company expects to be entitled to in exchange for transferring products or providing services. Expected returns and allowances are estimated and recognized based primarily on an analysis of historical experience, with Net sales presented net of such returns and allowances.

The Company enters into sales arrangements that may provide for multiple performance obligations to a customer. These arrangements may include software and non-software components that function together to deliver the products' essential functionality. The Company identifies all performance obligations that are to be delivered separately under the sales arrangement and allocates revenue to each performance obligation based on its relative standalone selling price. The Company uses an observable price to determine the standalone selling price or a cost plus margin approach when one is not available. In general, performance obligations include hardware, integration and installation services. The allocated revenue for each performance obligation is recognized as such performance obligations are satisfied.

Net sales include sales of products and billed freight related to product sales. Freight has not historically comprised a material component of Net sales. The Company has elected to account for such shipping and handling activities as a fulfillment cost and not as a separate performance obligation. Taxes collected from customers and remitted to governmental authorities are recorded on a net basis and are excluded from Net sales.

During the years ended December 31, 2021, 2020 and 2019, the Company's Environmental Solutions recorded net sales of $4.2 million, $1.3 million and $3.3 million respectively, relating to products sold to Ingenieria Y Servicios Orbitec SPA, an entity which is majority-owned by affiliates of the former owners of Joe Johnson Equipment, Inc. and Joe Johnson Equipment (USA), Inc. (collectively, "JJE").

Information relating to the disaggregation of Net sales by geographic region, based on the location of the end-customer, is included in Note 17 – Segment Information. The following table presents the Company's Net sales disaggregated by major product line:

(in millions)	For the Years Ended December 31, 2021	2020	2019
Environmental Solutions			
Vehicles and equipment [(a)]	$ 764.3	$ 719.3	$ 788.7
Parts	150.3	129.4	132.8
Rental income [(b)]	44.7	36.6	46.2
Other [(c)]	44.7	30.5	25.2
Total net sales	1,004.0	915.8	992.9
Safety and Security Systems			
Public safety and security equipment	126.1	132.6	133.5
Industrial signaling equipment	53.9	50.8	59.3
Warning systems	29.2	31.6	35.6
Total net sales	209.2	215.0	228.4
Total net sales	$ 1,213.2	$ 1,130.8	$ 1,221.3

(a) Includes net sales from the sale of new and used vehicles and equipment, including sales of rental equipment.

(b) Represents revenues from vehicle and equipment lease arrangements with customers, recognized in accordance with Topic 842.

(c) Primarily includes revenues from services such as maintenance and repair work and the sale of extended warranty contracts.

Contract Balances

The Company recognizes contract liabilities when cash payments, such as customer deposits, are received in advance of the Company's satisfaction of the related performance obligations. Contract liabilities are recognized as Net sales when the related performance obligations are satisfied, which generally occurs within three to six months of the cash receipt. Contract liability balances are not materially impacted by any other factors. The Company's contract liabilities were $25.3 million and $17.0 million, as of December 31, 2021 and 2020, respectively. Contract assets, such as unbilled receivables, were not material as of any of the periods presented herein.

Practical Expedients

As the Company's standard payment terms are less than a year, the Company has elected the practical expedient under ASC 606-10-32-18 to not assess whether a contract has a significant financing component.

The Company has also elected the practical expedient under ASC 340-40-25-4 and recognizes the incremental costs of obtaining a contract, such as sales commissions, as expense when incurred as the amortization period of the asset that otherwise would have been recognized is one year or less.

Further, as permitted by ASC 606-10-50-14, the Company does not disclose the value of its remaining performance obligations for contracts with an original expected duration of one year or less.

NOTE 4 – LEASES

The Company leases certain facilities within the U.S., Europe and Canada from which the Company manufactures vehicles and equipment, and provides sales, service and/or equipment rentals. Some of the Company's lease agreements contain options to renew. The Company also leases vehicles and various other equipment. The Company's lease agreements may contain lease and non-lease components, which are accounted for separately. Leases with an initial term of twelve months or less are not recorded on the Consolidated Balance Sheets.

In connection with acquisitions completed in recent years, the Company has entered into certain lease agreements for facilities owned by affiliates of the sellers. All lease agreements contain an annual rent that is considered to be market-based. Total rent paid under these arrangements was $2.5 million, $1.5 million and $0.8 million during the years ended December 31, 2021, 2020 and 2019, respectively. The Company's total lease liabilities under these agreements were $17.3 million and $4.7 million as of December 31, 2021 and 2020, respectively.

The Company determines if an arrangement is a lease at inception. Operating lease right-of-use assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease right-of-use assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. As most of the Company's leases do not provide an implicit rate, the Company uses its incremental collateralized borrowing rate based on the information available at the commencement date in determining the present value of lease payments. Implicit rates are used when readily determinable. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense for operating lease payments is recognized on a straight-line basis over the respective lease term.

The following table summarizes the Company's total lease costs and supplemental cash flow information arising from operating lease transactions:

(in millions)	For the Years Ended December 31, 2021	2020	2019
Total operating lease costs [(a)]	$ 14.9	$ 13.3	$ 12.6
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	10.7	9.2	8.6

(a) Includes short-term leases and variable lease costs.

The following table summarizes the components of lease right-of-use assets and liabilities:

(in millions)	2021	2020	Affected Line Item in Consolidated Balance Sheets
Assets			
Operating lease right-of-use assets	$ 29.8	$ 21.9	Operating lease right-of-use assets
Finance lease right-of-use assets	2.0	0.6	Properties and equipment, net
Total lease right-of-use assets	$ 31.8	$ 22.5	
Liabilities			
Current:			
Operating leases	$ 8.8	$ 8.2	Current operating lease liabilities
Finance leases	0.6	0.2	Current portion of long-term borrowings and finance lease obligations
Noncurrent:			
Operating leases	22.1	15.5	Long-term operating lease liabilities
Finance leases	1.5	0.4	Long-term borrowings and finance lease obligations
Total lease liabilities	$ 33.0	$ 24.3	

The weighted-average remaining lease terms and discount rates of the Company's operating leases were as follows:

	2021	2020
Weighted-average remaining lease term of operating leases	5.1 years	3.3 years
Weighted-average discount rate of operating leases	2.5 %	3.5 %

Maturities of operating lease liabilities as of December 31, 2021 were as follows:

(in millions)	
2022	$ 9.5
2023	7.3
2024	4.8
2025	3.2
2026	2.6
Thereafter	5.3
Total lease payments	32.7
Less: Imputed interest	1.8
Present value of operating lease liabilities	$ 30.9

NOTE 5 — INVENTORIES

The following table summarizes the components of inventories:

(in millions)	2021	2020
Finished goods	$ 87.9	$ 95.3
Raw materials	116.4	76.6
Work in process	24.8	13.1
Total inventories [(a)]	$ 229.1	$ 185.0

(a) Amounts at December 31, 2021 include inventories acquired in the acquisitions of OSW, Ground Force and Deist - see Note 2 - Acquisitions.

NOTE 6 — PROPERTIES AND EQUIPMENT, NET

The following table summarizes the components of properties and equipment, net:

(in millions)	2021	2020
Land	$ 8.5	$ 4.8
Buildings and improvements	82.8	63.3
Machinery and equipment	202.2	175.0
Total property and equipment, at cost	293.5	243.1
Less: Accumulated depreciation	151.6	136.2
Properties and equipment, net [(a)]	$ 141.9	$ 106.9

(a) Amounts at December 31, 2021 include properties and equipment acquired in the acquisitions of OSW, Ground Force and Deist - see Note 2 - Acquisitions.

On December 22, 2021, the Company completed the acquisition of its Elgin, Illinois manufacturing facility for $19.8 million. The Company had previously leased the facility under a lease that was due to expire at the end of June 2023.

NOTE 7 — RENTAL EQUIPMENT, NET

The following table summarizes the components of rental equipment, net:

(in millions)	2021	2020
Rental equipment	$ 152.2	$ 156.8
Less: Accumulated depreciation	43.8	43.5
Rental equipment, net	$ 108.4	$ 113.3

Rental income associated with the Company’s equipment rental activity, which is included as a component of Net sales on the Consolidated Statements of Operations, totaled $44.7 million in 2021, $36.6 million in 2020 and $46.2 million in 2019.

NOTE 8 — GOODWILL AND OTHER INTANGIBLE ASSETS

The following table summarizes the carrying amount of goodwill and changes in the carrying amount of goodwill, by segment:

(in millions)	Environmental Solutions	Safety & Security Systems	Total
Balance at December 31, 2019	$ 277.3	$ 111.5	$ 388.8
Acquisitions	2.5	—	2.5
Translation adjustments	0.1	2.8	2.9
Balance at December 31, 2020	279.9	114.3	394.2
Acquisitions	40.3	—	40.3
Translation adjustments	—	(2.3)	(2.3)
Balance at December 31, 2021	$ 320.2	$ 112.0	$ 432.2

The following table summarizes the gross carrying amount and accumulated amortization of intangible assets for each major class of intangible assets:

	2021			2020		
(in millions)	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
Definite-lived intangible assets:						
Customer relationships [a]	$ 146.2	$ (39.8)	$ 106.4	$ 108.6	$ (29.6)	$ 79.0
Other [a]	5.3	(2.9)	2.4	4.4	(2.3)	2.1
Total definite-lived intangible assets	151.5	(42.7)	108.8	113.0	(31.9)	81.1
Indefinite-lived intangible assets:						
Trade names	96.9	—	96.9	72.4	—	72.4
Total indefinite-lived intangible assets	96.9	—	96.9	72.4	—	72.4
Total intangible assets	$ 248.4	$ (42.7)	$ 205.7	$ 185.4	$ (31.9)	$ 153.5

(a) Average useful life of customer relationships and other definite-lived intangible assets are estimated to be approximately 12 years and seven years, respectively. The average useful life across all definite-lived intangible assets is estimated to be approximately 12 years.

The Company currently estimates that aggregate amortization expense will be approximately $12.9 million in 2022, $12.7 million in 2023, $12.7 million in 2024, $12.5 million in 2025, $12.3 million in 2026 and $45.7 million thereafter. Actual amounts of amortization may differ from estimated amounts due to additional intangible asset acquisitions, changes in foreign currency rates, measurement period adjustments for recent acquisitions, impairment of intangible assets and other events.

NOTE 9 — DEBT

The following table summarizes the components of Long-term borrowings and finance lease obligations:

(in millions)	2021	2020
2019 Credit Agreement	$ 280.7	$ 209.4
Finance lease obligations [a]	2.1	0.6
Total long-term borrowings and finance lease obligations, including current portion	282.8	210.0
Less: Current finance lease obligations	0.6	0.2
Total long-term borrowings and finance lease obligations	$ 282.2	$ 209.8

(a) Amounts at December 31, 2021 include finance lease obligations acquired in the acquisition of OSW - see Note 2 - Acquisitions.

As more fully described within Note 18 – Fair Value Measurements, the Company uses a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. The fair value of long-term debt is based on interest rates that we believe are currently available to us for issuance of debt with similar terms and remaining maturities (Level 2 input).

The following table summarizes the carrying amounts and fair values of the Company's financial instruments:

	2021		2020	
(in millions)	**Notional Amount**	**Fair Value**	**Notional Amount**	**Fair Value**
Long-term borrowings [(a)]	$ 282.8	$ 282.8	$ 210.0	$ 210.0

(a) Long-term borrowings include current portions of finance lease obligations of $0.6 million and $0.2 million as of December 31, 2021 and 2020, respectively.

On July 30, 2019, the Company entered into the Second Amended and Restated Credit Agreement (as amended, the "2019 Credit Agreement"), by and among the Company (the "U.S. Borrower") and certain of its foreign subsidiaries (collectively, the "Borrowers"), Wells Fargo Bank, National Association, as administrative agent, swingline lender and issuing lender, JPMorgan Chase Bank, N.A. as syndication agent, and the other lenders and parties signatory thereto.

The 2019 Credit Agreement is a $500 million revolving credit facility, maturing on July 30, 2024, that provides for borrowings in the form of loans or letters of credit up to the aggregate availability under the facility, with a sub-limit of $75 million for letters of credit. The 2019 Credit Agreement allows for the Borrowers to borrow in denominations of U.S. Dollars, Canadian Dollars, Euros or British Pounds (with borrowings in non-U.S. currencies subject to a sublimit of $200 million). In addition, the Company may cause the commitments to increase by up to an additional $250 million, subject to the approval of the applicable lenders providing such additional financing. Borrowings under the 2019 Credit Agreement may be used for working capital and general corporate purposes, including acquisitions.

The Company's material domestic subsidiaries provide guarantees for all obligations of the Borrowers under the 2019 Credit Agreement, which is secured by a first priority security interest in (i) all existing or hereafter acquired domestic property and assets of the U.S. Borrower and material domestic subsidiaries, (ii) the stock or other equity interests in each of the material domestic subsidiaries and (iii) 65% of outstanding voting capital stock of certain first-tier foreign subsidiaries, subject to certain exclusions.

Borrowings under the 2019 Credit Agreement bear interest, at the Company's option, at a base rate or a Eurocurrency or SONIA daily rate (as each is defined in the 2019 Credit Agreement), plus, in each case, an applicable margin. The applicable margin ranges from zero to 0.75% for base rate borrowings and 1.00% to 1.75% for Eurocurrency or SONIA daily rate borrowings. The Company must also pay a commitment fee to the lenders ranging between 0.10% to 0.25% per annum on the unused portion of the $500 million revolving credit facility along with other standard fees. Letter of credit fees are payable on outstanding letters of credit in an amount equal to the applicable Eurocurrency or SONIA daily rate margin plus other customary fees.

The Company is subject to certain net leverage ratio and interest coverage ratio financial covenants under the 2019 Credit Agreement that are to be measured at each fiscal quarter-end. The Company was in compliance with all such covenants as of December 31, 2021. The 2019 Credit Agreement also includes a series of "covenant holiday" periods, which allow for the temporary increase of the minimum net leverage ratio following the completion of a permitted acquisition, or a series of acquisitions, when the aggregate consideration over a period of twelve months exceeds $75 million. In addition, the 2019 Credit Agreement includes customary negative covenants, subject to certain exceptions, restricting or limiting the Company's and its subsidiaries' ability to, among other things: (i) make non-ordinary course dispositions of assets; (ii) make certain fundamental business changes, such as mergers, consolidations or any similar combination; (iii) make restricted payments, including dividends and stock repurchases; (iv) incur indebtedness; (v) make certain loans and investments; (vi) create liens; (vii) transact with affiliates; (viii) enter into sale/leaseback transactions; (ix) make negative pledges; and (x) modify subordinated debt documents.

Under the 2019 Credit Agreement, restricted payments, including dividends and stock repurchases, shall be permitted if (i) the Company's leverage ratio is less than or equal to 3.25; (ii) the Company is in compliance with all other financial covenants; and (iii) there are no existing defaults under the 2019 Credit Agreement. If its leverage ratio is more than 3.25, the Company is still permitted to fund (i) up to $35 million of dividend payments and stock repurchases in any fiscal year; and (ii) an incremental $50 million of other cash payments in the aggregate during the term of the 2019 Credit Agreement.

The 2019 Credit Agreement contains customary events of default. If an event of default occurs and is continuing, the Borrowers may be required immediately to repay all amounts outstanding under the 2019 Credit Agreement and the commitments from the lenders may be terminated.

On December 23, 2021, the Company entered into the First Amendment to the 2019 Credit Agreement. The amendment was largely administrative in nature, including certain language to address the pending transition from LIBOR. There were no changes to the term or the Company's borrowing capacity under the 2019 Credit Agreement.

As of December 31, 2021, there was $280.7 million of cash drawn and $10.1 million of undrawn letters of credit under the 2019 Credit Agreement, with $209.2 million of net availability for borrowings.

The following table summarizes the gross borrowings and gross payments under the Company's revolving credit facilities:

	For the Years Ended December 31,		
(in millions)	**2021**	**2020**	**2019**
Gross borrowings	$ 214.0	$ 82.6	$ 84.0
Gross payments	143.5	94.4	76.6

Aggregate maturities of total borrowings due amount to approximately $0.6 million in 2022, $0.5 million in 2023, $281.2 million in 2024 and $0.5 million in 2025. The weighted average interest rate on long-term borrowings was 1.5% at December 31, 2021.

The Company paid interest of $3.9 million in 2021, $5.4 million in 2020 and $7.8 million in 2019.

Interest Rate Swap

On October 2, 2019, the Company entered into an interest rate swap (the "Swap") with a notional amount of $75.0 million, as a means of fixing the floating interest rate component on $75.0 million of its variable-rate debt. The Swap is designated as a cash flow hedge, with a maturity date of July 30, 2024.

As a result of the application of hedge accounting treatment, all unrealized gains and losses related to the derivative instrument are recorded in Accumulated other comprehensive loss and are reclassified into operations in the same period in which the hedged transaction affects earnings. Hedge effectiveness is assessed quarterly. We do not use derivative instruments for trading or speculative purposes.

The fair value of the Company's interest rate swaps is derived from a discounted cash flow analysis based on the terms of the contract and the interest rate curve (Level 2 inputs) and measured on a recurring basis in our Consolidated Balance Sheets.

At December 31, 2021 and 2020, the fair value of the Swap was a liability of $0.7 million and $3.0 million, respectively, which was included in Other long-term liabilities on the Consolidated Balance Sheets. During the year ended December 31, 2021, an unrealized pre-tax gain of $2.3 million was recorded in Accumulated other comprehensive loss, whereas during the years ended December 31, 2020, and 2019, unrealized pre-tax losses of $3.9 million and $1.0 million, respectively, were recorded in Accumulated other comprehensive loss.

