



# Disciplined Growth

Investor Presentation    March 2019

# Safe Harbor Statement

This presentation contains unaudited financial information and forward-looking statements. Statements that are not historical are forward-looking statements and may contain words such as “may”, “will”, “believe”, “expect”, “anticipate”, “intend”, “plan”, “project”, “estimate”, and “objective” or similar terminology, 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 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. Such risks and uncertainties include, but are not limited to, economic conditions, product and price competition, supplier and raw material prices, 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 under Item 1A, Risk Factors, in the Company’s Annual Report on Form 10-K and in other filings with the Securities and Exchange Commission. Such forward-looking statements are made as of the date hereof and we undertake no obligation to update these forward-looking statements regardless of new developments or otherwise.

This presentation also contains certain measures that 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, and to provide an additional measure of performance which management considers in operating the business. A reconciliation of these items to the most comparable GAAP measures is provided in our filings with the SEC and in the Appendix to this presentation.



# Federal Signal at a Glance

- Founded in 1901, joined NYSE in 1969 (“FSS”)
- Diversified industrial manufacturer of specialized environmental cleaning vehicles such as street sweepers, sewer cleaners, vacuum trucks, dump bodies and trailers; as well as safety and security products including audible and visual warning devices
- Headquartered in Oak Brook, Illinois with 14 manufacturing facilities worldwide
- Leading brands of premium, value-adding products and systems
- Fourth quarter results contributed to an outstanding year in which our businesses delivered record revenues and earnings





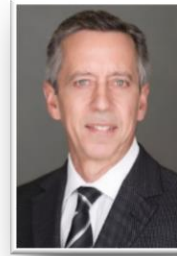
# An Experienced Leadership Team



**Jennifer Sherman**

**President and Chief Executive Officer**

- Appointed January, 2016
- Previously Chief Operating Officer, Chief Administrative Officer, Secretary and General Counsel, with operating responsibilities for the Company's Safety and Security Systems Group
- Joined Federal Signal in 1994 as Corporate Counsel



**Mark D. Weber**

**Senior Vice President and Chief Operating Officer**

- Appointed January, 2018
- Previously served as President and Chief Executive Officer of Supreme Industries, Inc.
- Prior to joining Supreme, Mr. Weber spent 17 years at Federal Signal, initially as Vice President of Operations, Elgin Sweeper, before progressing through multiple roles of increasing responsibility, serving as President of the Environmental Solutions Group for over a decade



**Ian Hudson**

**Senior Vice President and Chief Financial Officer**

- Appointed October, 2017
- Joined Federal Signal in August 2013 as Vice President and Corporate Controller
- Previously served as Director of Accounting – Latin America and Asia Pacific at Groupon, Inc.
- 13+ years public accounting experience with Ernst & Young, LLP



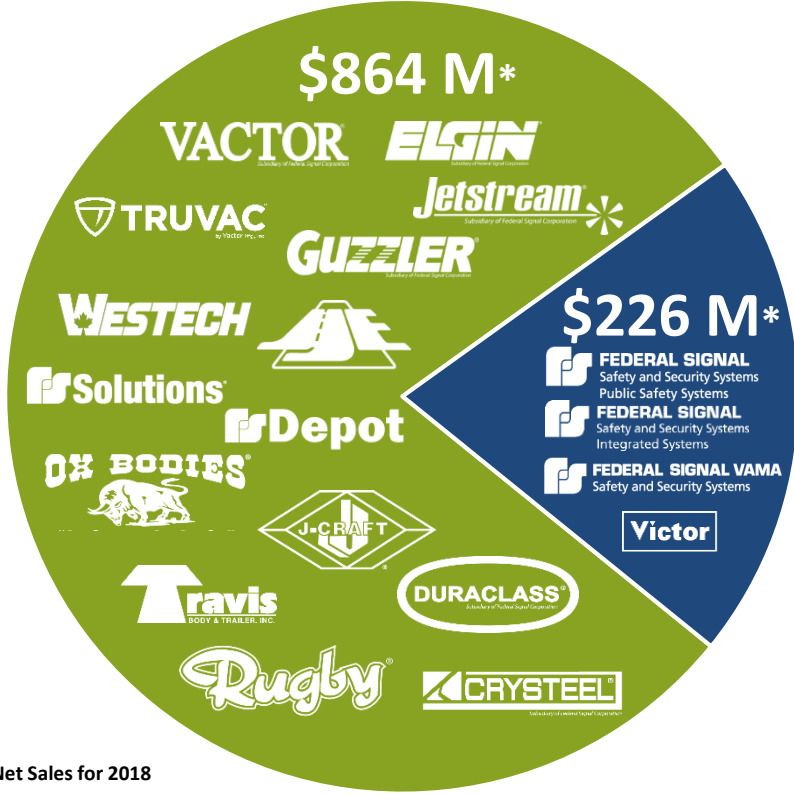
**Svetlana Vinokur**

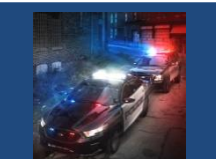
**Vice President, Treasurer and Corporate Development**