NOTE 10 — INCOME TAXES

The following table summarizes the income tax expense from continuing operations:

	For the Years Ended December 31,		
(in millions)	**2021**	**2020**	**2019**
Current tax expense (benefit):			
Federal	$ 14.7	$ 16.4	$ 20.7
Foreign	5.0	1.4	0.4
State and local	4.0	5.1	6.0
Total current tax expense	23.7	22.9	27.1
Deferred tax expense (benefit):			
Federal	0.4	2.7	2.8
Foreign	1.5	3.1	2.2
State and local	(8.6)	(0.2)	(1.9)
Total deferred tax (benefit) expense	(6.7)	5.6	3.1
Total income tax expense	$ 17.0	$ 28.5	$ 30.2

The following table summarizes the differences between the statutory federal income tax rate and the effective income tax rate from continuing operations:

	For the Years Ended December 31,		
	2021	2020	2019
Statutory federal income tax rate	21.0 %	21.0 %	21.0 %
State income taxes, net of federal tax benefit	3.4	3.5	3.2
Valuation allowance	(2.9)	0.1	(0.6)
Remeasurement of deferred taxes	(2.8)	—	—
Tax reserves	0.1	(0.1)	(0.4)
Tax credits	(0.4)	(0.3)	(0.4)
Foreign tax rate effects	1.2	0.8	0.4
Excess tax benefits from stock compensation activity	(4.8)	(2.9)	(1.2)
Other, net	(0.3)	0.8	(0.2)
Effective income tax rate	14.5 %	22.9 %	21.8 %

The following table summarizes income before income taxes from continuing operations:

	For the Years Ended December 31,		
(in millions)	2021	2020	2019
U.S.	$ 94.8	$ 107.4	$ 126.0
Non-U.S.	22.8	17.2	12.6
Income before income taxes	$ 117.6	$ 124.6	$ 138.6

Summary

The Company recognized income tax expense of $17.0 million for the year ended December 31, 2021, compared to $28.5 million for the year ended December 31, 2020. The reduction in income tax expense in the current year was primarily due to the recognition of a $3.4 million tax benefit associated with the release of state valuation allowances and a $3.3 million tax benefit associated with the remeasurement of deferred taxes for changes in state tax apportionment, both of which primarily resulted from a change in tax status and other tax planning activities executed during the year, a $2.0 million increase in excess tax benefits from stock compensation activity and the effects of lower pre-tax earnings. Including these items, the Company's effective tax rate for the year ended December 31, 2021 was 14.5%, compared to 22.9% in 2020.

The Company recognized income tax expense of $28.5 million for the year ended December 31, 2020, compared to $30.2 million for the year ended December 31, 2019. The reduction in income tax expense in 2020 was primarily due to lower earnings and a $1.9 million increase in excess tax benefits from stock compensation activity, partially offset by the non-recurrence of a $0.8 million tax benefit from the release of state deferred tax valuation allowance recognized in 2019. The Company's effective tax rate for the year ended for the year ended December 31, 2020 was 22.9%, compared to 21.8% in 2019.

The Company paid income taxes of $35.5 million in 2021, $22.3 million in 2020 and $25.7 million in 2019.

Deferred Taxes

The following table summarizes deferred income tax assets and liabilities of the Company's continuing operations:

(in millions)	2021	2020
Deferred tax assets:		
Properties and equipment	$ 2.8	$ 2.6
Accrued expenses	24.7	27.5
Stock-based compensation	3.3	3.7
Net operating loss and tax credit carryforwards	19.4	21.0
Goodwill and intangibles	1.8	1.7
Pension benefits	15.1	21.8
Gross deferred tax assets	67.1	78.3
Valuation allowance	(5.1)	(8.8)
Total deferred tax assets	62.0	69.5
Deferred tax liabilities:		
Properties and equipment	(31.2)	(32.5)
Pension benefits	(9.2)	(12.1)
Goodwill and intangibles	(64.4)	(67.8)
Other	(1.9)	(1.2)
Gross deferred tax liabilities	(106.7)	(113.6)
Net deferred tax liabilities	$ (44.7)	$ (44.1)

The deferred tax asset for tax loss and tax credit carryforwards at December 31, 2021 includes state net operating loss carryforwards of $6.5 million and state income tax credits of $0.3 million, both of which will begin to expire in 2022, foreign net operating loss carryforwards of $9.8 million, which will begin to expire in 2025, and U.S. foreign tax credits of $2.8 million, which will begin to expire in 2023.

The deferred tax asset for tax loss and tax credit carryforwards at December 31, 2020, included state net operating loss carryforwards of $6.6 million, state income tax credits of $0.2 million, foreign net operating loss carryforwards of $11.1 million, and U.S. foreign tax credits of $3.1 million.

The $62.0 million of deferred tax assets at December 31, 2021, for which no valuation allowance is recorded, is anticipated to be realized through future taxable income or the future reversal of existing taxable temporary differences recorded as deferred tax liabilities at December 31, 2021. Should the Company determine that it is not more-likely-than-not to be able to realize its remaining deferred tax assets in the future, an adjustment to the valuation allowance would be recorded in the period such determination is made.

Generally, the Company has considered cash and cash equivalents held by subsidiaries outside the U.S. to be indefinitely reinvested in its foreign operations and the Company's current plans do not demonstrate a need to repatriate such cash to fund U.S. operations. However, in the event that these funds were needed to fund U.S. operations or to satisfy U.S. obligations, they generally could be repatriated. The repatriation of these funds may cause the Company to incur additional U.S. income tax expense, dependent on income tax laws and other circumstances at the time any such amounts were repatriated. As of December 31, 2021, the Company continues to assert that its undistributed earnings of certain foreign subsidiaries are indefinitely reinvested. It is not practicable to determine the income tax liability that would be payable if such earnings were not permanently reinvested.

Valuation Allowances

ASC 740*, Income Taxes*, requires that the future realization of deferred tax assets depends on the existence of sufficient taxable income in future periods. Possible sources of taxable income include taxable income in carryback periods, the future reversal of existing taxable temporary differences recorded as a deferred tax liability, tax-planning strategies that generate future income or gains in excess of anticipated losses in the carryforward period and projected future taxable income. If, based upon all available evidence, both positive and negative, it is more likely than not such deferred tax assets will not be realized, a valuation allowance is recorded. Significant weight is given to positive and negative evidence that is objectively verifiable. A company's three-year cumulative loss position is significant negative evidence in considering whether deferred tax assets are realizable and the accounting guidance restricts the amount of reliance the Company can place on projected taxable income to support the recovery of the deferred tax assets.

We continually evaluate the need to maintain a valuation allowance for deferred tax assets based on our assessment of whether it is more likely than not that deferred tax benefits will be realized through the generation of future taxable income. Appropriate consideration is given to all available evidence, both positive and negative, in assessing the need for a valuation allowance.

During the year ended December 31, 2021, the total valuation allowance recorded against the Company's deferred tax assets decreased by $3.7 million, primarily due to the aforementioned release of state valuation allowances. At December 31, 2021, the total valuation allowance recorded against the Company's deferred tax assets was $5.1 million, comprised of a $1.0 million valuation allowance recorded against state net operating loss carryforwards, a $2.8 million valuation allowance recorded against U.S. foreign tax credits, a $1.2 million valuation allowance recorded against foreign net deferred tax assets, and a $0.1 million valuation allowance recorded against other deferred tax assets.

Unrecognized Tax Benefits

The following table summarizes the activity related to the Company's unrecognized tax benefits:

(in millions)	2021	2020	2019
Balance at January 1	$ 1.2	$ 1.3	$ 1.6
Increases related to current year tax	0.1	—	—
Increases from prior period positions	—	—	0.2
Decreases from settlements with tax authorities	—	—	(0.2)
Decreases due to lapse of statute of limitations	(0.1)	(0.1)	(0.3)
Balance at December 31	$ 1.2	$ 1.2	$ 1.3

The Company's accounting policy is to recognize interest and penalties related to income tax matters in income tax expense. At each of December 31, 2021 and 2020, accruals for interest and penalties amounting to $0.4 million, are included in the Consolidated Balance Sheets but are not included in the table above. At December 31, 2021 and 2020, liabilities for unrecognized tax benefits, including interest and penalties of $1.6 million and $1.5 million, respectively, were included within Other long-term liabilities on the Consolidated Balance Sheets. At each of December 31, 2021 and 2020, unrecognized tax benefits of $0.1 million, were included as a component of Deferred tax liabilities on the Consolidated Balance Sheets.

All of the unrecognized tax benefits of $1.2 million at each of December 31, 2021 and 2020, would impact our annual effective tax rate, if recognized. We do not expect any significant change to our unrecognized tax benefits as a result of potential expiration of statute of limitations or settlements with tax authorities within the next twelve months.

Status of Tax Returns

We file U.S., state and foreign income tax returns in jurisdictions with varying statutes of limitations. The 2018 through 2020 tax years generally remain subject to examination by federal tax authorities, whereas the 2017 through 2020 tax years generally remain subject to examination by most state tax authorities. In significant foreign jurisdictions, the tax years from 2017 through 2020 generally remain subject to examination by their respective tax authorities.

NOTE 11 — PENSION AND OTHER POST-EMPLOYMENT PLANS

Defined Benefit Pension Plans

The Company and its subsidiaries sponsor two defined benefit pension plans covering certain salaried and hourly employees. These plans have been closed to new participants for a number of years. Benefits under these plans are primarily based on final average compensation and years of service as defined within the provisions of the individual plans. As a result of plan amendments, the latest of which was in 2008, the only new benefits that were being accrued through the end of 2016 were salary increases for a limited group of participants. Those benefits ceased at the end of 2016, at which point all existing plans became fully frozen.

On November 5, 2021, the Company purchased a group annuity contract from an insurance company, under which approximately $25 million of the projected benefit obligation of the U.S. benefit plan was transferred to the insurance company. In this transaction, the insurance company assumed responsibility for pension benefits and administration for approximately 800 retirees or their beneficiaries. The transaction was funded on November 15, 2021 with existing assets of the U.S. benefit plan. As a result, the Company recognized a pension settlement charge of $10.3 million in the year ended December 31, 2021.

The following table summarizes net periodic pension expense (benefit) for the U.S. and non-U.S. benefit plans:

	U.S. Benefit Plan			Non-U.S. Benefit Plan		
	For the Years Ended December 31,			For the Years Ended December 31,		
(in millions)	2021	2020	2019	2021	2020	2019
Company-sponsored plans:						
Service cost	$ —	$ —	$ —	$ 0.2	$ 0.2	$ 0.2
Interest cost	4.9	5.8	6.8	0.7	1.0	1.4
Expected return on plan assets	(9.6)	(9.2)	(8.7)	(2.0)	(1.9)	(2.0)
Amortization of prior service costs	—	—	—	0.2	0.1	0.1
Amortization of actuarial losses	3.9	3.2	2.6	0.8	0.5	0.7
Settlement charges	10.3	—	—	—	—	—
Net periodic pension expense (benefit)	$ 9.5	$ (0.2)	$ 0.7	$ (0.1)	$ (0.1)	$ 0.4

The items that comprise Net periodic pension expense (benefit), other than service cost and settlement charges, are included as a component of Other (income) expense, net on the Consolidated Statements of Operations.

The following table summarizes the weighted-average assumptions used in determining pension costs:

	U.S. Benefit Plan			Non-U.S. Benefit Plan		
	For the Years Ended December 31,			For the Years Ended December 31,		
	2021	2020	2019	2021	2020	2019
Discount rate	2.8 %	3.5 %	4.4 %	1.3 %	2.0 %	2.8 %
Expected long-term rate of return on plan assets	7.4 %	7.4 %	7.0 %	3.5 %	3.6 %	4.2 %

The following table summarizes the changes in the projected benefit obligation and plan assets:

	U.S. Benefit Plan		Non-U.S. Benefit Plan	
(in millions)	2021	2020	2021	2020
Benefit obligation, beginning of year	$ 180.2	$ 169.4	$ 57.6	$ 52.3
Service cost	—	—	0.2	0.2
Interest cost	4.9	5.8	0.7	1.0
Actuarial loss	(8.4)	15.2	(1.8)	5.1
Benefits and expenses paid	(9.3)	(10.2)	(3.4)	(3.0)
Settlement payments	(25.4)	—	—	—
Amendments	—	—	—	0.2
Foreign currency translation	—	—	(0.5)	1.8
Benefit obligation, end of year	$ 142.0	$ 180.2	$ 52.8	$ 57.6
Accumulated benefit obligation, end of year	$ 142.0	$ 180.2	$ 52.8	$ 57.6

The following table summarizes the weighted-average assumptions used in determining benefit obligations:

	U.S. Benefit Plan		Non-U.S. Benefit Plan	
	2021	2020	2021	2020
Discount rate	3.1 %	2.8 %	1.8 %	1.3 %

The following summarizes the changes in the fair value of plan assets:

(in millions)	U.S. Benefit Plan 2021	U.S. Benefit Plan 2020	Non-U.S. Benefit Plan 2021	Non-U.S. Benefit Plan 2020
Fair value of plan assets, beginning of year	$ 142.5	$ 131.6	$ 57.4	$ 55.2
Actual return on plan assets [a]	10.5	16.1	1.9	2.2
Company contribution	1.9	5.0	1.2	1.3
Benefits and expenses paid	(9.3)	(10.2)	(3.4)	(3.0)
Settlement payments	(25.4)	—	—	—
Foreign currency translation	—	—	(0.6)	1.7
Fair value of plan assets, end of year	$ 120.2	$ 142.5	$ 56.5	$ 57.4

(a) Actual return on plan assets of the U.S. benefit plan for the years ended December 31, 2021 and 2020, was net of fees, commissions and other expenses paid from plan assets of $2.2 million and $2.0 million, respectively.

As more fully described within Note 18 – Fair Value Measurements, the Company uses a three-level fair value hierarchy that prioritizes the inputs used to measure fair value.

Following is a description of the valuation methodologies used for assets measured at fair value for the U.S. benefit plan:

- Cash and cash equivalents are comprised of cash on deposit and a money market fund, that invests principally in short-term instruments. The money-market fund is valued at the net asset value (“NAV”) of the shares in the fund.
- Equity investments represent domestic and foreign securities, including common stock, which are publicly traded on active exchanges and are valued based on quoted market prices. Certain equity securities, which are valued using a model that takes the underlying security’s “best” price, divides it by the applicable exchange rate and multiplies the result by a depository receipt factor, are categorized within Level 2 of the fair value hierarchy.
- Fixed income investments include corporate bonds, asset-backed securities and treasury bonds. Corporate bonds are valued using pricing models that include bids provided by brokers or dealers, benchmark yields, base spreads and reported trades. Asset-backed securities are valued using models with readily observable data as inputs. Treasury bonds are valued based on quoted market prices in active markets.
- Real estate investments include public real estate investment trusts (“REIT”) and exchange traded REIT funds, which are publicly traded on active exchanges and are valued based on quoted market prices.

Following is a description of the valuation methodologies used for assets measured at fair value for the non-U.S. benefit plan:

- Cash and cash equivalents are comprised of cash on deposit and a money market fund, that invests principally in short-term instruments. The money-market fund is valued at the NAV of the shares in the fund.
- Diversified investment funds and insurance-linked securities are valued based on a daily NAV per share measured by the fund sponsor and used as the basis for current transactions.
- Fixed income investments include corporate bonds and asset-backed securities. Corporate bonds are valued based on quoted market prices in active markets or other readily observable market data. Asset-backed securities are valued using models with readily observable data as inputs.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Company believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following summarizes the Company's pension assets in a three-tier fair value hierarchy for its benefit plans:

	U. S. Benefit Plan							
	2021				2020			
(in millions)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	$ 3.6	$ —	$ —	$ 3.6	$ 4.4	$ —	$ —	$ 4.4
Equity investments:								
U.S. Large Cap	14.2	0.1	—	14.3	36.3	—	—	36.3
U.S. Small and Mid Cap	17.5	—	—	17.5	24.6	—	—	24.6
Developed international	7.0	3.1	—	10.1	10.2	9.5	—	19.7
Emerging markets	2.6	1.3	—	3.9	9.7	2.2	—	11.9
Fixed income investments:								
Government securities	3.8	—	—	3.8	4.9	—	—	4.9
Asset-backed securities	—	0.3	—	0.3	—	3.8	—	3.8
Corporate bonds	—	66.2	—	66.2	—	31.3	—	31.3
Mutual funds	—	—	—	—	5.0	—	—	5.0
Other investments:								
Real estate	—	—	—	—	0.4	—	—	0.4
Total assets at fair value [(a)]	$ 48.7	$ 71.0	$ —	$ 119.7	$ 95.5	$ 46.8	$ —	$ 142.3

(a) Total assets at fair value in the table above exclude a net receivable of $0.5 million and $0.2 million at December 31, 2021 and 2020, respectively.

	Non-U. S. Benefit Plan							
	2021				2020			
(in millions)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	$ 0.8	$ 4.6	$ —	$ 5.4	$ 0.4	$ 7.0	$ —	$ 7.4
Diversified investment funds [(a)]	—	23.3	—	23.3	—	29.6	—	29.6
Fixed income investments:								
Asset-backed securities	—	18.1	—	18.1	—	—	—	—
Corporate bonds	—	5.1	—	5.1	—	15.9	—	15.9
Other investments:								
Insurance-linked securities	—	—	4.6	4.6	—	—	4.5	4.5
Total assets at fair value	$ 0.8	$ 51.1	$ 4.6	$ 56.5	$ 0.4	$ 52.5	$ 4.5	$ 57.4

(a) These funds primarily invest in a diversified portfolio of equity securities and fixed income securities.

The Company maintains a structured investment strategy for its U.S. and non-U.S. benefit plans, which are designed to achieve certain target asset allocations depending on the plans' relative funded status.

As of December 31, 2021, the target asset allocations for the U.S. benefit plan are (i) between 54% and 69% in fixed income investments, (ii) between 29% and 44% in equity investments and (iii) between 0% and 20% in cash and cash equivalents.

Plan assets for the non-U.S. benefit plan consist principally of a portfolio of diversified investment funds, corporate bonds and insurance-linked securities. As of December 31, 2021, the target asset allocations for the non-U.S. benefit plan assets are generally between 65% and 75% in fixed income investments and cash and cash equivalents, and between 25% and 35% in equity investments.

The following summarizes the funded status of the Company's benefit plans:

(in millions)	U.S. Benefit Plan 2021	U.S. Benefit Plan 2020	Non-U.S. Benefit Plan 2021	Non-U.S. Benefit Plan 2020
Fair value of plan assets, end of year	$ 120.2	$ 142.5	$ 56.5	$ 57.4
Benefit obligation, end of year	142.0	180.2	52.8	57.6
Funded status, end of year	$ (21.8)	$ (37.7)	$ 3.7	$ (0.2)

The following summarizes the amounts recognized within the Company's Consolidated Balance Sheets:

(in millions)	U.S. Benefit Plan 2021	U.S. Benefit Plan 2020	Non-U.S. Benefit Plan 2021	Non-U.S. Benefit Plan 2020
Amounts recognized in our Consolidated Balance Sheets include:				
Deferred charges and other long-term assets	$ —	$ —	$ 3.7	$ —
Long-term pension and other post-retirement benefit liabilities	(21.8)	(37.7)	—	(0.2)
Net (liability) asset recorded	$ (21.8)	$ (37.7)	$ 3.7	$ (0.2)
Amounts recognized in Accumulated other comprehensive loss include:				
Actuarial losses	$ 57.7	$ 81.3	$ 16.9	$ 19.6
Prior service costs	—	—	2.4	2.6
Net amount recognized, pre-tax	$ 57.7	$ 81.3	$ 19.3	$ 22.2

As the Company's benefit plans are fully frozen, all plan participants are now considered to be inactive. As a result, the associated actuarial losses and prior service costs that are included in Accumulated other comprehensive loss are being amortized into net periodic benefit cost over the remaining average life expectancy of plan participants. The Company expects $2.8 million of the actuarial losses and $0.1 million of the prior service costs to be amortized from Accumulated other comprehensive loss into net periodic benefit cost in 2022.

The Company currently expects to contribute up to $1.0 million to the non-U.S. benefit plan in 2022. The Company does not currently expect to make any contributions to the U.S. benefit plan in 2022. Future contributions to the plans will be based on such factors as annual service cost, the financial return on plan assets, interest rate movements that affect discount rates applied to plan liabilities and the value of benefit payments made.

The following summarizes the benefits expected to be paid under the Company's benefit plans in each of the next five years, and in aggregate for the five years thereafter:

(in millions)	U.S. Benefit Plan	Non-U.S. Benefit Plan
2022	$ 7.8	$ 2.8
2023	8.0	2.7
2024	8.2	2.7
2025	8.6	2.6
2026	8.7	2.6
2027-2031	43.4	12.5

Defined Contribution Retirement Plan

The Company also sponsors a defined contribution retirement plan (the "401(k) plan") covering a majority of its employees. Participation is via automatic enrollment and employees may elect to opt out of the 401(k) plan. Company contributions to the 401(k) plan are based on an employee's years of service, as well as the percentage of employee contributions. The Company's cost of the 401(k) plan was $8.9 million in 2021, $7.7 million in 2020 and $7.9 million in 2019.

Deferred Compensation Plan

The Company also provides a deferred compensation plan to certain employees. The deferred compensation plan is a non-qualified, unfunded defined contribution plan, which provides participants with benefits that would have been provided under the 401(k) plan, but could not be provided due to compensation limits for qualified plans under the Internal Revenue Code. At

December 31, 2021 and 2020, deferred compensation liabilities of $16.8 million and $13.8 million, respectively, were included on the Consolidated Balance Sheets, primarily within Long-term pension and other post-retirement benefit liabilities.

Multi-Employer Pension Plan

During the year ended December 31, 2021, the Company withdrew from the IAM National Pension Fund, a multi-employer pension plan that provided defined benefits to employees under a U.S. collective bargaining agreement. As a result, the Company incurred a $0.3 million withdrawal charge, which was recognized as a component of Other (income) expense, net on the Consolidated Statements of Operations. The withdrawal liability was settled in full during the year ended December 31, 2021. Following this withdrawal, the Company no longer participates in any multi-employer pension plans.

During the year ended December 31, 2020, the Company withdrew from the Sheet Metal Workers' National Pension Fund, a multi-employer pension plan that provided defined benefits to employees under a U.S. collective bargaining agreement. As a result, the Company incurred a $2.3 million withdrawal charge, which was recognized as a component of Other (income) expense, net on the Consolidated Statements of Operations. The withdrawal liability was settled in full during the year ended December 31, 2020.

NOTE 12 — COMMITMENTS AND CONTINGENCIES

Financial Commitments

The Company provides indemnifications and other guarantees in the ordinary course of business, the terms of which range in duration and often are not explicitly defined. Specifically, the Company is occasionally required to provide letters of credit and bid and performance bonds to various customers, principally to act as security for retention levels related to casualty insurance policies and to guarantee the performance of subsidiaries that engage in export and domestic transactions. At December 31, 2021, the Company had outstanding performance and financial standby letters of credit, as well as outstanding bid and performance bonds, aggregating to $28.6 million. If any such letters of credit or bonds are called, the Company would be obligated to reimburse the issuer of the letter of credit or bond. The Company believes the likelihood of any currently outstanding letter of credit or bond being called is remote.

The Company has transactions involving the sale of equipment to certain of its customers which include (i) guarantees to repurchase the equipment for a fixed price at a future date and (ii) guarantees to repurchase the equipment from the third-party lender in the event of default by the customer. As of December 31, 2021, both the single year and maximum potential cash payments the Company could be required to make to repurchase equipment under these agreements amounted to $2.7 million. The Company's risk under these repurchase arrangements would be partially mitigated by the value of the products repurchased as part of the transaction. Historical cash requirements and losses associated with these obligations have not been significant, but could increase if customer defaults exceed current expectations.

The Company has certain lease agreements for facilities owned by affiliates which include provisions requiring the Company to guarantee any remaining lease payments in the event of default. As of December 31, 2021, the total amount of future payments guaranteed under these agreements was approximately $1.7 million. The Company believes the likelihood of defaulting on these leases is remote.

Product Warranties

The Company issues product performance warranties to customers with the sale of its products. The specific terms and conditions of these warranties vary depending upon the product sold and country in which the Company does business, with warranty periods generally ranging from one to five years. The Company estimates the costs that may be incurred under its basic limited warranty and records a liability in the amount of such costs at the time the sale of the related product is recognized. Factors that affect the Company's warranty liability include (i) the number of units under warranty, (ii) historical and anticipated rates of warranty claims and (iii) costs per claim. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary.

The following table summarizes the changes in the Company's warranty liabilities:

(in millions)	2021	2020
Balance at January 1	$ 10.2	$ 11.2
Provisions to expense	6.9	7.6
Acquisitions	0.4	—
Payments	(7.7)	(8.7)
Foreign currency translation	(0.1)	0.1
Balance at December 31	$ 9.7	$ 10.2

NOTE 13 — LEGAL PROCEEDINGS

The Company is subject to various claims, including pending and possible legal actions for product liability and other damages, and other matters arising in the ordinary course of the Company's business. On a quarterly basis, the Company reviews uninsured material legal claims against the Company and accrues for the costs of such claims as appropriate in the exercise of management's best judgment and experience. However, due to a lack of factual information available to the Company about a claim, or the procedural stage of a claim, it may not be possible for the Company to reasonably assess either the probability of a favorable or unfavorable outcome of the claim or to reasonably estimate the amount of loss should there be an unfavorable outcome. Therefore, for many claims, the Company cannot reasonably estimate a range of loss.

The Company believes, based on current knowledge and after consultation with counsel, that the outcome of such claims and actions will not have a material adverse effect on the Company's results of operations or financial condition. However, in the event of unexpected future developments, it is possible that the ultimate resolution of such matters, if unfavorable, could have a material adverse effect on the Company's results of operations, financial condition or cash flow.

Hearing Loss Litigation

The Company has been sued for monetary damages by firefighters who claim that exposure to the Company's sirens has impaired their hearing and that the sirens are therefore defective. There were 33 cases filed during the period of 1999 through 2004, involving a total of 2,443 plaintiffs, in the Circuit Court of Cook County, Illinois. These cases involved more than 1,800 firefighter plaintiffs from locations outside of Chicago. In 2009, six additional cases were filed in Cook County, involving 299 Pennsylvania firefighter plaintiffs. During 2013, another case was filed in Cook County involving 74 Pennsylvania firefighter plaintiffs.

The trial of the first 27 of these plaintiffs' claims occurred in 2008, whereby a Cook County jury returned a unanimous verdict in favor of the Company.

An additional 40 Chicago firefighter plaintiffs were selected for trial in 2009. Plaintiffs' counsel later moved to reduce the number of plaintiffs from 40 to nine. The trial for these nine plaintiffs concluded with a verdict against the Company and for the plaintiffs in varying amounts totaling $0.4 million. The Company appealed this verdict. On September 13, 2012, the Illinois Appellate Court rejected this appeal. The Company thereafter filed a petition for rehearing with the Illinois Appellate Court, which was denied on February 7, 2013. The Company sought further review by filing a petition for leave to appeal with the Illinois Supreme Court on March 14, 2013. On May 29, 2013, the Illinois Supreme Court issued a summary order declining to accept review of this case. On July 1, 2013, the Company satisfied the judgments entered for these plaintiffs, which resulted in final dismissal of these cases.

A third consolidated trial involving eight Chicago firefighter plaintiffs occurred during November 2011. The jury returned a unanimous verdict in favor of the Company at the conclusion of this trial.

Following this trial, on March 12, 2012 the trial court entered an order certifying a class of the remaining Chicago Fire Department firefighter plaintiffs for trial on the sole issue of whether the Company's sirens were defective and unreasonably dangerous. The Company petitioned the Illinois Appellate Court for interlocutory appeal of this ruling. On May 17, 2012, the Illinois Appellate Court accepted the Company's petition. On June 8, 2012, plaintiffs moved to dismiss the appeal, agreeing with the Company that the trial court had erred in certifying a class action trial in this matter. Pursuant to plaintiffs' motion, the Illinois Appellate Court reversed the trial court's certification order.

Thereafter, the trial court scheduled a fourth consolidated trial involving three firefighter plaintiffs, which began in December 2012. Prior to the start of this trial, the claims of two of the three firefighter plaintiffs were dismissed. On December 17, 2012, the jury entered a complete defense verdict for the Company.

Following this defense verdict, plaintiffs again moved to certify a class of Chicago Fire Department plaintiffs for trial on the sole issue of whether the Company's sirens were defective and unreasonably dangerous. Over the Company's objection, the trial court granted plaintiffs' motion for class certification on March 11, 2013 and scheduled a class action trial to begin on June 10, 2013. The Company filed a petition for review with the Illinois Appellate Court on March 29, 2013 seeking reversal of the class certification order.

On June 25, 2014, a unanimous three-judge panel of the First District Illinois Appellate Court issued its opinion reversing the class certification order of the trial court. Specifically, the Appellate Court determined that the trial court's ruling failed to satisfy the class-action requirements that the common issues of the firefighters' claims predominate over the individual issues and that there is an adequate representative for the class. During a status hearing on October 8, 2014, plaintiffs represented to the Court that they would again seek to certify a class of firefighters on the issue of whether the Company's sirens were defective and unreasonably dangerous. On January 12, 2015, plaintiffs filed motions to amend their complaints to add class action allegations with respect to Chicago firefighter plaintiffs, as well as the approximately 1,800 firefighter plaintiffs from locations outside of Chicago. On March 11, 2015, the trial court granted plaintiffs' motions to amend their complaints. On April 24, 2015, the cases were transferred to Cook County chancery court to decide the class certification issues. On March 23, 2018, plaintiffs filed a motion to certify as a class all firefighters from the Chicago Fire Department who have filed lawsuits in this matter. The Company objected to certification and the parties engaged in discovery and other matters related to this motion. Thereafter, on December 20, 2021, the parties executed a settlement agreement to resolve claims of approximately 462 firefighters still involved in the Cook County litigation, as well as the DuPage County litigation discussed below. Under the terms of the settlement agreement, the Company has agreed to pay a lump sum of $0.2 million to resolve the claims of these firefighters. The Company has agreed to pay this lump sum amount based upon its assessment of firefighters who meet minimal bilateral hearing loss standards, which is a subset of the larger group referenced above. The settlement agreement does not require the payment of any attorney fees by the Company. The settlement agreement also provides that plaintiffs' attorney will withdraw from representing firefighters who do not agree to the settlement. The Company has discretion to void the settlement agreement if less than 93% of these firefighters agree to settle their claims; the settlement agreement will be voided if less than 70% of eligible firefighters agree to the settlement. The settlement agreement is subject to review and approval by the Court.

The Company also filed motions to dismiss cases involving firefighters who worked for fire departments located outside of the State of Illinois based on improper venue. On February 24, 2017, the Circuit Court of Cook County entered orders dismissing the cases of 1,770 such firefighter plaintiffs from the jurisdiction of the State of Illinois. Pursuant to these orders, these plaintiffs had six months thereafter to refile their cases in jurisdictions where these firefighters are located. Prior to this six-month deadline, attorneys representing some of these plaintiffs contacted the Company regarding possible settlement of their cases. During the year ended December 31, 2017, the Company entered into a global settlement agreement with two attorneys who represented approximately 1,090 of these plaintiffs. Under the terms of the settlement agreement, the Company offered $700 per plaintiff to settle these cases and 717 plaintiffs accepted this offer as a final settlement. The settlement agreement did not require the payment of any attorney fees by the Company. The attorneys representing these plaintiffs agreed to withdraw from representing plaintiffs who did not respond to the settlement offer. It is the Company's position that the non-settling plaintiffs who failed to timely refile their cases following the February 2017 dismissal by the Circuit Court of Cook County are now barred from doing so by the statute of limitations. The Company filed a venue motion seeking to transfer to DuPage County cases involving 10 plaintiffs who reside and work in Illinois but outside of Cook County. The Court granted this motion on June 28, 2017.

The Company was also sued on this issue outside of the Cook County, Illinois venue. Between 2007 and 2009, a total of 71 lawsuits involving 71 plaintiffs were filed in the Court of Common Pleas, Philadelphia County, Pennsylvania. Three of these cases were dismissed pursuant to pretrial motions filed by the Company. Another case was voluntarily dismissed. Prior to trial in four cases, the Company paid nominal sums to obtain dismissals.

Three trials occurred in Philadelphia involving these cases filed in 2007 through 2009. The first trial involving one of these plaintiffs occurred in 2010, when the jury returned a verdict for the plaintiff. The jury found that the Company's siren was not defectively designed, but that the Company negligently constructed the siren. The jury awarded damages in the amount of less than $0.1 million. The Company appealed this verdict. Another trial, involving nine Philadelphia firefighter plaintiffs, also occurred in 2010 when the jury returned a defense verdict for the Company as to all claims and all plaintiffs involved in that trial. The third trial, also involving nine Philadelphia firefighter plaintiffs, was completed during 2010 when the jury returned a defense verdict for the Company as to all claims and all plaintiffs involved in that trial.

Following defense verdicts in the last two Philadelphia trials, the Company negotiated settlements with respect to all remaining filed cases in Philadelphia at that time, as well as other firefighter claimants represented by the attorney who filed the

Philadelphia cases. On January 4, 2011, the Company entered into a Global Settlement Agreement (the "Settlement Agreement") with the law firm of the attorney representing the Philadelphia claimants, on behalf of 1,125 claimants the firm represented (the "Claimants") and who had asserted product claims against the Company (the "Claims"). Three hundred eight of the Claimants had lawsuits pending against the Company in Cook County, Illinois.

The Settlement Agreement provided that the Company pay a total amount of $3.8 million (the "Settlement Payment") to settle the Claims (including the costs, fees and other expenses of the law firm in connection with its representation of the Claimants), subject to certain terms, conditions and procedures set forth in the Settlement Agreement. In order for the Company to be required to make the Settlement Payment: (i) each Claimant who agreed to settle his or her claims had to sign a release acceptable to the Company (a "Release"), (ii) each Claimant who agreed to the settlement and who was a plaintiff in a lawsuit, had to dismiss his or her lawsuit with prejudice, (iii) by April 29, 2011, at least 93% of the Claimants identified in the Settlement Agreement must have agreed to settle their claims and provide a signed Release to the Company and (iv) the law firm had to withdraw from representing any Claimants who did not agree to the settlement, including those who filed lawsuits. If the conditions to the settlement were met, but less than 100% of the Claimants agreed to settle their Claims and sign a Release, the Settlement Payment would be reduced by the percentage of Claimants who did not agree to the settlement.

On April 22, 2011, the Company confirmed that the terms and conditions of the Settlement Agreement had been met and made a payment of $3.6 million to conclude the settlement. The amount was based upon the Company's receipt of 1,069 signed releases provided by Claimants, which was 95% of all Claimants identified in the Settlement Agreement.

The Company generally denies the allegations made in the claims and lawsuits by the Claimants and denies that its products caused any injuries to the Claimants. Nonetheless, the Company entered into the Settlement Agreement for the purpose of minimizing its expenses, including legal fees, and avoiding the inconvenience, uncertainty and distraction of the claims and lawsuits.

During April through October 2012, 20 new cases were filed in the Court of Common Pleas, Philadelphia County, Pennsylvania. These cases were filed on behalf of 20 Philadelphia firefighters and involved various defendants in addition to the Company. Five of these cases were subsequently dismissed. The first trial involving these 2012 Philadelphia cases occurred during December 2014 and involved three firefighter plaintiffs. The jury returned a verdict in favor of the Company. Following this trial, all of the parties agreed to settle cases involving seven firefighter plaintiffs set for trial during January 2015 for nominal amounts per plaintiff.

In January 2015, plaintiffs' attorneys filed two new complaints in the Court of Common Pleas, Philadelphia, Pennsylvania on behalf of approximately 70 additional firefighter plaintiffs. The vast majority of the firefighters identified in these complaints were located outside of Pennsylvania. One of the complaints in these cases, which involved 11 firefighter plaintiffs from the District of Columbia, was removed to federal court in the Eastern District of Pennsylvania. Plaintiffs voluntarily dismissed all claims in this case on May 31, 2016. The Company thereafter moved to recover various fees and costs in this case, asserting that plaintiffs' counsel failed to properly investigate these claims prior to filing suit. The Court granted this motion on April 25, 2017, awarding $0.1 million to the Company (the "Order"). After plaintiffs appealed this Order, the United States Court of Appeals for the Third Circuit affirmed the lower court decision awarding fees and costs to the Company.