- Appointed April, 2015
- Previously served as Assistant Treasurer for Illinois Tool Works Inc., Finance Head of M&A Strategy at Mead Johnson Nutrition Company, and Senior Associate for Robert W. Baird & Company's Consumer and Industrial Investment Banking group



# Two Attractive Platforms

Segment	Environmental Solutions Group (ESG)	 <p>\$864 M*</p> <p>\$226 M*</p> <p>*Net Sales for 2018</p>	Safety and Security Systems Group (SSG)
Markets	Serves municipal, industrial, and utility markets for surface and sub-surface cleaning, safe-digging, infrastructure maintenance and material hauling		Serves the needs of municipalities and industrial verticals for audible and visual safety and security notification devices and systems
Products	<ul style="list-style-type: none"> <li>• Street Sweeping</li> <li>• Sewer Cleaning</li> <li>• Safe Digging</li> <li>• Industrial Cleaning</li> <li>• Dump Bodies and Trailers</li> </ul>		<ul style="list-style-type: none"> <li>• Lights &amp; Sirens</li> <li>• Signaling Devices</li> <li>• Warning Systems</li> </ul>



# Environmental Solutions Group (ESG)

Have successfully established a platform serving maintenance and infrastructure markets to provide customers with a comprehensive suite of products and services



Routes to Market

Rental/Aftermarket

**Depot Solutions**   
Provide parts / service / refurbishment / rental offering through the network of 20+ locations in US and Canada

Dealer Network

US Dealer Network

+   
Largest Canadian distributor of maintenance equipment to municipalities








Distribution

US Distribution Network

+   
For ESG products and other OEM's products such as snow equipment and garbage trucks

# Safety and Security Systems Group (SSG)

Serves the needs of government and industrial verticals for audible and visual safety and security notification devices

	Public Safety and Security	Signaling	Systems
Application	Lights and siren products for Police, Fire and Heavy Duty (HD) end-markets	Audible and visual signaling devices	Warning Systems Public Address General Alarming (PAGA)
Brands	 <b>FEDERAL SIGNAL</b> Safety and Security Systems  <b>FEDERAL SIGNAL VAMA</b> Safety and Security Systems	 <b>FEDERAL SIGNAL</b> Safety and Security Systems	 <b>FEDERAL SIGNAL</b> Safety and Security Systems
Products			
End Markets and Channels	Municipal Distributor	Industrial Oil & Gas Commercial Heavy Industry Manufacturing Indirect	Municipal Oil & Gas Commercial Direct
Addressable Market *	\$1.0 B	\$600 M	\$1.0 B

\* Management estimates



# Key Strategic Initiatives

Areas of  
Focus

**Safe Digging**



**Aftermarket Parts and  
Services**



**Specialty Vehicles for  
Diverse  
End-Markets**



**Audible and Visual  
Warning Devices**



Supported By

**Flexible  
Manufacturing & “ETI”  
Culture**

**New Product  
Development**

**Technology as an  
Enabler**

**Disciplined M&A**





# Strategic Initiative – Safe Digging

**Federal Signal is well positioned to establish a leading position in an emerging application for vacuum-excavation technology; increased regulation expected to accelerate growth**

## What is it?

- Vacuum excavation or “Safe Digging” involves the use of pressurized air or water (“hydro-excavation”) to dig (coupled with a vacuum system) as an alternative to the use of traditional equipment such as backhoes and mechanical excavators
- Acceptance of safe-digging applications continues to improve significantly over the last decade
- Application has been widely accepted in Canada; US is behind but great early indicators – 16 states now include vacuum excavation as part of “safe excavation practices”

## Why is it Attractive?

- In many circumstances, vacuum excavation is a safer and more productive means for digging (in comparison to traditional excavation)
- Significantly minimizes chances of damage to underground infrastructure during the digging process
- Less intrusive to the surrounding site at point of digging
- Provides opportunity for the use of our broad range of offerings in new and emerging end markets beyond oil and gas

## Why Federal Signal?

- Sole manufacturer of complete range of truck-mounted safe-digging equipment, with applications across a number of end-markets
- 30 year track record of manufacturing leading vacuum-excavation products
- Widest service and support network for vacuum-excavation products
- Best-in-class payload for Ontario market
- Dedicated and experienced sales organization in place to support initiative
- ~\$60M of incremental vacuum truck orders in 2018