With respect to claims of other out-of-state firefighters involved in these two cases, the Company moved to dismiss these claims as improperly filed in Pennsylvania. The Court granted this motion and dismissed these claims on November 5, 2015. During August through December 2015, another nine new cases were filed in the Court of Common Pleas, Philadelphia County, Pennsylvania. These cases involved a total of 193 firefighters, most of whom were located outside of Pennsylvania. The Company again moved to dismiss all claims filed by out-of-state firefighters in these cases as improperly filed in Pennsylvania. On May 24, 2016, the Court granted this motion and dismissed these claims. Plaintiffs appealed this decision and, on September 25, 2018, the appellate court reversed this dismissal. The Company then filed a petition with the appellate court requesting that the court reconsider its ruling. On December 7, 2018, the appellate court granted the Company's petition and withdrew its prior decision. On June 25, 2020, the Court issued a decision affirming the trial court's dismissal of these cases with prejudice.

On May 13, 2016, four new cases were filed in Philadelphia state court, involving a total of 55 Philadelphia firefighters who live in Pennsylvania. During August 2016, the Company settled a case for nominal amounts involving four Philadelphia firefighters that had been set for trial in Philadelphia state court during September 2016. During 2017, plaintiffs filed additional cases in the Court of Common Pleas, Philadelphia County, involving over 100 Philadelphia firefighter plaintiffs. During January 2017, plaintiffs filed a motion to consolidate and bifurcate, similar to a motion filed in the Pittsburgh hearing loss cases, as described below. The Company filed an opposition to this motion. These cases were then transferred to the mass tort program in Philadelphia for pretrial purposes. Plaintiffs' counsel thereafter dismissed several plaintiffs. During November 2017, a trial involving one Philadelphia firefighter occurred. The jury returned a verdict in favor of the Company in this trial. Prior to a dismissal of these cases pursuant to the Tolling Agreement, discussed below, there was a total of 75 firefighters involved in cases pending in the Philadelphia mass tort program.

During March 2014, an action also was brought in the Court of Common Pleas of Erie County, Pennsylvania on behalf of 61 firefighters. This case likewise involves various defendants in addition to the Company. After the Company filed pretrial motions, 33 Erie County firefighter plaintiffs voluntarily dismissed their claims. Prior to a dismissal of these cases pursuant to the Tolling Agreement, discussed below, there was a total of 28 firefighters involved in cases filed in Erie County.

During August 2017, five cases involving 70 firefighter plaintiffs were filed in Lackawanna County, Pennsylvania. These cases involve firefighter plaintiffs who originally filed in Cook County several years ago and were dismissed pursuant to the Company's forum nonconveniens motion.

On September 17, 2014, 20 lawsuits, involving a total of 193 Buffalo Fire Department firefighters, were filed in the Supreme Court of the State of New York, Erie County. All of the cases filed in Erie County, New York were removed to federal court in the Western District of New York. Plaintiffs filed a motion to consolidate and bifurcate these cases, similar to the motion filed in the Pittsburgh hearing loss cases, as described below. The Company filed an opposition to the motion. During February 2015, a lawsuit involving one New York City firefighter plaintiff was filed in the Supreme Court of the State of New York, New York County. The plaintiff named the Company as well as several other parties as defendants. That case subsequently was transferred to federal court in the Northern District of New York and thereafter dismissed. During April 2015 through January 2016, 29 new cases involving a total of 235 firefighters were filed in various counties in the New York City area. During December 2016 through October 2017, additional cases were filed in these jurisdictions. On February 5, 2018, the Company was served with a complaint in an additional case filed in Kings County, New York. This case involved one plaintiff. Prior to a dismissal of these cases pursuant to the Tolling Agreement, discussed below, there was a total of 536 firefighters involved in cases filed in the State of New York.

During November 2015, the Company was served with a complaint filed in Union County, New Jersey state court, involving 34 New Jersey firefighters. This case was transferred to federal court in the District of New Jersey. During the period from January through May 2016, eight additional cases were filed in various New Jersey state courts. Most of the firefighters in these cases resided in New Jersey and worked at New Jersey fire departments. During December 2016, a case involving one New Jersey firefighter was filed in the United States District Court of New Jersey. On May 2, 2017, plaintiffs filed a motion to consolidate and bifurcate in the pending federal court case in New Jersey. This motion was similar to bifurcation motions filed by plaintiffs in Pittsburgh, Buffalo and Philadelphia. The Court denied the motion as premature. Pursuant to a petition filed by both parties, all New Jersey state court cases were consolidated for pretrial purposes. Prior to a dismissal of these cases pursuant to the Tolling Agreement, discussed below, there was a total of 61 firefighters involved in cases filed in New Jersey.

During May through October 2016, nine cases were filed in Suffolk County, Massachusetts state court, naming the Company as a defendant. These cases involved 194 firefighters who lived and worked in the Boston area. During August 2017, plaintiffs filed additional cases in Suffolk County court. The Company moved to transfer various cases filed in Suffolk County to other counties in Massachusetts where plaintiffs resided and worked. Prior to a dismissal of these cases pursuant to the Tolling Agreement, discussed below, there was a total of 218 firefighters involved in cases filed in Massachusetts.

During August and September 2017, plaintiffs' attorneys filed additional hearing loss cases in Florida. The Company was the only named defendant. These cases were filed in several different counties in Florida, including Tampa, Miami and Orlando municipalities. Prior to a dismissal of these cases pursuant to the Tolling Agreement, discussed below, there was a total of 166 firefighters involved in cases filed in Florida.

During April through July 2013, additional cases were filed in Allegheny County, Pennsylvania on behalf of 247 plaintiff firefighters from Pittsburgh and against various defendants, including the Company. During May 2016, two additional cases were filed against the Company in Allegheny County involving 19 Pittsburgh firefighters. After the Company filed pretrial motions, the Court dismissed claims of 55 Pittsburgh firefighter plaintiffs. The Court scheduled trials for May, September and November 2016, for eight firefighters per trial. Prior to the first scheduled trial in Pittsburgh, the Court granted the Company's motion for summary judgment and dismissed all claims asserted by plaintiff firefighters involved in this trial. Following an appeal by the plaintiff firefighters, the appellate court affirmed this dismissal. The next trial for six Pittsburgh firefighters started on November 7, 2016. Shortly after this trial began, plaintiffs' counsel moved for a mistrial because a key witness suddenly became unavailable. The Court granted this motion and rescheduled this trial for March 6, 2017. During January 2017, plaintiffs also moved to consolidate and bifurcate trials involving Pittsburgh firefighters. In particular, plaintiffs sought one trial involving liability issues to apply to all Pittsburgh firefighters who filed suit against the Company. The Company filed an opposition to this motion. On April 18, 2017, the trial court granted plaintiffs' motion to bifurcate the next Pittsburgh trial. Pursuant to a motion for clarification filed by the Company, the Court ruled that the bifurcation order would only apply to six plaintiffs who were part of the next trial group in Pittsburgh. The Company thereafter sought an interlocutory appeal of the Court's bifurcation order. The appellate court declined to accept the appeal at that time. A bifurcated trial began on September 27, 2017 in Allegheny County, Pennsylvania. Prior to and during trial, two plaintiffs were dismissed, resulting in four plaintiffs remaining for trial. After approximately two weeks of trial, the jury found that the Company's siren product was not defective or unreasonably dangerous and rendered a verdict in favor of the Company.

A second trial involving Pittsburgh firefighters began during January 2018. At the outset of this trial, plaintiffs' attorneys, who represent all firefighters who have filed cases in Allegheny County, Philadelphia, Buffalo, New Jersey, Massachusetts, and Florida, as described above, requested that the Company consider settlement of various cases. This trial was continued to allow the parties to further discuss possible settlement. During March 2018, the parties agreed in principle on a framework (the "Settlement Framework") to resolve hearing loss claims and cases in all jurisdictions involved in the hearing loss litigation except in Cook County and Lackawanna County, and excluding one case involving one firefighter in New York City. The firefighters excluded from the Settlement Framework are represented by different attorneys. The Company has agreed to settle the cases in Lackawanna County and settled the case involving one firefighter in New York City for nominal amounts. Pursuant to the Settlement Framework, the Company would pay $700 to each firefighter who filed a lawsuit and is eligible to be part of the settlement. The Company would pay $300 to each firefighter who has not yet filed a case and is eligible to be part of the settlement. The settlement agreement does not include the payment of any attorney fees by the Company. To be eligible for settlement, among other things, firefighters must provide proof that they have high frequency noise-induced hearing loss. There are approximately 3,700 firefighters whose claims may be considered as part of this settlement, including approximately 1,320 firefighters who have ongoing filed lawsuits. This Settlement Framework was finalized in a global settlement agreement executed on November 4, 2019. Pursuant to this global settlement agreement, the parties are now in the process of determining how many of the approximately 3,700 firefighters will be eligible to participate in the settlement. In order to minimize the parties' respective legal costs and expenses during this settlement process, on July 5, 2018, the parties entered into a tolling agreement (the "Tolling Agreement"). Pursuant to the Tolling Agreement, counsel for the settling firefighters agreed to dismiss the pending lawsuits in all jurisdictions except for the Allegheny County (Pittsburgh), Pennsylvania cases, and the Company agreed to a tolling of any statute of limitations applicable to the dismissed cases. The Tolling Agreement continued in place until the parties executed the global settlement agreement on November 4, 2019. After execution of the global settlement agreement, the Allegheny County (Pittsburgh) cases were dismissed. The global settlement agreement requires plaintiffs' attorneys to withdraw from representing firefighters who elect not to participate in this settlement.

As of December 31, 2021, the Company has recognized an estimated liability for the potential settlement amount. While it is reasonably possible that the ultimate resolution of this matter may result in a loss in excess of the amount accrued, the incremental loss is not expected to be material.

From 2007 through 2009, firefighters also brought hearing loss claims against the Company in New Jersey, Missouri, Maryland and Kings County, New York. All of those cases, however, were dismissed prior to trial, including four cases in the Supreme Court of Kings County, New York that were dismissed upon the Company's motion in 2008. On appeal, the New York appellate court affirmed the trial court's dismissal of these cases.

NOTE 14 — EARNINGS PER SHARE

The Company computes earnings per share ("EPS") in accordance with ASC 260, *Earnings per Share*, which requires that non-vested restricted stock containing non-forfeitable dividend rights should be treated as participating securities pursuant to the two-class method. Under the two-class method, net income is reduced by the amount of dividends declared in the period for common stock and participating securities. The remaining undistributed earnings are then allocated to common stock and participating securities as if all of the net income for the period had been distributed. The amounts of distributed and undistributed earnings allocated to participating securities for the years ended December 31, 2021, 2020 and 2019 were insignificant and did not materially impact the calculation of basic or diluted EPS.

Basic EPS is computed by dividing income or loss available to common stockholders by the weighted average number of shares of common stock outstanding for the year.

Diluted EPS is computed using the weighted average number of shares of common stock and non-vested restricted stock awards outstanding for the year, plus the effect of dilutive potential common shares outstanding during the year. The dilutive effect of common stock equivalents is determined using the more dilutive of the two-class method or alternative methods. We use the treasury stock method to determine the potentially dilutive impact of our employee stock options and restricted stock units, and the contingently issuable method for our performance-based restricted stock unit awards.

For the years ended December 31, 2021, 2020 and 2019, options to purchase 0.2 million, 0.5 million and 0.2 million shares of the Company's common stock, respectively, had an anti-dilutive effect on EPS, and accordingly, are excluded from the calculation of diluted EPS.

The following table reconciles net income to basic and diluted EPS:

	For the Years Ended December 31,		
(in millions, except per share data)	**2021**	**2020**	**2019**
Income from continuing operations	$ 100.6	$ 96.1	$ 108.4
Gain from discontinued operations and disposal, net of tax	—	0.1	0.1
Net income	$ 100.6	$ 96.2	$ 108.5
Weighted average shares outstanding — Basic	60.8	60.3	60.2
Dilutive effect of common stock equivalents	1.1	1.4	1.4
Weighted average shares outstanding — Diluted	61.9	61.7	61.6
Basic earnings per share:			
Earnings from continuing operations	$ 1.65	$ 1.59	$ 1.80
Earnings from discontinued operations and disposal, net of tax	—	0.00	0.00
Net earnings per share	$ 1.65	$ 1.59	$ 1.80
Diluted earnings per share:			
Earnings from continuing operations	$ 1.63	$ 1.56	$ 1.76
Earnings from discontinued operations and disposal, net of tax	—	0.00	0.00
Net earnings per share	$ 1.63	$ 1.56	$ 1.76

NOTE 15 — STOCK-BASED COMPENSATION

The Company's stock compensation plan, approved by the Company's stockholders and administered by the Compensation and Benefits Committee of the Board of Directors of the Company (the "CBC"), provides for the grant of incentive stock options, restricted stock and other stock-based awards or units to key employees and directors. The plan, as amended, authorizes the grant of up to 11.0 million shares or units through April 2030. At December 31, 2021, approximately 5.8 million shares were available for future issuance under the plan.

The total compensation expense related to all grants awarded under the plan was $7.6 million, $8.4 million and $8.8 million, for the years ended December 31, 2021, 2020 and 2019, respectively. The related income tax benefits recognized in earnings were $1.5 million, $1.7 million and $2.0 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Stock Options

Stock options vest ratably (i.e. one-third annually) over the three years from the date of the grant. The cost of stock options, based on their fair value at the date of grant, is charged to expense over the respective vesting periods. Stock options normally become exercisable at a rate of one-third annually and in full on the third anniversary date. Under the plan, all options and rights must be exercised within ten years from date of grant. At the Company's discretion, vested stock option holders are permitted to elect an alternative settlement method in lieu of purchasing common stock at the option price. The alternative settlement method permits the employee to receive, without payment to the Company, cash, shares of common stock or a combination thereof equal to the excess of market value of common stock over the option purchase price. The Company has historically settled all such options in common stock and intends to continue to do so. Stock options do not have voting or dividend rights until such time that the options are exercised and shares have been issued.

The weighted average fair value of options granted during 2021, 2020 and 2019 was $13.54, $7.86 and $8.48, respectively.

The fair value of each option grant was estimated using the Black-Scholes option pricing model with the following weighted average assumptions:

	2021	2020	2019
Dividend yield	0.8 %	1.2 %	1.2 %
Expected volatility	33 %	33 %	32 %
Risk free interest rate	1.1 %	0.5 %	2.4 %
Weighted average expected option life in years	6.4	6.2	6.3

Dividend yields are based on historical dividend payments. Expected volatility is based on historical volatility of the Company’s common stock. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of the grant for periods corresponding with the expected life of the options. The expected life of options represents the weighted average period of time that options granted are expected to be outstanding giving consideration to vesting schedules and the Company’s historical exercise patterns.

The following summarizes stock option activity:

	Option Shares			Weighted Average Exercise Price		
(in millions, except per share data)	2021	2020	2019	2021	2020	2019
Outstanding, at beginning of year	2.0	2.3	2.4	$ 17.52	$ 13.87	$ 12.51
Granted	0.2	0.3	0.2	42.84	27.82	27.29
Exercised	(0.8)	(0.6)	(0.3)	12.12	7.85	13.12
Canceled or expired	—	—	—	30.76	26.44	21.99
Outstanding, at end of year	1.4	2.0	2.3	$ 23.58	$ 17.52	$ 13.87
Exercisable, at end of year	1.0	1.5	1.9	$ 19.15	$ 14.37	$ 11.28

At December 31, 2021, options that have vested and are expected to vest totaled 1.3 million shares, with a weighted average exercise price of $23.31, and represent the sum of 1.0 million vested (or exercisable) options and 0.3 million options that are expected to vest. Options that are expected to vest are derived by applying the pre-vesting forfeiture rate assumption against outstanding, unvested options as of December 31, 2021.

The following table summarizes information for stock options outstanding as of December 31, 2021 under all plans:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Shares	Weighted Average Remaining Life	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
	(in millions)	(in years)		(in millions)	
$5.01 — 10.00	—	1.0	$ 7.39	—	$ 7.39
10.01 — 15.00	0.2	3.3	13.60	0.3	13.60
15.01 — 20.00	0.3	4.2	16.50	0.3	16.50
20.01 — 25.00	0.2	6.3	23.14	0.2	23.14
25.01 — 30.00	0.5	7.9	27.58	0.2	27.49
30.01 — 35.00	—	0.0	—	—	—
35.01 — 40.00	—	9.6	38.19	—	—
40.01 — 45.00	0.2	9.3	42.86	—	—
	1.4	6.1	$ 23.58	1.0	$ 19.15

The aggregate intrinsic value of stock options outstanding and exercisable at December 31, 2021 was $27.1 million and $23.2 million, respectively. The total intrinsic value of stock options exercised was $22.7 million, $13.9 million and $4.3 million for the years ended December 31, 2021, 2020 and 2019, respectively. The related tax benefits were $5.7 million, $3.3 million and $1.0 million for the years ended December 31, 2021, 2020 and 2019, respectively. Cash received from the exercise of stock options was $4.2 million, $0.6 million and $1.7 million for the years ended December 31, 2021, 2020 and 2019, respectively.

The total compensation expense related to all stock option compensation plans was $2.0 million, $1.8 million and $1.9 million for the years ended December 31, 2021, 2020 and 2019, respectively. As of December 31, 2021, there was $2.7 million of total unrecognized compensation cost related to stock options that is expected to be recognized over the weighted-average period of approximately 1.9 years.

Restricted Stock

Restricted stock awards and restricted stock units primarily cliff vest at the third anniversary from the date of grant, provided the recipient is still employed by the Company on the vesting date. The cost of restricted stock, based on the fair market value of the underlying shares determined using the closing market price on the date of grant, is charged to expense over the respective vesting periods. Shares associated with non-vested restricted stock awards have the same voting rights as the Company's common stock and have non-forfeitable rights to dividends. Shares associated with non-vested restricted stock units do not have voting or dividend rights.

The following table summarizes restricted stock activity for the year ended December 31, 2021:

	Number of Restricted Shares	Weighted Average Price per Share
	(in millions)	
Outstanding and non-vested, at December 31, 2020	0.2	$ 26.18
Granted	0.1	42.59
Vested	(0.1)	23.95
Forfeited	—	30.06
Outstanding and non-vested, at December 31, 2021	0.2	$ 32.15

The total grant-date fair value of restricted stock that vested in the years ended December 31, 2021, 2020 and 2019 was $1.9 million, $1.7 million and $1.1 million, respectively.

The total compensation expense related to all restricted stock compensation plans was $2.6 million, $2.5 million and $2.2 million for the years ended December 31, 2021, 2020 and 2019, respectively. As of December 31, 2021, there was $2.7 million of total unrecognized compensation cost related to restricted stock that is expected to be recognized over the weighted-average period of approximately 1.9 years.

Performance Awards

In each of the three years in the period ended December 31, 2021, the Company granted performance-based restricted stock unit awards ("PSUs") to certain executives and other non-executive officers. Performance targets associated with PSUs are set annually and approved by the CBC. At the Company's discretion, actual payment of the awards earned shall be in cash or in common stock of the Company, or in a combination of both. The Company intends to settle all such awards by issuing shares of its common stock. The number of shares of common stock that the Company may issue in connection with these PSUs can range from 0% to 200% of target, depending upon achievement against the performance targets. Shares associated with non-vested PSUs do not have voting or dividend rights until issuance. The Company assesses the probability of vesting, based on expected achievement against these performance targets, on a quarterly basis.

The cost of PSUs, based on their fair market value determined using the closing market price on the date of grant, is charged to expense over the respective vesting periods, which is the three-year period ended December 31, 2021 for the 2019 grants, the three-year period ended December 31, 2022 for the 2020 grants and the three-year period ended December 31, 2023 for the 2021 grants.

The PSUs granted in 2021 have a three-year performance period ending December 31, 2023, in which the Company must achieve a certain cumulative EPS from continuing operations and a certain average return on invested capital ("ROIC"), which are performance conditions per ASC 718, *Compensation — Stock Compensation*. If earned, these shares would vest on December 31, 2023.

The PSUs granted in 2020 have a three-year performance period ending December 31, 2022, in which the Company must achieve a certain cumulative EPS from continuing operations and a certain average ROIC, which are performance conditions per ASC 718. If earned, these shares would vest on December 31, 2022.

The PSUs granted in 2019 had a three-year performance period ending December 31, 2021, in which a certain cumulative EPS from continuing operations and a certain average ROIC was targeted. The PSUs granted in 2019 became fully vested on December 31, 2021. Based on the achievement against targets over the three-year performance period, 94% of the target shares were earned. The underlying shares will be issued to participants in the first quarter of 2022.

The total grant-date fair value of PSUs that vested in the years ended December 31, 2021, 2020 and 2019 was $2.6 million, $5.4 million and $3.8 million, respectively.

Compensation expense included in the Consolidated Statements of Operations for the PSUs in the years ended December 31, 2021, 2020 and 2019 was $3.0 million, $4.1 million and $4.7 million, respectively. As of December 31, 2021, there was $4.3 million of total unrecognized compensation cost related to PSUs that is expected to be recognized over the weighted-average period of approximately 1.9 years.

The following table summarizes PSU activity for the year ended December 31, 2021:

	Number of PSUs (in millions)	Weighted Average Price per Share
Outstanding and non-vested, at December 31, 2020	0.2	$ 27.60
Granted	0.1	42.86
Vested	(0.1)	27.29
Forfeited	—	29.34
Outstanding and non-vested, at December 31, 2021	0.2	$ 34.87

NOTE 16 — STOCKHOLDERS' EQUITY

The Company's Board of Directors (the "Board") has the authority to issue 90.0 million shares of common stock at a par value of $1 per share. The holders of common stock (i) may receive dividends subject to all of the rights of the holders of preference stock, (ii) shall be entitled to share ratably upon any liquidation of the Company in the assets of the Company, if any, remaining after payment in full to the holders of preference stock and (iii) receive one vote for each common share held and shall vote together share for share with the holders of voting shares of preference stock as one class for the election of directors and for all other purposes. The Company had 68.9 million and 67.8 million common shares issued as of December 31, 2021 and 2020, respectively. Of those amounts, 60.9 million and 60.5 million common shares were outstanding as of December 31, 2021 and 2020, respectively.

The Board is also authorized to provide for the issuance of 0.8 million shares of preference stock at a par value of $1 per share. The authority of the Board includes, but is not limited to, the determination of the dividend rate, voting rights, conversion and redemption features and liquidation preferences. The Company has not designated or issued any preference stock as of December 31, 2021.

Dividends

The Company declared and paid dividends totaling $22.0 million, $19.4 million and $19.3 million during 2021, 2020 and 2019, respectively.

On February 18, 2022, the Board declared a quarterly cash dividend of $0.09 per common share payable on April 1, 2022 to stockholders of record at the close of business on March 18, 2022.

Stock Repurchase Program

In November 2014, the Board authorized a stock repurchase program of up to $75.0 million of the Company's common stock. In March 2020, the Board authorized an additional stock repurchase program of up to $75.0 million of the Company's common stock. The March 2020 stock repurchase program supplements the Board's prior authorization under the November 2014 stock repurchase program, which remains in effect.

The stock repurchase programs are intended primarily to facilitate opportunistic purchases of Company stock as a means to provide cash returns to stockholders, enhance stockholder returns and manage the Company's capital structure. Under its stock repurchase programs, the Company is authorized to repurchase, from time to time, shares of its outstanding common stock in the open market or through privately negotiated transactions. Stock repurchases by the Company are subject to market conditions and other factors and may be commenced, suspended or discontinued at any time.

During the year ended December 31, 2021, the Company repurchased 361,804 shares for a total of $15.4 million under the stock repurchase program. During the year ended December 31, 2020, the Company repurchased 498,217 shares for a total of

$13.7 million under the stock repurchase program. During the year ended December 31, 2019, the Company repurchased 48,409 shares for a total of $1.0 million under the stock repurchase program.

Accumulated Other Comprehensive Loss

The following tables summarize the changes in each component of Accumulated other comprehensive loss, net of tax:

(in millions) [a]	Actuarial Losses [b]	Prior Service Costs	Foreign Currency Translation	Interest Rate Swaps	Total
Balance at January 1, 2021	$ (88.2)	$ (2.6)	$ 1.3	$ (2.2)	$ (91.7)
Other comprehensive income (loss) before reclassifications	9.1	—	(4.7)	1.0	5.4
Amounts reclassified from accumulated other comprehensive loss	11.2	0.2	—	0.7	12.1
Net current-period other comprehensive income (loss)	20.3	0.2	(4.7)	1.7	17.5
Balance at December 31, 2021	$ (67.9)	$ (2.4)	$ (3.4)	$ (0.5)	$ (74.2)

(a) Amounts in parentheses indicate losses.
(b) During the year ended December 31, 2021, the Company reclassified $10.3 million of actuarial losses from Accumulated other comprehensive loss to Pension settlement charges on the Consolidated Statements of Operations, in connection with the purchase of a group annuity contract from an insurance company. See Note 11 - Pension and Other Post-Employment Plans for further discussion.

(in millions) [a]	Actuarial Losses	Prior Service Costs	Foreign Currency Translation	Interest Rate Swaps	Total
Balance at January 1, 2020	$ (80.4)	$ (2.4)	$ (7.1)	$ 0.8	$ (89.1)
Other comprehensive (loss) income before reclassifications	(10.6)	(0.3)	8.4	(3.3)	(5.8)
Amounts reclassified from accumulated other comprehensive loss	2.8	0.1	—	0.3	3.2
Net current-period other comprehensive (loss) income	(7.8)	(0.2)	8.4	(3.0)	(2.6)
Balance at December 31, 2020	$ (88.2)	$ (2.6)	$ 1.3	$ (2.2)	$ (91.7)

(a) Amounts in parentheses indicate losses.

The following table summarizes the amounts reclassified from Accumulated other comprehensive loss, net of tax, and the affected line item in the Consolidated Statements of Operations:

Details about Accumulated Other Comprehensive Loss Components	Amount Reclassified from Accumulated Other Comprehensive Loss — For the Years Ended December 31, 2021	2020	Affected Line Item in Consolidated Statements of Operations
	(in millions) [a]		
Amortization of actuarial losses of defined benefit pension plans	$ (4.7)	$ (3.7)	Other (income) expense, net
Recognition of actuarial losses associated with pension settlement	(10.3)	—	Pension settlement charges
Amortization of prior service costs of defined benefit pension plans	(0.2)	(0.1)	Other (income) expense, net
Interest rate swaps	(0.9)	(0.4)	Interest expense
Total before tax	(16.1)	(4.2)	
Income tax benefit	4.0	1.0	Income tax expense
Total reclassifications for the period, net of tax	$ (12.1)	$ (3.2)	

(a) Amount in parentheses indicate expenses on the Consolidated Statements of Operations.

NOTE 17 — SEGMENT INFORMATION

The Company has two reportable segments. Business units are organized under each reportable segment because they share certain characteristics, such as technology, marketing, distribution and product application, which create long-term synergies. The principal activities of the Company's reportable segments are as follows:

Environmental Solutions — Our Environmental Solutions Group is a leading manufacturer and supplier of a full range of street sweepers, sewer cleaners, industrial vacuum loaders, safe-digging trucks, high-performance waterblasting equipment, road-marking and line-removal equipment, dump truck bodies, trailers, and metal extraction support equipment. The Group manufactures vehicles and equipment in the U.S. and Canada that are sold under the Elgin®, Vactor®, Guzzler®, TRUVAC®, Westech™, Jetstream®, Mark Rite Lines, Ox Bodies®, Crysteel®, J-Craft®, Duraclass®, Rugby®, Travis®, OSW, NTE, WTB, Ground Force, Bucks® and Switch-N-Go® brand names. Product offerings also include certain products manufactured by other companies, such as refuse and recycling collection vehicles, camera systems, ice resurfacing equipment and snow-removal equipment. Products are sold to both municipal and industrial customers either through a dealer network or direct sales to service customers generally depending on the type and geographic location of the customer. In addition to vehicle and equipment sales, the Group also engages in the sale of parts, service and repair, equipment rentals and training as part of a comprehensive aftermarket offering to its current and potential customers through its service centers located across North America. Our Environmental Solutions Group includes the aggregated results of two operating segments, including TBEI.

In addition, as discussed in Note 2 – Acquisitions, the Company completed the acquisitions of OSW, Ground Force and Deist during the year ended December 31, 2021. The assets and liabilities of OSW, Ground Force and Deist have been consolidated into the Consolidated Balance Sheet as of December 31, 2021, while the post-acquisition results of operations of OSW and Ground Force have been included in the Consolidated Statements of Operations subsequent to their respective closing dates, within the Environmental Solutions Group. Given the proximity of the completion of the Deist acquisition to December 31, 2021, its post-acquisition results of operations were immaterial to the year ended December 31, 2021. The Company is in the process of determining the impact, if any, that the acquisitions completed in 2021 may have on its reportable segments.

Safety and Security Systems — Our Safety and Security Systems Group is a leading manufacturer and supplier of comprehensive systems and products that law enforcement, fire rescue, emergency medical services, campuses, military facilities and industrial sites use to protect people and property. Offerings include systems for community alerting, emergency vehicles, first responder interoperable communications and industrial communications. Specific products include public safety equipment, such as vehicle lightbars and sirens, industrial signaling equipment, public warning systems and general alarm/ public address systems. Products are sold under the Federal Signal™, Federal Signal VAMA®, and Victor® brand names. The Group operates manufacturing facilities in the U.S., Europe and South Africa.

Corporate contains those items that are not included in our reportable segments.

Net sales by reportable segment reflect sales of products and services to external customers, as reported in the Company's Consolidated Statements of Operations. Intersegment sales are insignificant. The Company evaluates performance based on operating income of the respective segment. Operating income includes all revenues, costs and expenses directly related to the segment involved. In determining reportable segment income, neither corporate nor interest expenses are included. Reportable segment depreciation and amortization expense, identifiable assets and capital expenditures relate to those assets that are utilized by the respective reportable segment. Corporate assets consist principally of cash and cash equivalents, deferred tax assets and fixed assets. The accounting policies of each reportable segment are the same as those described in Note 1 – Summary of Significant Accounting Policies.

Revenues attributed to customers located outside of the U.S. aggregated to \$286.4 million in 2021, \$258.6 million in 2020 and \$268.5 million in 2019, of which sales exported from the U.S. aggregated to \$77.0 million, \$69.7 million and \$72.8 million, respectively.

The following table summarizes the Company's continuing operations by segment, including net sales, operating income, depreciation and amortization, total assets and capital expenditures:

(in millions)	For the Years Ended December 31, 2021	2020	2019
Net sales:			
Environmental Solutions	$ 1,004.0	$ 915.8	$ 992.9
Safety and Security Systems	209.2	215.0	228.4
Total net sales	$ 1,213.2	$ 1,130.8	$ 1,221.3
Operating income:			
Environmental Solutions	$ 120.5	$ 124.3	$ 139.4
Safety and Security Systems	32.7	35.5	38.6
Corporate and eliminations	(22.5)	(28.4)	(30.9)
Total operating income	130.7	131.4	147.1
Interest expense	4.5	5.7	7.9
Pension settlement charges	10.3	—	—
Other (income) expense, net	(1.7)	1.1	0.6
Income before income taxes	$ 117.6	$ 124.6	$ 138.6
Depreciation and amortization:			
Environmental Solutions	$ 46.7	$ 41.3	$ 38.1
Safety and Security Systems	3.6	3.4	3.3
Corporate	0.1	0.1	0.1
Total depreciation and amortization	$ 50.4	$ 44.8	$ 41.5
Total assets:			
Environmental Solutions	$ 1,098.2	$ 926.8	$ 908.1
Safety and Security Systems	226.9	225.5	222.6
Corporate and eliminations	41.0	56.3	34.5
Total assets of continuing operations	1,366.1	1,208.6	1,165.2
Total assets of discontinued operations	—	0.2	0.3
Total assets	$ 1,366.1	$ 1,208.8	$ 1,165.5
Capital expenditures:			
Environmental Solutions	$ 34.3	$ 24.4	$ 31.6
Safety and Security Systems	2.8	4.1	2.7
Corporate	0.3	1.2	1.1
Total capital expenditures	$ 37.4	$ 29.7	$ 35.4

The following table summarizes net sales by geographic region based on the location of the end-customer:

(in millions)	For the Years Ended December 31, 2021	2020	2019
Net sales:			
U.S.	$ 926.8	$ 872.2	$ 952.8
Canada	192.4	160.5	169.0
Europe/Other	94.0	98.1	99.5
Total net sales	$ 1,213.2	$ 1,130.8	$ 1,221.3

The following table summarizes long-lived assets by geographic region based on the location of the Company's subsidiaries:

(in millions)	2021	2020	2019
Long-lived assets:			
U.S.	$ 219.9	$ 177.4	$ 168.3
Canada	56.3	60.4	62.7
Europe/Other	3.9	4.3	3.9
Total long-lived assets	$ 280.1	$ 242.1	$ 234.9

NOTE 18 — FAIR VALUE MEASUREMENTS

The Company uses a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. This hierarchy maximizes the use of observable inputs and minimizes the use of unobservable inputs. Observable inputs are developed based on market data obtained from independent sources, while unobservable inputs reflect the Company's assumptions about valuation based on the best information available in the circumstances. The three levels of inputs are classified as follows:

- Level 1 — quoted prices in active markets for identical assets or liabilities;
- Level 2 — observable inputs, other than quoted prices included in Level 1, such as quoted prices for markets that are not active, or other inputs that are observable or can be corroborated by observable market data; and
- Level 3 — unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities, including certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

In determining fair value, the Company uses various valuation approaches within the fair value measurement framework. The valuation methodologies used for the Company's assets and liabilities measured at fair value and their classification in the valuation hierarchy are summarized below:

Cash Equivalents

Cash equivalents primarily consist of time-based deposits and interest-bearing instruments with maturities of three months or less. The Company classified cash equivalents as Level 1 due to the short-term nature of these instruments and measured the fair value based on quoted prices in active markets for identical assets.

Interest Rate Swaps

As described in Note 9 – Debt, the Company may, from time to time, execute interest rate swaps as a means of fixing the floating interest rate component on a portion of its floating-rate debt. The Company classifies its interest rate swaps as Level 2 due to the use of a discounted cash flow model based on the terms of the contract and the interest rate curve (Level 2 inputs) to calculate the fair value of the swaps.

Contingent Consideration

As further described in Note 2 – Acquisitions, the Company has contingent obligations to transfer up to $15.5 million and $7.5 million to the former owners of MRL and Deist, respectively, if specified financial results are met over future reporting periods (i.e., an earn-out).

Liabilities for contingent consideration are measured at fair value each reporting period, with the acquisition-date fair value included as part of the consideration transferred. Subsequent changes in fair value are included as a component of Acquisition and integration-related (benefits) expenses on the Consolidated Statements of Operations.

The Company uses an income approach to value the contingent consideration obligation based on the present value of risk-adjusted future cash flows under either a scenario-based or option-pricing method, as appropriate. Due to the lack of relevant observable market data over fair value inputs, such as prospective financial information or probabilities of future events, the Company has classified the contingent consideration liability within Level 3 of the fair value hierarchy outlined in ASC 820, *Fair Value Measurements*.