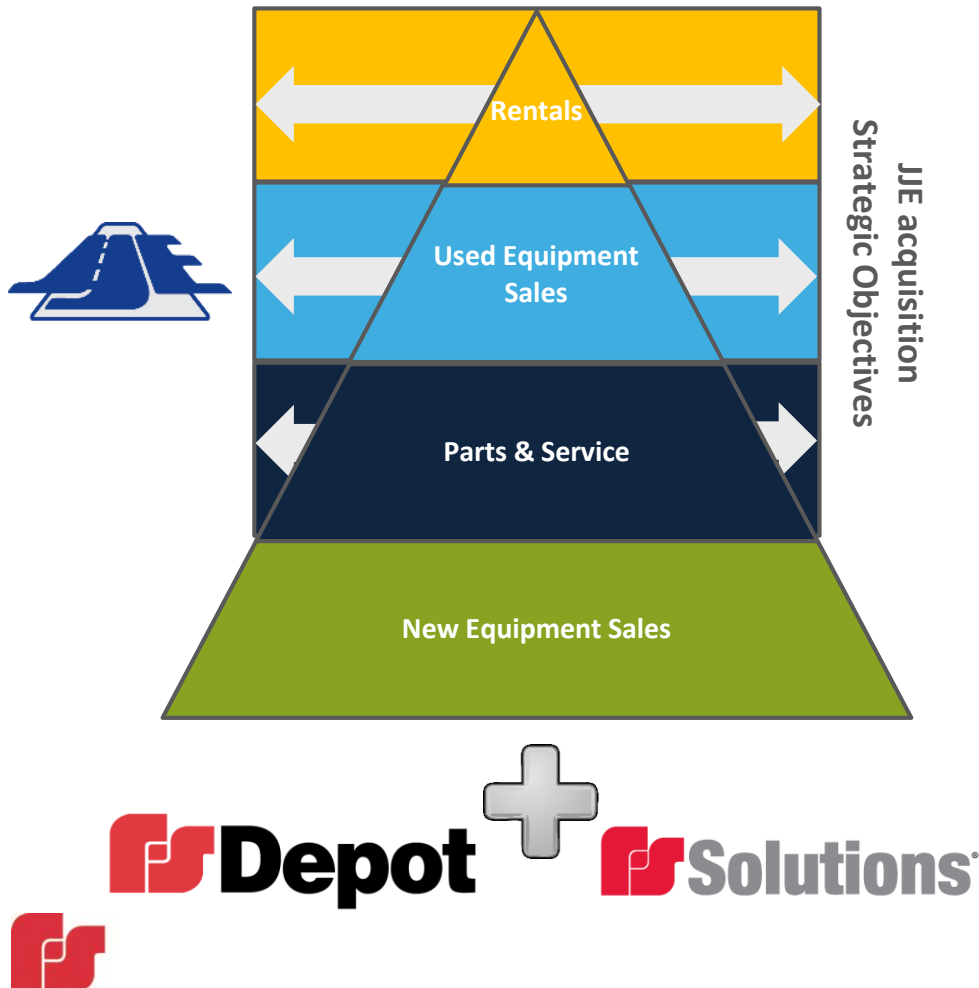


**Recently announced plans to invest up to \$25 M to expand Streator, IL manufacturing facility; expected to increase production capacity by ~40%, with completion targeted by end of 2019**



# Strategic Initiative – Aftermarket Parts & Services

Optimizing platform to transform Federal Signal's aftermarket business into an industry leader of parts and services to the infrastructure maintenance and material hauling markets



- Unified platform to serve municipal and industrial customers across all ESG businesses
- Undivided focus on growing and optimizing Federal Signal's non-whole goods capabilities
- Areas of focus:
  - E-commerce capability development
  - Joint procurement initiatives to optimize input costs
  - Pricing harmonization across customers
  - Alternative ownership structures – rental and used equipment
- ESG's rental income in 2018 increased by over 30% from 2017, while total aftermarket revenues increased by \$20 M, or 10%

# Strategic Initiative – Audible & Visual Warning Devices

SSG businesses focused on optimizing their existing channels and expanding product offerings



**Optimize Channel**

- Pricing / Promotion Strategy
- E-commerce platform development
- Comprehensive customer service solution



**Product Portfolio Expansion**

- “Allegiant” – low cost lightbar to expand addressable market
- “Pathfinder” siren – superior product features at a lower price point
- Automatic License Plate Recognition (“ALPR”) product introduction



**Smart Products**

- CommanderOne – monetization of existing installed base for outdoor warning products
- Smart peripheral lights for police and fire markets
- Multifunction, intelligent and connected industrial signaling products

# Eighty-Twenty Improvement (“ETI”) Culture

## Material Cost Reduction

- Waste reduction
- SKU rationalization
- Savings through volume aggregation
- Sourcing optimization



## Manufacturing Efficiency

- Lean manufacturing focus
- Throughput flexibility
- Labor pool management
- Flexible manufacturing model
- Recent investments in machinery expected to result in productivity improvements