The following tables summarize the Company's assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2021 and 2020:

	Fair Value Measurement at December 31, 2021 Using			
(in millions)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
Cash equivalents	$ 0.1	$ —	$ —	$ 0.1
Liabilities:				
Contingent consideration	—	—	2.7	2.7
Interest rate swaps	—	0.7	—	0.7

	Fair Value Measurement at December 31, 2020 Using			
(in millions)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
Cash equivalents	$ 33.1	$ —	$ —	$ 33.1
Liabilities:				
Contingent consideration	—	—	4.2	4.2
Interest rate swaps	—	3.0	—	3.0

The following table provides a roll-forward of the fair value of recurring Level 3 fair value measurements for the years ended December 31, 2021 and 2020:

(in millions)	**2021**	**2020**
Contingent consideration liability, at January 1	$ 4.2	$ 4.3
Issuance of contingent consideration in connection with acquisitions	2.0	—
Total gains included in earnings [(a)]	(3.5)	(0.1)
Contingent consideration liability, at December 31	$ 2.7	$ 4.2

(a) Included as a component of Acquisition and integration-related (benefits) expenses on the Consolidated Statements of Operations.

NOTE 19 — NEW ACCOUNTING PRONOUNCEMENTS (ISSUED BUT NOT YET ADOPTED)

In October 2021, the FASB issued ASU No. 2021-08, *Business Combinations (Topic 805), Accounting for Contract Assets and Liabilities from Contracts with Customers*, which requires companies to recognize and measure customer contract assets and contract liabilities acquired in a business combination as if the acquiring company originated the related revenue contracts. Prior to adopting this ASU, acquired contract assets and liabilities were measured at fair value. This ASU is effective for fiscal years beginning after December 15, 2022 and early adoption is permitted. The Company is evaluating the timing and effects of adopting this ASU and currently does not expect this ASU to have a material impact on its consolidated financial statements.

No other new accounting pronouncements issued, but not yet adopted, are expected to have a material impact on the Company's results of operations, financial position or cash flow.

NOTE 20 — SUBSEQUENT EVENTS

On February 16, 2022, the Company completed the acquisition of its University Park, Illinois manufacturing facility for approximately $28 million. The Company had previously leased the facility under a lease that was due to expire at the end of June 2023.

Item 9. ***Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.***

None.

Item 9A. ***Controls and Procedures.***

(a) Evaluation of Disclosure Controls and Procedures

The Company carried out an evaluation, under the supervision and with the participation of its management, including the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the Company's "disclosure controls and procedures" (as defined in the Exchange Act Rule 13a-15(e)) as of December 31, 2021.

Based on that evaluation, the Company's Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures were effective as of December 31, 2021.

(b) Management's Annual Report on Internal Control over Financial Reporting and Attestation Report of the Registered Public Accounting Firm

The Company's management is responsible for establishing and maintaining an adequate system of internal control over financial reporting, as defined in Exchange Act Rule 13a-15(f). Management conducted an assessment of the Company's internal control over financial reporting based on the framework established by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control — Integrated Framework (2013)*. Based on the assessment, management concluded that, as of December 31, 2021, the Company's internal control over financial reporting is effective.

During the year ended December 31, 2021, the Company completed the acquisitions of OSW and substantially all the assets and operations of Ground Force and Deist, as discussed in Note 2 – Acquisitions to the accompanying consolidated financial statements. Management has excluded the internal controls over financial reporting for the acquired operations from its assessment of the effectiveness of internal controls over financial reporting as of December 31, 2021. The combined net sales and total assets for these acquisitions (excluding lease-related assets, goodwill and intangible assets, which were integrated into the Company's control environment) represent approximately 4% of the consolidated financial statement amounts as of, and for the year ended, December 31, 2021.

Deloitte & Touche LLP, an independent registered public accounting firm, has audited the consolidated financial statements included in this Annual Report on Form 10-K and, as part of their audit, has issued its report, included herein, on the effectiveness of the Company's internal control over financial reporting. See "Report of Independent Registered Public Accounting Firm" under Item 8 of Part II of this Form 10-K.

(c) Changes in Internal Control over Financial Reporting

From time to time, the Company may make changes aimed at enhancing the effectiveness of the controls and to ensure that the systems evolve with the business. There were no changes in the Company's internal control over financial reporting that occurred during the Company's most recently completed fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. ***Other Information.***

On March 1, 2022, the Company issued a press release announcing its financial results for the three months and year ended December 31, 2021. The presentation slides for the 2021 fourth quarter earnings call were also posted on the Company's website at that time. The full text of the press release and earnings presentation is included as Exhibits 99.1 and 99.2, respectively, to this Form 10-K.

Item 9C. ***Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.***

Not applicable.

PART III

Item 10. *Directors, Executive Officers and Corporate Governance.*

A list of our executive officers and biographical information appears in Item 1 of Part I of this Form 10-K. Information regarding directors and nominees for directors is set forth in the Company's definitive proxy statement for its 2022 Annual Meeting of Stockholders and is incorporated herein by reference.

Information regarding the (i) Audit Committee, (ii) Nominating and Governance Committee and (iii) Compensation and Benefits Committee of the Company's Board of Directors is set forth in the Company's 2022 definitive proxy statement under the caption "Information Concerning the Board" and is incorporated herein by reference.

The Company has adopted a code of ethics that applies to its principal executive officer, principal financial officer and principal accounting officer. This code of ethics and the Company's corporate governance policies are posted on the Company's website at www.federalsignal.com. The Company intends to satisfy its disclosure requirements regarding amendments to or waivers from its code of ethics by posting such information on this website. The charters of the (i) Audit Committee, (ii) Nominating and Governance Committee and (iii) Compensation and Benefits Committee of the Company's Board of Directors are available on the Company's website and are also available in print free of charge.

Item 11. *Executive Compensation.*

The information contained under the captions "Information Concerning the Board", "Compensation Committee Interlocks and Insider Participation", "Compensation Discussion and Analysis", "Compensation and Benefits Committee Report" and "Executive Compensation" of the Company's 2022 definitive proxy statement is incorporated herein by reference.

Item 12. *Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.*

Information regarding security ownership of (i) certain beneficial owners, (ii) all directors and nominees, (iii) named executive officers and (iv) directors and executive officers as a group is set forth in the Company's 2022 definitive proxy statement under the caption "Ownership of Our Common Stock" and is incorporated herein by reference. Information regarding our equity compensation plans is set forth in the Company's 2022 definitive proxy statement under the caption "Equity Compensation Plan Information" and is incorporated herein by reference.

Item 13. *Certain Relationships and Related Transactions, and Director Independence.*

Information regarding certain relationships is hereby incorporated by reference from the Company's 2022 definitive proxy statement under the headings "Information Concerning the Board" and "Certain Relationships and Related Party Transactions."

Item 14. *Principal Accountant Fees and Services.*

Information regarding principal accountant fees and services is incorporated by reference from the Company's 2022 definitive proxy statement under the heading "Independent Registered Public Accounting Firm Fees and Services."

PART IV

Item 15. *Exhibits, Financial Statement Schedules.*

1. Financial Statements

The following consolidated financial statements of the Company and the "Report of the Independent Registered Public Accounting Firm" contained under Item 8 of Part II this Form 10-K are incorporated herein by reference:

(a) Consolidated Statements of Operations for the Years Ended December 31, 2021, 2020 and 2019;
(b) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2021, 2020 and 2019;
(c) Consolidated Balance Sheets as of December 31, 2021 and 2020;
(d) Consolidated Statements of Cash Flows for the Years Ended December 31, 2021, 2020 and 2019;
(e) Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2021, 2020 and 2019; and
(f) Notes to Consolidated Financial Statements.

2. Financial Statement Schedules

Schedule II — Valuation and Qualifying Accounts of the Company for the three years ended December 31, 2021 is filed as a part of this Annual Report in response to Item 15(a)(2):

All other schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission are not required under the related instructions or are inapplicable, and therefore, have been omitted.

3. Exhibits

See Exhibit Index.

Item 16. *Form 10-K Summary.*

None.

SCHEDULE II

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES
Valuation and Qualifying Accounts

For the years ended December 31, 2021, 2020 and 2019

(in millions)	Balance at Beginning of Year	Additions: Charged to Costs and Expenses	Additions: Charged to Other Accounts[(a)]	Deductions[(b)]	Balance at End of Year
Allowance for doubtful accounts:					
Year Ended December 31, 2021	$ 2.9	$ 0.3	$ —	$ (1.1)	$ 2.1
Year Ended December 31, 2020	2.4	2.4	—	(1.9)	2.9
Year Ended December 31, 2019	1.6	1.9	—	(1.1)	2.4
Income tax valuation allowances:					
Year Ended December 31, 2021	$ 8.8	$ (3.6)	$ (0.1)	$ —	$ 5.1
Year Ended December 31, 2020	8.2	0.1	0.5	—	8.8
Year Ended December 31, 2019	9.4	(0.8)	(0.4)	—	8.2

(a) Represents amounts recognized in Accumulated other comprehensive loss and other adjustments that had no net impact on Income tax expense in the year.

(b) Represents amounts written off, net of related recoveries.

EXHIBIT INDEX

The following exhibits, other than those incorporated by reference, have been included in the Company's Form 10-K filed with the Securities and Exchange Commission.

Exhibit Number		Description
3.	a.	Restated Certificate of Incorporation of the Company. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed April 30, 2010.
	b.	Amended and Restated By-Laws of the Company. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed February 9, 2016.
4.	a.	Description of Securities. Incorporated by reference to Exhibit 4.a to the Company's Form 10-K for the year ended December 31, 2019.
10.	a. *	Supplemental Pension Plan. Incorporated by reference to Exhibit 10.C to the Company's Form 10-K for the year ended December 31, 1995.
	b. *	Executive Disability, Survivor and Retirement Plan. Incorporated by reference to Exhibit 10.D to the Company's Form 10-K for the year ended December 31, 1995.
	c. *	Savings Restoration Plan, as amended and restated January 1, 2007. Incorporated by reference to Exhibit 10.FF to the Company's Form 10-K for the year ended December 31, 2008.
	d. *	First Amendment of the Federal Signal Corporation Savings Restoration Plan. Incorporated by reference to Exhibit 10.MM to the Company's Form 10-K for the year ended December 31, 2008.
	e. *	Second Amendment to Federal Signal Corporation Savings Restoration Plan. Incorporated by reference to Exhibit 10.NN to the Company's Form 10-K for the year ended December 31, 2008.
	f. *	Third Amendment to Federal Signal Corporation Savings Restoration Plan. Incorporated by reference to Exhibit 10.OO to the Company's Form 10-K for the year ended December 31, 2008.
	g. *	Executive General Severance Plan, as amended and restated August 2012. Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the quarter ended June 30, 2012.
	h. *	Form of 2008 Executive Change-In-Control Severance Agreement (Tier 1) with certain executive officers. Incorporated by reference to Exhibit 10.HH to the Company's Form 10-K for the year ended December 31, 2008.
	i. *	Form of 2008 Executive Change-In-Control Severance Agreement (Tier 2) with certain executive officers. Incorporated by reference to Exhibit 10.II to the Company's Form 10-K for the year ended December 31, 2008.
	j. *	Form of 2010 Executive Change-In-Control Severance Agreement with certain executive officers (Tier 1). Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the quarter ended March 31, 2010.
	k. *	Form of 2010 Executive Change-In-Control Severance Agreement with certain executive officers (Tier 2).
	l. *	Federal Signal Corporation Executive Incentive Performance Plan, as amended and restated. Incorporated by reference to Appendix C to the Company's Definitive Proxy Statement filed on Schedule 14A filed March 25, 2010.
	m. *	Form of Nonqualified Stock Option Award Agreement - U.S. Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the quarter ended March 31, 2015.
	n. *	Form of Nonqualified Stock Option Award Agreement - Non-U.S. Incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q for the quarter ended March 31, 2015.
	o. *	Form of Nonqualified Stock Option Award Agreement - U.S. Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the quarter ended June 30, 2015.
	p. *	Form of Nonqualified Stock Option Award Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the quarter ended June 30, 2016.
	q. *	Form of Nonqualified Stock Option Award Agreement. Incorporated by reference to Exhibit 10.4 to the Company's Form 10-Q for the quarter ended June 30, 2017.
	r. *	Form of Performance Share Unit Award Agreement - Non-U.S. Incorporated by reference to Exhibit 10.5 to the Company's Form 10-Q for the quarter ended June 30, 2017.
	s. *	Form of Performance Share Unit Award Agreement - U.S. Incorporated by reference to Exhibit 10.6 to the Company's Form 10-Q for the quarter ended June 30, 2017.
	t. *	Form of Restricted Stock Award Agreement - U.S. Incorporated by reference to Exhibit 10.7 to the Company's Form 10-Q for the quarter ended June 30, 2017.
	u. *	Form of Restricted Stock Unit Award Agreement - Non-U.S. Incorporated by reference to Exhibit 10.8 to the Company's Form 10-Q for the quarter ended June 30, 2017.
	v. *	Federal Signal Corporation 2015 Executive Incentive Compensation Plan. Incorporated by reference to Appendix B to the Company's Definitive Proxy Statement filed on Schedule 14A filed March 18, 2015.

w. *	Form of Director Distribution Election. Incorporated by reference to Exhibit 10.s to the Company's Form 10-K for the year ended December 31, 2015.
x.	Asset and Share Purchase Agreement, dated as of February 29, 2016, by and among FST Canada Inc., the Company, Joe Johnson Equipment Inc. and the Shareholders of Seller named therein. Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed March 3, 2016.
y.	Asset Purchase Agreement, dated as of February 29, 2016, by and among Vactor Manufacturing Inc., the Company, Joe Johnson Equipment (USA) Inc. and the Shareholders of Seller named therein. Incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed March 3, 2016.
z. *	Short Term Incentive Bonus Plan. Incorporated by reference to Exhibit 10.3 to the Company's Form 10-Q for the quarter ended March 31, 2016.
aa. *	Form of Restricted Stock Unit and Dividend Equivalent – Award Agreement (Directors). Incorporated by reference to Exhibit 10.4 to the Company's Form 10-Q for the quarter ended March 31, 2016.
bb.	Joint Issues and Reverse Earn Out Payment Agreement, dated as of June 3, 2016, by and among the Company, FST Canada Inc., Joe Johnson Equipment LLC, Vactor Manufacturing Inc., Joe Johnson Equipment Inc., JJE Limited Partnership, Joe Johnson Equipment (USA) Inc., and the Shareholders of Seller named therein. Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed June 3, 2016.
cc. *	Separation Agreement and General Release, effective January 8, 2017, by and among Dennis J. Martin and Federal Signal Corporation. Incorporated by reference to Exhibit 99.1 to the Company's Form 8-K filed January 11, 2017.
dd. *	First Amendment to the Federal Signal Corporation 2005 Executive Incentive Compensation Plan (2010 Restatement), dated as of March 26, 2015. Incorporated by reference to Exhibit 10.10 to the Company's Form 10-Q for the quarter ended June 30, 2017.
ee. *	Second Amendment to the Federal Signal Corporation 2005 Executive Incentive Compensation Plan (2010 Restatement), dated as of July 24, 2017. Incorporated by reference to Exhibit 10.11 to the Company's Form 10-Q for the quarter ended June 30, 2017.
ff. *	First Amendment to the Federal Signal Corporation Executive Incentive Performance Plan, as amended and restated, dated as of July 24, 2017. Incorporated by reference to Exhibit 10.12 to the Company's Form 10-Q for the quarter ended June 30, 2017.
gg. *	First Amendment to the Federal Signal Corporation 2015 Executive Incentive Compensation Plan dated as of July 24, 2017. Incorporated by reference to Exhibit 10.13 to the Company's Form 10-Q for the quarter ended June 30, 2017.
hh. *	Employment Letter executed December 15, 2017, between Federal Signal Corporation and Mark D. Weber. Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed December 19, 2017.
ii.*	Form of Nonqualified Stock Option Award Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the quarter ended June 30, 2018.
jj.*	Form of Performance Share Unit Award Agreement - Non-U.S. Incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q for the quarter ended June 30, 2018.
kk.*	Form of Performance Share Unit Award Agreement - U.S. Incorporated by reference to Exhibit 10.3 to the Company's Form 10-Q for the quarter ended June 30, 2018.
ll.*	Form of Restricted Stock Award Agreement - U.S. Incorporated by reference to Exhibit 10.4 to the Company's Form 10-Q for the quarter ended June 30, 2018.
mm.*	Form of Restricted Stock Unit Award Agreement - Non-U.S. Incorporated by reference to Exhibit 10.5 to the Company's Form 10-Q for the quarter ended June 30, 2018.
nn.	Second Amended and Restated Credit Agreement, dated as of July 30, 2019, by and among the Company, and certain of its foreign subsidiaries, as Borrowers, Wells Fargo Bank, National Association, as administrative agent, swingline lender and issuing lender, JPMorgan Chase Bank, as syndication agent, KeyBank National Association, PNC Bank, National Association and SunTrust Bank, as documentation agents, Wells Fargo Securities, LLC and JP Morgan Chase Bank, N.A., as joint lead arrangers and joint bookrunners, and the other parties thereto. Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the quarter ended June 30, 2019.
oo.*	Fourth Amendment to Federal Signal Corporation Savings Restoration Plan, effective as of March 31, 2016. Incorporated by reference to Exhibit 10.zz to the Company's Form 10-K for the year ended December 31, 2019.
pp.*	Fifth Amendment to Federal Signal Corporation Savings Restoration Plan, effective as of January 1, 2018. Incorporated by reference to Exhibit 10.aaa to the Company's Form 10-K for the year ended December 31, 2019.
qq.*	Sixth Amendment to Federal Signal Corporation Savings Restoration Plan, effective as of January 1, 2019. Incorporated by reference to Exhibit 10.bbb to the Company's Form 10-K for the year ended December 31, 2019.

	rr.*	Seventh Amendment to Federal Signal Corporation Savings Restoration Plan, effective as of January 1, 2020. Incorporated by reference to Exhibit 10.ccc to the Company's Form 10-K for the year ended December 31, 2019.
	ss.*	Second Amendment to the Federal Signal Corporation 2015 Executive Incentive Compensation Plan Incorporated by reference to Appendix B to the Company's Definitive Proxy Statement filed on Schedule 14A filed on March 17, 2021.
	tt.*	Eighth Amendment to Federal Signal Corporation Savings Restoration Plan, effective as of January 1, 2021. Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the period ended September 30, 2021.
	uu.	Purchase and Sale Agreement, dated as of September 22, 2021. Incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q for the period ended September 30, 2021.
	vv.	First Amendment to Second Amended and Restated Credit Agreement, dated as of December 23, 2021, by and among the Company, and certain of its foreign subsidiaries, as Borrowers, Wells Fargo Bank, National Association, as administrative agent, swingline lender and issuing lender, JPMorgan Chase Bank, as syndication agent, KeyBank National Association, PNC Bank, National Association and SunTrust Bank, as documentation agents, Wells Fargo Securities, LLC and JP Morgan Chase Bank, N.A., as joint lead arrangers and joint bookrunners, and the other parties thereto.
	ww.	Purchase and Sale Agreement, dated as of February 1, 2022.
	xx.*	Federal Signal Corporation Retirement Savings Plan, as amended and restated effective as of January 1, 2020.
	yy.*	First Amendment to the Federal Signal Corporation Retirement Savings Plan, as amended and restated as of January 1, 2020.
	zz.*	Second Amendment to the Federal Signal Corporation Retirement Savings Plan, as amended and restated as of January 1, 2020.
14.		Code of Ethics for Chief Executive Officer and Senior Financial Officers, as amended. Incorporated by reference to Exhibit 14 to the Company's Form 10-K for the year ended December 31, 2003.
21.		Subsidiaries of the Registrant.
23.		Consent of Independent Registered Public Accounting Firm.
31.1		CEO Certification under Section 302 of the Sarbanes-Oxley Act.
31.2		CFO Certification under Section 302 of the Sarbanes-Oxley Act.
32.1		CEO Certification of Periodic Report under Section 906 of the Sarbanes-Oxley Act.
32.2		CFO Certification of Periodic Report under Section 906 of the Sarbanes-Oxley Act.
99.1		Fourth Quarter Financial Results Press Release dated March 1, 2022.
99.2		Fourth Quarter Earnings Call Presentation Slides.
101.INS		XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document).
101.SCH		Inline XBRL Taxonomy Extension Schema Document.
101.CAL		Inline XBRL Taxonomy Calculation Linkbase Document.
101.DEF		Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB		Inline XBRL Taxonomy Label Linkbase Document.
101.PRE		Inline XBRL Taxonomy Presentation Linkbase Document.
104		Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101).

* Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(a)(3) of Form 10-K.

Signatures

Pursuant to the requirements of Section 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.

FEDERAL SIGNAL CORPORATION

By: /s/ Jennifer L. Sherman

Jennifer L. Sherman

President and Chief Executive Officer
(Principal Executive Officer)

Date: March 1, 2022

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 Company and in the capacities indicated, as of March 1, 2022.

/s/ Jennifer L. Sherman Jennifer L. Sherman	President, Chief Executive Officer and Director (Principal Executive Officer)
/s/ Ian A. Hudson Ian A. Hudson	Senior Vice President, Chief Financial Officer (Principal Financial Officer)
/s/ Lauren B. Elting Lauren B. Elting	Vice President, Corporate Controller (Principal Accounting Officer)
/s/ Dennis J. Martin Dennis J. Martin	Chairman and Director
/s/ Eugene J. Lowe, III Eugene J. Lowe, III	Director
/s/ Bill Owens Bill Owens	Director
/s/ Shashank Patel Shashank Patel	Director
/s/ Brenda L. Reichelderfer Brenda L. Reichelderfer	Director
/s/ John L. Workman John L. Workman	Director

Exhibit 21

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

SUBSIDIARIES OF THE REGISTRANT AS OF DECEMBER 31, 2021

NAME OF SUBSIDIARY	JURISDICTION OF INCORPORATION
Crysteel Manufacturing, Inc.	Minnesota
Deist Industries, LLC	Delaware
Elgin Sweeper Company	Delaware
Federal Signal of Europe B.V.	Netherlands
Federal Signal UK Holdings Limited	United Kingdom
Federal Signal VAMA, S.A.	Spain
FS Depot, LLC	Wisconsin
FST Canada Inc.	Canada
GenNx/TBEI Intermediate Co.	Delaware
Ground Force Manufacturing LLC	Delaware
Guzzler Manufacturing, Inc.	Alabama
HighMark Traffic Services, Inc.	Montana
Jetstream of Houston, Inc.	Delaware
Jetstream of Houston LLP	Texas
Joe Johnson Equipment LLC	Delaware
Mark Rite Lines Equipment Company, Inc.	Delaware
Northend Truck Equipment, LLC	Washington
OSW Equipment & Repair, LLC	Washington
Ox Bodies, Inc.	Alabama
Rugby Manufacturing Company	Oregon
Tishomingo Acquisition, LLC	Delaware
Travis Acquisition, LLC	Delaware
Travis Body and Trailer, Inc.	Texas
Travis Leasing, LLC	Delaware
Truck Bodies & Equipment International, Inc.	Delaware
Vactor Manufacturing, LLC	Illinois
Victor Industrial Equipment (PTY) Limited	South Africa
Victor Products Holdings Ltd.	United Kingdom
Victor Products Ltd.	United Kingdom
Western Truck Body Mfg. ULC	Canada

Subsidiaries, including inactive subsidiaries, are not shown by name in the above listing, if considered in the aggregate as a single subsidiary, would not constitute a significant subsidiary.

Exhibit 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-168501, 333-190976, 333-190977, 333-204189, 333-228197 and 333-255748 on Form S-8 of our reports dated March 1, 2022, relating to the consolidated financial statements and financial statement schedule of Federal Signal Corporation and subsidiaries (the "Company"), and the effectiveness of the Company's internal control over financial reporting, appearing in this Annual Report on Form 10-K of Federal Signal Corporation for the year ended December 31, 2021.

/s/ Deloitte & Touche LLP
Chicago, Illinois
March 1, 2022

Exhibit 31.1

CEO Certification Under Section 302 of the Sarbanes-Oxley Act

I, Jennifer L. Sherman, certify that:

1. I have reviewed this annual report on Form 10-K of Federal Signal Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2022

/s/ Jennifer L. Sherman

Jennifer L. Sherman
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CFO Certification under Section 302 of the Sarbanes-Oxley Act

I, Ian A. Hudson, certify that:

1. I have reviewed this annual report on Form 10-K of Federal Signal Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2022

/s/ Ian A. Hudson

Ian A. Hudson

Senior Vice President and Chief Financial Officer

(Principal Financial Officer)

Exhibit 32.1

**CERTIFICATION PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)**

In connection with the Annual Report of Federal Signal Corporation (the “Company”) on Form 10-K for the period ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Jennifer L. Sherman, President and Chief Executive Officer of the Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (15 U.S.C. 78m or 78o (d)); and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 1, 2022

/s/ Jennifer L. Sherman

Jennifer L. Sherman
President and Chief Executive Officer
(*Principal Executive Officer)*

This certification accompanies the Report pursuant to § 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section. This certification shall also not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange act of 1934, as amended, except to the extent that the Company specifically incorporates it by reference.

Exhibit 32.2

CERTIFICATION PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)

In connection with the Annual Report of Federal Signal Corporation (the “Company”) on Form 10-K for the period ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Ian A. Hudson, Senior Vice President and Chief Financial Officer of the Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (15 U.S.C. 78m or 78o(d)); and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 1, 2022

/s/ Ian A. Hudson

Ian A. Hudson
Senior Vice President and Chief Financial Officer
(*Principal Financial Officer)*

This certification accompanies the Report pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section. This certification shall also not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that the Company specifically incorporates it by reference.

EXHIBIT 99.1

FEDERAL SIGNAL
Moves. Cleans. Protects.

1415 West 22nd Street
Oak Brook, Illinois 60523
630.954.2000
federalsignal.com

FOR IMMEDIATE RELEASE

Federal Signal Reports Fourth Quarter Results with 61% Improvement in Orders and 107% Increase in Backlog; Issues Outlook for 2022

Oak Brook, Illinois, March 1, 2022 — Federal Signal Corporation (NYSE:FSS), a leader in environmental and safety solutions, today reported results for the fourth quarter and year ended December 31, 2021.

Fourth Quarter and Full-Year Highlights

- **Q4 net sales of $301 million, up $7 million, or 2%, from last year**
- **Full-year net sales of $1.21 billion, up $82 million, or 7%, from last year**
- **GAAP EPS of $0.32 for the quarter, and $1.63 for the year**
- **Adjusted EPS of $0.40 for the quarter, and $1.75 for the year**
- **Record orders of $444 million for the quarter, up $168 million, or 61%, from last year**
- **Record backlog of $629 million, up $325 million, or 107%, from last year**
- **Issues 2022 outlook with adjusted EPS* of $1.76 to $2.00 and net sales of $1.35 billion to $1.45 billion**

Consolidated net sales for the fourth quarter were $301 million, up $7 million, or 2%, compared to the same quarter a year ago. Income from continuing operations for the fourth quarter was $19.5 million, equal to $0.32 per diluted share, compared to $26.0 million, or $0.42 per share, in the prior-year quarter. Income from continuing operations in the current-year quarter includes a non-cash, pre-tax pension settlement charge of $10.3 million, and approximately $3.0 million more discrete tax benefits compared to the prior-year quarter. The Company also reported adjusted income from continuing operations for the fourth quarter of $24.9 million, equal to $0.40 per diluted share, compared to $27.2 million, or $0.44 per share, in the same quarter a year ago. The Company is reporting adjusted results to facilitate comparisons of underlying performance on a year-over-year basis. A reconciliation of these and other non-GAAP measures is provided at the conclusion of this news release.

Consolidated net sales for the year ended December 31, 2021 were $1.21 billion, up $82 million, or 7%, compared to the prior year. Income from continuing operations for the year was $100.6 million, equal to $1.63 per diluted share, compared to $96.1 million, or $1.56 per share, in the prior year. Adjusted income from continuing operations for the year was $108.4 million, equal to $1.75 per diluted share, compared to $103.0 million, or $1.67 per diluted share, in the prior year.

Solid Operational Performance Despite Ongoing Disruptions; Customer Demand at Unprecedented Levels

"Our fourth quarter performance represented a solid finish to a year in which we delivered the second highest adjusted EPS* in our history, and is a testament to our team's relentless focus on serving our customers despite the ongoing challenges in the marketplace," commented Jennifer L. Sherman, President and Chief Executive Officer. "Our results were impacted by widespread supply chain disruption, increased commodity costs and the effects of higher coronavirus-related medical costs, partially offset by a lower-than-expected tax rate. Demand for our products remains at unprecedented levels, with our order intake this quarter setting a new Company record, contributing to an all-time high backlog of $629 million at the end of 2021, more than double the amount at the same time last year."

In the Environmental Solutions Group, net sales for the fourth quarter were $246 million, up $8 million, or 3%, compared to the prior-year quarter, while in the Safety and Security Systems Group, net sales for the fourth quarter were $56 million, compared to $57 million in the prior-year quarter.

Consolidated operating income for the fourth quarter was $30.1 million, compared to $33.8 million in the prior-year quarter. Consolidated operating margin for the fourth quarter was 10.0%, compared to 11.5% last year.

Consolidated adjusted earnings before interest, tax, depreciation and amortization ("adjusted EBITDA") for the fourth quarter was $40.0 million, compared to $47.0 million last year, and consolidated adjusted EBITDA margin in the current-year quarter was 13.3%, compared to 15.9% last year.

Adjusted EBITDA in the Environmental Solutions Group for the fourth quarter was $36.2 million, compared to $44.2 million last year, and its adjusted EBITDA margin in the current-year quarter was 14.7%, compared to 18.6% last year. Within the Safety and Security Systems Group, adjusted EBITDA for the fourth quarter was $11.0 million, compared to $11.2 million in the prior-year quarter, and its adjusted EBITDA margin in the current-year quarter was 19.7%, up from 19.6% last year.

Orders for the fourth quarter were $444 million, a new quarterly record for the Company, and an improvement of $168 million, or 61%, from last year. With the unprecedented order intake, consolidated backlog at December 31, 2021 was also at a record level of $629 million, an improvement of $325 million, or 107%, from last year.

Strong Cash Flow Supports M&A, Organic Growth Investment and Cash Returns to Shareholders

Net cash of $47 million was generated from operations in the fourth quarter, bringing the total year-to-date operating cash generation to $102 million.

During the fourth quarter, the Company completed the acquisitions of Ground Force and Deist. The Company also purchased its manufacturing facilities in Elgin, Illinois and University Park, Illinois in December 2021 and February 2022, respectively.

At December 31, 2021, total debt was $283 million, total cash and cash equivalents were $41 million and the Company had $209 million of availability for borrowings under its credit facility.

"Our cash flow generation remains strong, allowing us to acquire Ground Force and Deist, purchase two of our largest manufacturing facilities and fund cash returns to shareholders, while maintaining a low debt leverage position." said Sherman.

During the fourth quarter, the Company funded $12.0 million of share repurchases, bringing the total for the year to $15.4 million. The Company also funded dividends of $5.5 million during the fourth quarter, bringing the total for the year to $22.0 million, and recently declared a similar $0.09 per share dividend that will be payable in the first quarter of 2022.

Outlook

"We remain encouraged by conditions in our end markets, the ongoing execution against our strategic initiatives, and the order trends that we have seen over the last few quarters, which have contributed to a record backlog entering 2022," noted Sherman. "We have started to see benefits from federal stimulus funding in our municipal orders and with the recent increase in oil prices, we expect to see an uptick in demand for our safe-digging products. Notwithstanding a softer-than-normal first quarter, associated with ongoing supply chain volatility, coronavirus-related disruption and adverse weather, we anticipate recovery over the remainder of the year. For the full-year, we currently expect to report net sales of between $1.35 billion and $1.45 billion and adjusted EPS* of between $1.76 and $2.00 per share, despite a headwind of approximately $0.20 per share resulting from the normalization of our tax rate. With an active M&A pipeline, ongoing investments in new product development, capacity expansions and our people, and with anticipated multi-year tailwinds from infrastructure legislation passed in November, our businesses are well positioned for long-term, sustainable growth."

CONFERENCE CALL

Federal Signal will host its fourth quarter earnings conference call on Tuesday, March 1, 2022 at 10:00 a.m. Eastern Time. The call will last approximately one hour. The call may be accessed over the internet through Federal Signal's website at https://www.federalsignal.com or by dialing phone number 1-855-327-6837 and entering the pin number 10018209. An archived replay will be available on Federal Signal's website shortly after the call.

About Federal Signal

Federal Signal Corporation (NYSE: FSS) builds and delivers equipment of unmatched quality that moves material, cleans infrastructure, and protects the communities where we work and live. Founded in 1901, Federal Signal is a leading global designer, manufacturer and supplier of products and total solutions that serve municipal, governmental, industrial and commercial customers. Headquartered in Oak Brook, Ill., with manufacturing facilities worldwide, the Company operates two groups: Environmental Solutions and Safety and Security Systems. For more information on Federal Signal, visit: https://www.federalsignal.com.

"Safe Harbor" Statement under the Private Securities Litigation Reform Act of 1995

This release contains unaudited financial information and various forward-looking statements as of the date hereof and we undertake no obligation to update these forward-looking statements regardless of new developments or otherwise. Statements in this release that are not historical are forward-looking statements. Such statements are subject to various risks and uncertainties that could cause actual results to vary materially from those stated. Such risks and uncertainties include but are not limited to: direct and indirect impacts of the coronavirus pandemic and the associated government response, risks and adverse economic effects associated with emerging geopolitical conflicts, product and price competition, supply chain disruptions, work stoppages, availability and pricing of raw materials, cybersecurity risks, risks associated with acquisitions such as integration of operations and achieving anticipated revenue and cost benefits, foreign currency exchange rate changes, interest rate changes, increased legal expenses and litigation results, legal and regulatory developments and other risks and uncertainties described in filings with the Securities and Exchange Commission.

Contact: Ian Hudson, Chief Financial Officer, +1-630-954-2000, ihudson@federalsignal.com

* Adjusted earnings per share ("EPS") is a non-GAAP measure, which includes certain adjustments to reported GAAP income from continuing operations and diluted EPS. In 2021, we made adjustments to exclude the impact of acquisition and integration-related (benefits) expenses, pension-related charges, coronavirus-related expenses and purchase accounting effects, where applicable. Should any similar items occur in 2022, we would expect to exclude them from the determination of adjusted EPS. However, because of the underlying uncertainty in quantifying amounts which may not yet be known, a reconciliation of our Adjusted EPS outlook to the most applicable GAAP measure is excluded based on the unreasonable efforts exception in Item 10(e)(1)(i)(B).