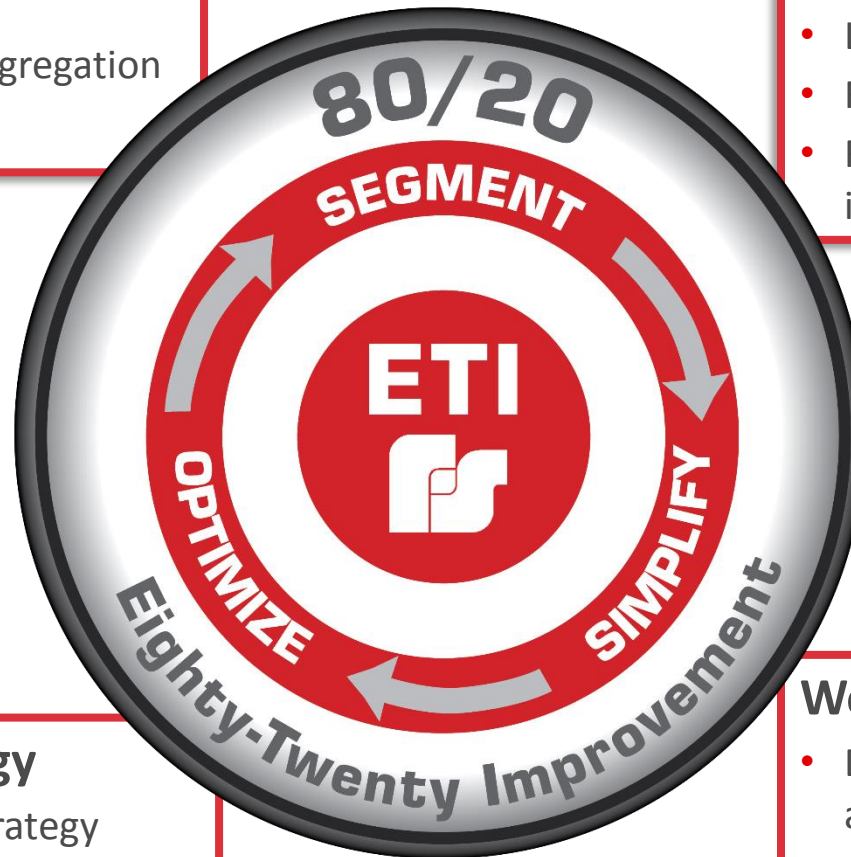


## Pricing Strategy

- Parts pricing strategy
- Effective “options” pricing

## Working Capital Optimization

- Derived benefits from manufacturing efficiencies and SKU rationalization
- Improved cycle times to drive inventory reductions





# New Product Development (“NPD”)

## Customer Focused Process

- Complete change in approach to innovation, starting in 2013
- Current innovation organization has had a number of successes, including the record-breaking launch of the ParaDIGm vacuum excavator
  - Most successful new product launch in over a decade
  - Initial market demand exceeding expectations
  - Named a 2016 Chicago Innovation Awards Winner
- In 2018, announced acceleration of innovation initiatives to drive long-term organic growth; targeting long-term organic revenue growth of a couple percentage points above GDP



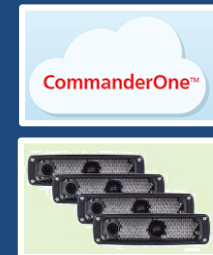
## Environmental Solutions Group (ESG)

- Vehicle-based monitoring and reporting solutions
- Sewer Cleaner productivity improvements such as new boom design and upgraded control panel
- Enhanced Street Sweeper Models
- All-New HXX Hydro-Excavator with improved weight distribution
- Jetstream portfolio of attachments



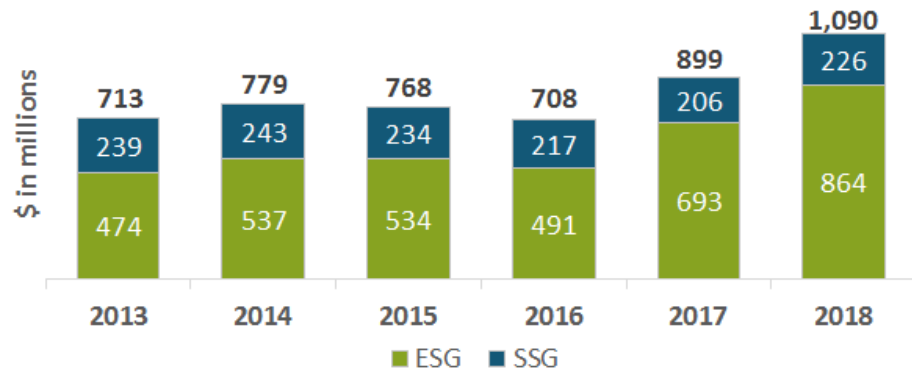
## Safety and Security Systems Group (SSG)

- Automatic License Plate Recognition (ALPR) Systems
- CommanderOne Direct Messaging (SMS/Phone)
- IP-Enabled Warning Devices
- Next-Generation PAGA
- Optimized Light Bar Production
- Global Series Signaling Devices
- Allegiant Police Light Bar

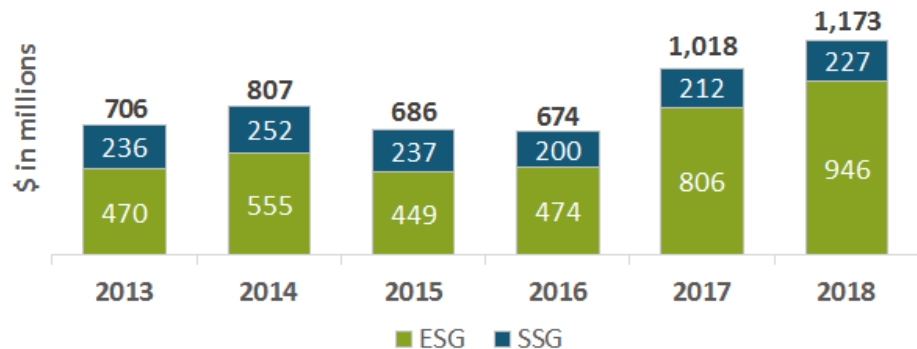


# Profitable Growth Execution and Strong Financial Position

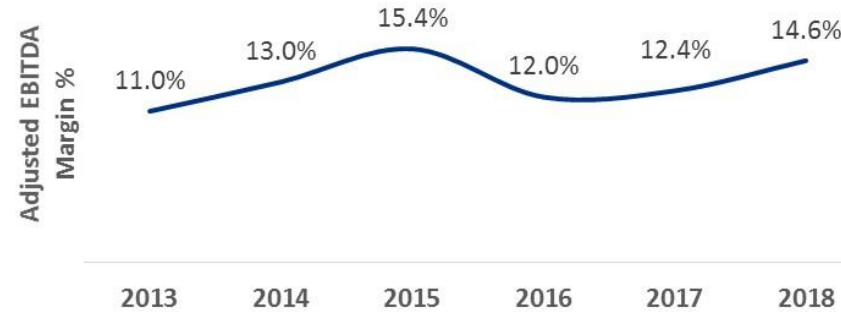
## Net Sales



## Orders



## Adjusted EBITDA Margin\*\* (Consolidated)



### Target EBITDA Margin ranges<sup>1</sup>

- ESG: 15% - 18%
- SSG: 15% - 17%
- Consolidated: 12% - 16%
  - Historical EBITDA margins and targets place Federal Signal in the top tier of its peer group of specialty vehicle manufacturers

(1) Underlying assumptions: Absence of extraordinary factors affecting demand from end-markets; No unusual hearing loss litigation expenses

## 2018 Highlights:

- Record year in revenues and earnings
- Net sales of \$1.1B, up \$191M, or 21%, from 2017
- Adjusted EBITDA\* of \$160.5M, up 41%, from \$113.5M in 2017
- Improved Adjusted EBITDA margin\* of 14.7%, up from 12.6% in 2017, towards high end of target range
- Adjusted EPS\* of \$1.43, up 68% from \$0.85 in 2017
- Cash from operations of \$93M, up 26% from 2017; facilitated debt pay down of \$62M, cash dividends of \$18.7M and share repurchases of \$1.2M
- Total orders exceeded \$1.1B, up \$155M or 15%, compared to 2017
- Year-end backlog of \$338M, up \$80M, or 31%, from last year
- Credit line availability of \$179M at end of year, with ability to increase by additional \$75M for acquisitions



\*Adjusted EBITDA, Adjusted EBITDA Margin and Adjusted EPS are non-GAAP measures. See Appendix II for additional information, including reconciliation to GAAP measures.

\*\*Revised to exclude deferred gain recognition resulting from adoption of new accounting standard. See Appendix II for additional information, including reconciliation to GAAP measures.

# Disciplined M&A

**Target companies that accelerate our current strategic initiatives or provide a platform for growth in adjacent markets or new geographies**

## Business Characteristics

- Niche market leader (product, geography, end-market)
- Sustainable competitive advantage
- Deep domain expertise (technology, application, manufacturing)
- Strong management team
- Leverages our distribution and manufacturing capabilities

## Financial Characteristics

- Solid growth potential
- Through-the-cycle margins comparable to or higher than our target margins
- Ideally, identifiable synergies and recurring revenue opportunities
- Return on capital greater than our cost of capital, appropriately adjusted for risk



# Priority Driven Long-Term Capital Allocation

## Reinvest in the Business

- Organic projects leverage existing assets, generally require limited cash investment
- Innovation R&D efforts target new and updated products
- Generally, funded within operating results, cash flow and normal cap ex
- In addition to annual cap ex of ~\$15M - \$20M, anticipating up to \$25M of expenditure in 2019 associated with the Vactor plant expansion

## Acquisitions

- Completed acquisitions of TBEI for \$270M (Q2 2017) and JJE for C\$126M (Q2 2016)
- Focused primarily on acquisitions that fit closely within our existing products and services, manufacturing competencies, channels and customers
- In 2019, expecting to pay up to C\$18M associated with JJE earnout and deferred payment

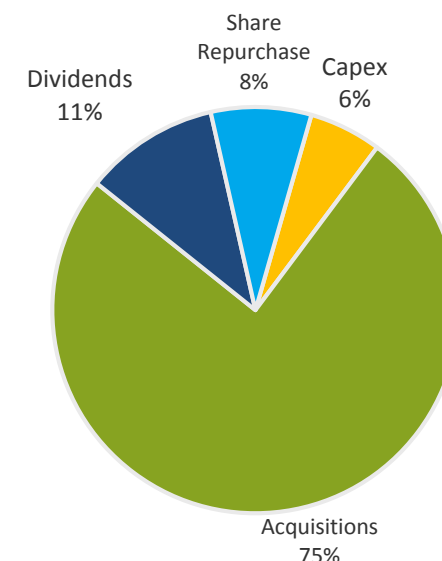
## Dividend Policy

- Provide a competitive dividend yield while funding business growth
- At \$0.08 per share, dividend yield is ~1.3%
- Paid dividends of \$18.7M in 2018

## Share Repurchases

- Opportunistic share buybacks as a return of cash to our shareholders
- Spent \$1.2M in 2018 (average price of \$19.79/share); no repurchases in 2017; spent \$37.8M in 2016 (average price of \$12.75/share) and \$10.6M in 2015 (average price of \$14.62/share)
- Remaining repurchase authorization is \$30M