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

(in millions, except per share data)	Three Months Ended December 31, 2021	Three Months Ended December 31, 2020	Twelve Months Ended December 31, 2021	Twelve Months Ended December 31, 2020
Net sales	$ 301.4	$ 294.8	$1,213.2	$1,130.8
Cost of sales	234.0	218.9	924.5	837.2
Gross profit	67.4	75.9	288.7	293.6
Selling, engineering, general and administrative expenses	37.6	38.4	149.2	149.2
Amortization expense	2.7	2.4	10.9	9.6
Acquisition and integration related (benefits) expenses	(3.0)	1.3	(2.1)	2.1
Restructuring	—	—	—	1.3
Operating income	30.1	33.8	130.7	131.4
Interest expense	1.2	1.2	4.5	5.7
Pension settlement charges	10.3	—	10.3	—
Other (income) expense, net	(0.6)	(1.0)	(1.7)	1.1
Income before income taxes	19.2	33.6	117.6	124.6
Income tax (benefit) expense	(0.3)	7.6	17.0	28.5
Income from continuing operations	19.5	26.0	100.6	96.1
Gain from discontinued operations and disposal, net of tax	—	0.1	—	0.1
Net income	$ 19.5	$ 26.1	$ 100.6	$ 96.2
Basic earnings per share:				
Earnings from continuing operations	$ 0.32	$ 0.43	$ 1.65	$ 1.59
Earnings from discontinued operations and disposal, net of tax	—	0.00	—	0.00
Net earnings per share	$ 0.32	$ 0.43	$ 1.65	$ 1.59
Diluted earnings per share:				
Earnings from continuing operations	$ 0.32	$ 0.42	$ 1.63	$ 1.56
Earnings from discontinued operations and disposal, net of tax	—	0.00	—	0.00
Net earnings per share	$ 0.32	$ 0.42	$ 1.63	$ 1.56
Weighted average common shares outstanding:				
Basic	60.9	60.3	60.8	60.3
Diluted	61.8	61.6	61.9	61.7
Cash dividends declared per common share	$ 0.09	$ 0.08	$ 0.36	$ 0.32
Operating data:				
Operating margin	10.0 %	11.5 %	10.8 %	11.6 %
Adjusted EBITDA	$ 40.0	$ 47.0	$ 180.5	$ 182.2
Adjusted EBITDA margin	13.3 %	15.9 %	14.9 %	16.1 %
Total orders	$ 443.8	$ 276.1	$1,538.8	$1,047.1
Backlog	628.9	303.9	628.9	303.9
Depreciation and amortization	12.9	11.7	50.4	44.8

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(in millions, except per share data)	As of December 31, 2021	2020
ASSETS		
Current assets:		
Cash and cash equivalents	$ 40.5	$ 81.7
Accounts receivable, net of allowances for doubtful accounts of $2.1 and $2.9, respectively	136.0	127.0
Inventories	229.1	185.0
Prepaid expenses and other current assets	25.4	11.8
Total current assets	431.0	405.5
Properties and equipment, net of accumulated depreciation of $151.6 and $136.2, respectively	141.9	106.9
Rental equipment, net of accumulated depreciation of $43.8 and $43.5, respectively	108.4	113.3
Operating lease right-of-use assets	29.8	21.9
Goodwill	432.2	394.2
Intangible assets, net of accumulated amortization of $42.7 and $31.9, respectively	205.7	153.5
Deferred tax assets	8.4	9.5
Deferred charges and other long-term assets	8.7	3.8
Long-term assets of discontinued operations	—	0.2
Total assets	$ 1,366.1	$ 1,208.8
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term borrowings and finance lease obligations	$ 0.6	$ 0.2
Accounts payable	64.8	51.6
Customer deposits	21.9	13.3
Accrued liabilities:		
Compensation and withholding taxes	29.9	30.3
Current operating lease liabilities	8.8	8.2
Other current liabilities	44.4	44.7
Current liabilities of discontinued operations	—	0.1
Total current liabilities	170.4	148.4
Long-term borrowings and finance lease obligations	282.2	209.8
Long-term operating lease liabilities	22.1	15.5
Long-term pension and other post-retirement benefit liabilities	40.4	54.0
Deferred tax liabilities	53.2	53.7
Other long-term liabilities	13.8	24.5
Long-term liabilities of discontinued operations	—	0.8
Total liabilities	582.1	506.7
Stockholders' equity:		
Common stock, $1 par value per share, 90.0 shares authorized, 68.9 and 67.8 shares issued, respectively	68.9	67.8
Capital in excess of par value	256.7	240.8
Retained earnings	683.6	605.0
Treasury stock, at cost, 8.0 and 7.3 shares, respectively	(151.0)	(119.8)
Accumulated other comprehensive loss	(74.2)	(91.7)
Total stockholders' equity	784.0	702.1
Total liabilities and stockholders' equity	$ 1,366.1	$ 1,208.8

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

(in millions)	For the Years Ended December 31, 2021	2020
Operating activities:		
Net income	$ 100.6	$ 96.2
Adjustments to reconcile net income to net cash provided by operating activities:		
Net gain on discontinued operations and disposal	—	(0.1)
Depreciation and amortization	50.4	44.8
Deferred financing costs	0.3	0.3
Stock-based compensation expense	7.6	8.4
Pension settlement charges	10.3	—
Pension-related expense, net of funding	(3.8)	(6.6)
Changes in fair value of contingent consideration	(3.5)	(0.1)
Deferred income taxes, including change in valuation allowance	(6.5)	5.8
Changes in operating assets and liabilities:		
Accounts receivable	2.5	8.6
Inventories	(24.2)	2.5
Prepaid expenses and other current assets	(2.6)	(0.6)
Rental equipment	(15.9)	(16.9)
Accounts payable	6.4	(13.9)
Customer deposits	3.9	1.7
Accrued liabilities	(5.5)	(1.2)
Income taxes	(11.6)	1.3
Other	(6.6)	6.1
Net cash provided by continuing operating activities	101.8	136.3
Net cash used for discontinued operating activities	—	(0.1)
Net cash provided by operating activities	101.8	136.2
Investing activities:		
Purchases of properties and equipment	(37.4)	(29.7)
Payments for acquisition-related activity	(131.8)	(5.4)
Other, net	0.5	0.7
Net cash used for investing activities	(168.7)	(34.4)
Financing activities:		
Increase (decrease) in revolving lines of credit, net	70.5	(11.8)
Purchases of treasury stock	(15.4)	(13.7)
Redemptions of common stock to satisfy withholding taxes related to stock-based compensation	(10.7)	(9.1)
Cash dividends paid to stockholders	(22.0)	(19.4)
Proceeds from stock compensation activity	4.2	0.6
Other, net	(0.2)	—
Net cash provided by (used for) financing activities	26.4	(53.4)
Effects of foreign exchange rate changes on cash and cash equivalents	(0.7)	1.7
(Decrease) increase in cash and cash equivalents	(41.2)	50.1
Cash and cash equivalents at beginning of year	81.7	31.6
Cash and cash equivalents at end of year	$ 40.5	$ 81.7

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

GROUP RESULTS

The following tables summarize group operating results as of and for the three and twelve months ended December 31, 2021 and 2020:

Environmental Solutions Group

	Three Months Ended December 31,			Twelve Months Ended December 31,		
($ in millions)	**2021**	**2020**	**Change**	**2021**	**2020**	**Change**
Net sales	$ 245.5	$ 237.6	$ 7.9	$1,004.0	$ 915.8	$ 88.2
Operating income	24.1	33.3	(9.2)	120.5	124.3	(3.8)
Adjusted EBITDA	36.2	44.2	(8.0)	168.8	169.0	(0.2)
Operating data:						
Operating margin	9.8 %	14.0 %	(4.2)%	12.0 %	13.6 %	(1.6)%
Adjusted EBITDA margin	14.7 %	18.6 %	(3.9)%	16.8 %	18.5 %	(1.7)%
Total orders	$ 381.3	$ 224.8	$ 156.5	$1,297.3	$ 840.0	$ 457.3
Backlog	576.4	282.5	293.9	576.4	282.5	293.9
Depreciation and amortization	12.0	10.7	1.3	46.7	41.3	5.4

Safety and Security Systems Group

	Three Months Ended December 31,			Twelve Months Ended December 31,		
($ in millions)	**2021**	**2020**	**Change**	**2021**	**2020**	**Change**
Net sales	$ 55.9	$ 57.2	$ (1.3)	$ 209.2	$ 215.0	$ (5.8)
Operating income	10.1	10.3	(0.2)	32.7	35.5	(2.8)
Adjusted EBITDA	11.0	11.2	(0.2)	36.4	39.3	(2.9)
Operating data:						
Operating margin	18.1 %	18.0 %	0.1 %	15.6 %	16.5 %	(0.9)%
Adjusted EBITDA margin	19.7 %	19.6 %	0.1 %	17.4 %	18.3 %	(0.9)%
Total orders	$ 62.5	$ 51.3	$ 11.2	$ 241.5	$ 207.1	$ 34.4
Backlog	52.5	21.4	31.1	52.5	21.4	31.1
Depreciation and amortization	0.9	0.9	—	3.6	3.4	0.2

Corporate Expenses

Corporate operating expenses were $4.1 million and $9.8 million for the three months ended December 31, 2021 and 2020, respectively.

Corporate operating expenses were $22.5 million and $28.4 million for the years ended December 31, 2021 and 2020, respectively.

SEC REGULATION G NON-GAAP RECONCILIATION

The financial measures presented below are unaudited and are not in accordance with U.S. generally accepted accounting principles ("GAAP"). The non-GAAP financial information presented herein should be considered supplemental to, and not a substitute for, or superior to, financial measures calculated in accordance with GAAP. The Company has provided this supplemental information to investors, analysts, and other interested parties to enable them to perform additional analyses of operating results, to illustrate the results of operations giving effect to the non-GAAP adjustments shown in the reconciliations below, and to provide an additional measure of performance which management considers in operating the business.

Adjusted income from continuing operations and adjusted earnings per share ("Adjusted EPS"):

The Company believes that modifying its 2021 and 2020 income from continuing operations and diluted earnings per share ("EPS") provides additional measures which are representative of the Company's underlying performance and improve the comparability of results between reporting periods. Adjusted income from continuing operations and Adjusted EPS are both non-GAAP measures. During the three and twelve months ended December 31, 2021 and 2020, adjustments were made to reported GAAP income from continuing operations and diluted EPS to exclude the impact of acquisition and integration-related (benefits) expenses, pension-related charges, restructuring activity, coronavirus-related expenses, and purchase accounting effects, where applicable.

	Three Months Ended December 31,		Twelve Months Ended December 31,	
(in millions)	**2021**	**2020**	**2021**	**2020**
Income from continuing operations	$ 19.5	$ 26.0	$ 100.6	$ 96.1
Add (less):				
Income tax (benefit) expense	(0.3)	7.6	17.0	28.5
Income before income taxes	19.2	33.6	117.6	124.6
Add (less):				
Acquisition and integration-related (benefits) expenses	(3.0)	1.3	(2.1)	2.1
Pension-related charges (a)	10.3	(0.2)	10.6	2.3
Restructuring	—	—	—	1.3
Coronavirus-related expenses (b)	—	0.1	1.2	2.3
Purchase accounting effects (c)	0.2	0.2	0.7	0.7
Adjusted income before income taxes	$ 26.7	$ 35.0	$ 128.0	$ 133.3
Adjusted income tax expense (d)	(1.8)	(7.8)	(19.6)	(30.3)
Adjusted income from continuing operations	$ 24.9	$ 27.2	$ 108.4	$ 103.0

	Three Months Ended December 31,		Twelve Months Ended December 31,	
(dollars per diluted share)	**2021**	**2020**	**2021**	**2020**
EPS, as reported	$ 0.32	$ 0.42	$ 1.63	$ 1.56
Add (less):				
Income tax (benefit) expense	(0.01)	0.12	0.27	0.46
Income before income taxes	0.31	0.54	1.90	2.02
Add (less):				
Acquisition and integration-related (benefits) expenses	(0.05)	0.03	(0.03)	0.03
Pension-related charges (a)	0.17	0.00	0.17	0.04
Restructuring	—	—	—	0.02
Coronavirus-related expenses (b)	—	0.00	0.02	0.04
Purchase accounting effects (c)	0.00	0.00	0.01	0.01
Adjusted income before income taxes	$ 0.43	$ 0.57	$ 2.07	$ 2.16
Adjusted income tax expense (d)	(0.03)	(0.13)	(0.32)	(0.49)
Adjusted EPS	$ 0.40	$ 0.44	$ 1.75	$ 1.67

(a) Pension-related charges in the three and twelve months ended December 31, 2021 include $10.3 million of pension settlement charges incurred in connection with a pension annuitization project. In addition, during the twelve months ended December 31, 2021 and 2020, the Company recorded charges of $0.3 million and $2.3 million, respectively, in connection with the withdrawal from multi-employer pension plans. Such charges are included as a component of Other (income) expense, net on the Consolidated Statements of Operations.

(b) Coronavirus-related expenses in the three and twelve months ended December 31, 2021 and 2020 relate to direct expenses incurred in connection with the Company's response to the coronavirus pandemic, that are incremental to, and separable from, normal operations. Such expenses primarily relate to incremental paid time off provided to employees and costs incurred to implement enhanced workplace safety protocols.

(c) Purchase accounting effects in the three and twelve months ended December 31, 2021 and 2020 relate to adjustments to exclude the step-up in the valuation of equipment acquired in recent business combinations that was sold during the periods presented.

(d) Adjusted income tax expense for the three and twelve months ended December 31, 2021 and 2020 was recomputed after excluding the impact of acquisition and integration-related (benefits) expenses, pension-related charges, restructuring activity, coronavirus-related expenses, and purchase accounting effects, where applicable.

Adjusted EBITDA:

The Company uses adjusted EBITDA and the ratio of adjusted EBITDA to net sales ("adjusted EBITDA margin"), at both the consolidated and segment level, as additional measures which are representative of its underlying performance and to improve the comparability of results across reporting periods. We believe that investors use versions of these metrics in a similar manner. For these reasons, the Company believes that adjusted EBITDA and adjusted EBITDA margin, at both the consolidated and segment level, are meaningful metrics to investors in evaluating the Company's underlying financial performance.

Consolidated adjusted EBITDA is a non-GAAP measure that represents the total of income from continuing operations, interest expense, pension settlement charges, acquisition and integration-related (benefits) expenses, restructuring activity, coronavirus-related expenses, purchase accounting effects, other expense/income, income tax benefit/expense, and depreciation and amortization expense, as applicable. Consolidated adjusted EBITDA margin is a non-GAAP measure that represents the total of income from continuing operations, interest expense, pension settlement charges, acquisition and integration-related (benefits) expenses, restructuring activity, coronavirus-related expenses, purchase accounting effects, other expense/income, income tax benefit/expense, and depreciation and amortization expense, as applicable, divided by net sales for the applicable period(s).

Segment adjusted EBITDA is a non-GAAP measure that represents the total of segment operating income, acquisition and integration-related expenses, restructuring activity, coronavirus-related expenses, purchase accounting effects, and depreciation and amortization expense, as applicable. Segment adjusted EBITDA margin is a non-GAAP measure that represents the total of segment operating income, acquisition and integration-related expenses, restructuring activity, coronavirus-related expenses, purchase accounting effects, and depreciation and amortization expense, as applicable, divided by net sales for the applicable period(s). Segment operating income includes all revenues, costs and expenses directly related to the segment involved. In determining segment income, neither corporate nor interest expenses are included. Segment depreciation and amortization expense relates to those assets, both tangible and intangible, that are utilized by the respective segment.

Other companies may use different methods to calculate adjusted EBITDA and adjusted EBITDA margin.

Consolidated

The following table summarizes the Company's consolidated adjusted EBITDA and adjusted EBITDA margin and reconciles net income to consolidated adjusted EBITDA for the three and twelve months ended December 31, 2021 and 2020:

	Three Months Ended December 31,		Twelve Months Ended December 31,	
($ in millions)	**2021**	**2020**	**2021**	**2020**
Income from continuing operations	$ 19.5	$ 26.0	$ 100.6	$ 96.1
Add (less):				
Interest expense	1.2	1.2	4.5	5.7
Pension settlement charges	10.3	—	10.3	—
Acquisition and integration-related (benefits) expenses	(3.0)	1.3	(2.1)	2.1
Restructuring	—	—	—	1.3
Coronavirus-related expenses	—	0.1	1.2	2.3
Purchase accounting effects *	—	0.1	0.3	0.3
Other (income) expense, net	(0.6)	(1.0)	(1.7)	1.1
Income tax (benefit) expense	(0.3)	7.6	17.0	28.5
Depreciation and amortization	12.9	11.7	50.4	44.8
Consolidated adjusted EBITDA	$ 40.0	$ 47.0	$ 180.5	$ 182.2
Net sales	$ 301.4	$ 294.8	$ 1,213.2	$ 1,130.8
Consolidated adjusted EBITDA margin	13.3 %	15.9 %	14.9 %	16.1 %

** Excludes purchase accounting expense effects included within depreciation and amortization of $0.2 million and $0.1 million for the three months ended December 31, 2021 and 2020, respectively, and $0.4 million and $0.4 million for the twelve months ended December 31, 2021 and 2020, respectively*

Environmental Solutions Group

The following table summarizes the Environmental Solutions Group's adjusted EBITDA and adjusted EBITDA margin and reconciles operating income to adjusted EBITDA for the three and twelve months ended December 31, 2021 and 2020:

	Three Months Ended December 31,		Twelve Months Ended December 31,	
($ in millions)	**2021**	**2020**	**2021**	**2020**
Operating income	$ 24.1	$ 33.3	$ 120.5	$ 124.3
Add:				
Acquisition and integration-related expenses	0.1	0.1	0.3	0.4
Restructuring	—	—	—	0.7
Coronavirus-related expenses	—	—	1.0	2.0
Purchase accounting effects *	—	0.1	0.3	0.3
Depreciation and amortization	12.0	10.7	46.7	41.3
Adjusted EBITDA	$ 36.2	$ 44.2	$ 168.8	$ 169.0
Net sales	$ 245.5	$ 237.6	$ 1,004.0	$ 915.8
Adjusted EBITDA margin	14.7 %	18.6 %	16.8 %	18.5 %

** Excludes purchase accounting expense effects included within depreciation and amortization of $0.2 million and $0.1 million for the three months ended December 31, 2021 and 2020, respectively, and $0.4 million and $0.4 million for the twelve months ended December 31, 2021 and 2020, respectively*

Safety and Security Systems Group

The following table summarizes the Safety and Security Systems Group's adjusted EBITDA and adjusted EBITDA margin and reconciles operating income to adjusted EBITDA for the three and twelve months ended December 31, 2021 and 2020:

	Three Months Ended December 31,		Twelve Months Ended December 31,	
($ in millions)	**2021**	**2020**	**2021**	**2020**
Operating income	$ 10.1	$ 10.3	$ 32.7	$ 35.5
Add:				
Restructuring	—	—	—	0.3
Coronavirus-related expenses	—	—	0.1	0.1
Depreciation and amortization	0.9	0.9	3.6	3.4
Adjusted EBITDA	$ 11.0	$ 11.2	$ 36.4	$ 39.3
Net sales	$ 55.9	$ 57.2	$ 209.2	$ 215.0
Adjusted EBITDA margin	19.7 %	19.6 %	17.4 %	18.3 %