## Cash Deployment (2016-18)<sup>1</sup>



1) Chart depicts use of cash for each category, relative to the total cash used on all four activities, for the cumulative period 2016-18; excludes investment in rental fleet, which is reported as part of operating cash flows





# Headwinds and Tailwinds in 2019

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- ▲ Strong backlog, particularly for sewer cleaners and vacuum trucks, providing good visibility into first half of 2019
- ▲ Amount of used equipment in end markets continues to be at “normal” levels
- ▲ Industrial demand remains healthy, particularly from rental customers
- ▲ Steady municipal markets
- ▲ Continued expansion of safe-digging technology into new end-markets
- ▲ Focus on new product development; number of planned product launches within ESG
- ▲ Ongoing focus on Eighty-Two Initiatives (“ETI”) to drive operational improvements
- ▲ Acquisitions remain on track to deliver on previously-announced accretion estimates
- ▲ Active M&A pipeline
- ▲ Strong financial position
- ▶ Chassis availability at certain TBEI locations being monitored
- ▶ Expect commodity costs in 1H 2019 to be higher than 1H 2018; continuing to take necessary actions against commodity cost increases
- ▶ Impact of Ford model year changeover may cause temporary slow down in number of police cars, partially offset by ongoing new product launches at SSG
- ▼ Continue to vigorously defend hearing loss litigation; could result in higher legal costs
- ▼ New lease accounting standard will change recognition of deferred gain



# 2019 Outlook

## Adjusted EPS\* ranging from \$1.48 to \$1.60

*At the midpoint, represents increase of ~9% over record 2018\**

### Key Assumptions

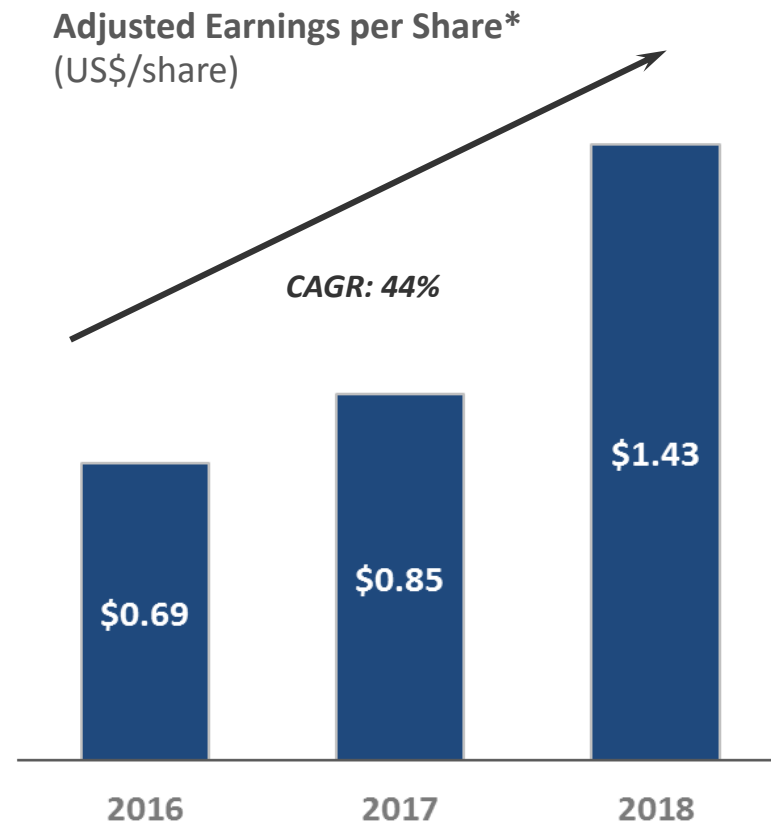
- Adjustments to include acquisition-related items
- Depreciation and amortization expense to increase by ~\$5M to \$6M
- Not expecting to maintain same level of debt repayment as in 2018:
  - *Vactor plant expansion of up to \$25M*
  - *Other capital expenditures of between \$15M and \$20M*
  - *JJE earnout payment due in Q2 2019*
- Interest expense of ~4%
- Increase in pension expense (non-operating) of \$0.5M
- Effective income tax rate of ~25%-26%
- Expect Q1 earnings to represent ~16% to 17% of full-year earnings

\* Adjusted earnings per share ("EPS") is a non-GAAP measure, which includes certain adjustments to reported GAAP net income and diluted EPS. In 2018, we made adjustments to exclude the impact of acquisition and integration-related expenses, purchase accounting effects, hearing loss settlement charges and special tax items, where applicable. Should any similar items occur in 2019, 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). In addition, to facilitate comparisons with prior periods, when reporting our interim and annual results in 2019, we will be adjusting our previously issued non-GAAP results for 2018 to exclude the recognition of a deferred gain, which will no longer occur in 2019 following the adoption of the new lease accounting standards. On this basis, Adjusted EPS for 2018 would have been \$1.41. See Appendix for reconciliation of GAAP EPS for 2018 to Adjusted EPS for 2018, as initially presented, and to the revised Adjusted EPS for 2018 (excluding the deferred gain recognition).



# Positioned for Long-Term Growth

With continued focus on organic growth and M&A, and margin performance above that of many of our peers, our financial framework aims to create long-term shareholder value



Long-Term Organic  
Revenue Growth

(Couple of % points > GDP)



Value-Added  
Acquisitions

High Single Digit Revenue Growth

EBITDA Margin  
Targets:

ESG: 15-18%  
SSG: 15-17%  
Consolidated: 12-16%

Cash Conversion:  
~100% of net income

ROIC > Cost of  
Capital

\* Adjusted earnings per share ("EPS") is a non-GAAP measure. See footnote on page 18.



# Appendix

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- I. Segments Overview
- II. Non-GAAP Reconciliations
- III. Executive Compensation
- IV. Investor Information





# Appendix I: ESG Products





# Appendix I: ESG Products (continued)

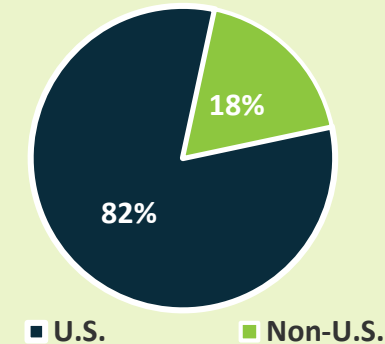


# Appendix I: ESG - Market Influencers & Where We Play

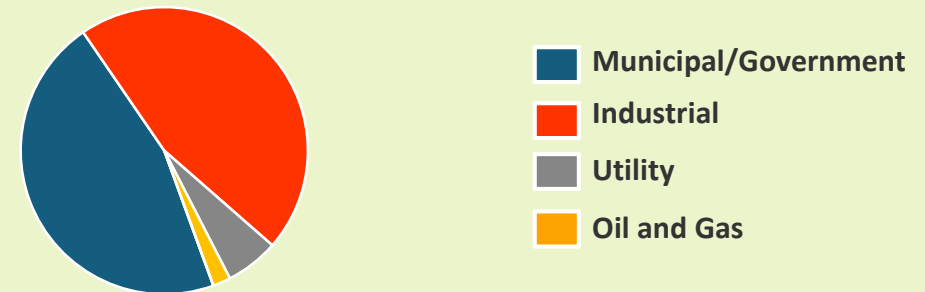
## Market Dynamics

- Economic recovery supports state and local funding for sweepers and sewer cleaners
  - Funding for sewer cleaners through water tax revenues adds further stability
- Continued recovery in oil & gas markets benefiting hydro-excavation and industrial cleaning business
- Aging infrastructure, pipeline expansion, and increasing urbanization support long-term demand for safe digging products, dump bodies and trailers
- Healthy housing market and improving industrial activity supports growth opportunities for dump bodies and trailers
- Upsides from prospective infrastructure spending, if any approved
- Tracking new housing starts, Class 8 truck chassis, municipal spending, oil rig counts, and overall industrial activity

2018 Sales by Geography



2018 End Markets by Users



Source: Management Estimates





# Appendix I: SSG Products



**FEDERAL SIGNAL**  
Safety and Security Systems  
Public Safety Systems



**FEDERAL SIGNAL**  
Safety and Security Systems  
Integrated Systems



**FEDERAL SIGNAL VAMA**  
Safety and Security Systems

**Victor**



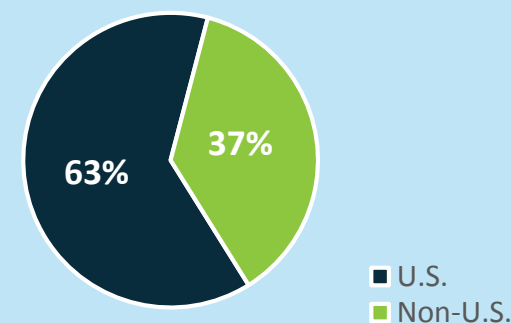


# Appendix I: SSG - Market Influencers & Where We Play

## Market Dynamics

- Increased national focus on issues of public safety and law enforcement, and rising public expectations for transparency and accountability driving demand for safety and security products
- Recovery in oil & gas will benefit signaling products and systems applications for hazardous areas
- Rising occurrence of natural and man-made disasters
- Shift in customer preference towards inter-connected platforms expected to drive demand for security systems integration
- Tracking police data that indicates the number of new police vehicle registrations; 2019 demand expected to be temporarily impacted by Ford's model year changeover

2018 Sales by Geography



2018 End Markets by Users



Source: Management Estimates



## Appendix II: Impact of Lease Accounting Change on Non-GAAP Measures

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- Effective January 1, 2019, the Company will adopt the new lease accounting standard, which will result in the recognition of right-of-use assets and lease liabilities on the Company's Consolidated Balance Sheet and will result in a change to the Company's recognition of the deferred gain associated with historical sale lease-back transactions. The deferred gain, which initially totaled \$29.0 M, has been recognized through the Company's Consolidated Statement of Operations on a straight-line basis over the 15-year life of the respective leases. As a result, approximately \$1.9 M of the deferred gain has been recognized each year since 2008, of which approximately \$1.1 M and \$0.8 M has been recognized within the ESG and SSG, respectively
- Effective in 2019, the Company will no longer recognize any portion of the gain through the Consolidated Statement of Operations, and will recognize the remaining deferred gain balance, net of the related deferred tax asset, as a cumulative effect adjustment to opening retained earnings. To facilitate comparisons with prior periods, when reporting our interim and annual non-GAAP results in 2019, we will be adjusting our previously issued non-GAAP results for 2018 and earlier years to exclude the recognition of this deferred gain, which will no longer occur following the adoption of the new lease accounting standards
- We have included a reconciliation of our GAAP EPS for 2018 to Adjusted EPS for 2018, as initially presented, and to the revised Adjusted EPS for 2018 (excluding the deferred gain recognition) on page 27
- In addition, we have included a reconciliation of our GAAP income from continuing operations for the years ended December 31, 2013 through 2018 to Adjusted EBITDA, as initially presented, and to the revised Adjusted EBITDA (excluding the deferred gain recognition) on page 28



# Appendix II: Impact of Lease Accounting Change on 2018 Adjusted EPS

(\$ in millions)		Year Ended December 31, 2018
Income from continuing operations	\$	93.7
<u>Add:</u>		
Income tax (benefit) expense		17.9
Income before income taxes		111.6
<u>Add:</u>		
Acquisition and integration-related expenses		1.5
Purchase accounting effects (1)		1.2
Hearing loss settlement charges		0.4
Adjusted income before income taxes		114.7
Adjusted income tax expense (2)		(27.2)
<b>Adjusted net income from continuing operations (as reported)</b>	<b>\$</b>	<b>87.5</b>
<u>Less:</u>		
Deferred gain recognition, net of tax expense of \$0.4 M		(1.5)
<b>Adjusted net income from continuing operations (revised)</b>	<b>\$</b>	<b>86.0</b>
Diluted EPS from continuing operations	\$	1.53
<b>Adjusted diluted EPS from continuing operations (as reported)</b>	<b>\$</b>	<b>1.43</b>
<b>Adjusted diluted EPS from continuing operations (revised)</b>	<b>\$</b>	<b>1.41</b>

(1) Purchase accounting effects relate to adjustments to exclude the step-up in the valuation of equipment acquired in connection with recent acquisitions that was sold subsequent to the acquisition dates in the year ended December 31, 2018, as well as to exclude the depreciation of the step-up in the valuation of the rental fleet acquired in the JJE transaction.

(2) Adjusted income tax expense for the year ended December 31, 2018 excludes an \$8.6 million net tax benefit associated with tax planning strategies. Adjusted income tax expense for the year ended December 31, 2018 also excludes the tax effects of acquisition and integration-related expenses, purchase accounting effects and hearing loss settlement charges, where applicable.



# Appendix II: Impact of Lease Accounting Change on 2018 Adjusted EBITDA/Margin

The Company uses 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. 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. Consolidated adjusted EBITDA is a non-GAAP measure that represents the total of income from continuing operations, interest expense, pension settlement charges, hearing loss settlement charges, debt settlement charges, acquisition and integration-related expenses, restructuring activity, executive severance costs, purchase accounting effects, other expense/income, income tax expense (benefit), and depreciation and amortization expense. Consolidated adjusted EBITDA margin is a non-GAAP measure that represents the total of income from continuing operations, interest expense, pension settlement charges, hearing loss settlement charges, debt settlement charges, acquisition and integration-related expenses, restructuring activity, executive severance costs, purchase accounting effects, other expense/income, income tax expense (benefit), and depreciation and amortization expense divided by net sales for the applicable period(s). Other companies may use different methods to calculate adjusted EBITDA and adjusted EBITDA margin. The following table summarizes the Company's consolidated adjusted EBITDA and adjusted EBITDA margin and reconciles income from continuing operations to consolidated adjusted EBITDA for the trailing twelve month periods ended December 31,:

(\$ in millions)	2013	2014	2015	2016	2017	2018
<b>Total Sales, as reported</b>	<b>\$712.9</b>	<b>\$779.1</b>	<b>\$768.0</b>	<b>\$707.9</b>	<b>\$898.5</b>	<b>\$1,089.5</b>
Income from continuing operations	152.5	59.7	65.8	39.4	60.5	93.7
Add:						
Interest expense	8.9	3.6	2.3	1.9	7.3	9.3
Pension settlement charges	-	-	-	-	6.1	-
Hearing loss settlement charges	-	-	-	-	1.5	0.4
Debt settlement charges	8.7	-	-	0.3	-	-
Acquisition and integration-related expenses	-	-	-	1.4	2.7	1.5
Restructuring	0.7	-	0.4	1.7	0.6	-
Executive Severance Costs	-	-	-	-	0.7	-
Purchase accounting effects*	-	-	-	3.6	4.4	0.7
Other (income) expense, net	6.8	5.0	5.2	1.8	(0.8)	0.6
Income tax (benefit) expense	(108.6)	23.7	34.1	17.4	0.5	17.9
Depreciation and amortization	11.0	11.5	12.3	19.1	30.0	36.4
<b>Adjusted EBITDA</b>	<b>\$ 80.0</b>	<b>\$103.5</b>	<b>\$120.1</b>	<b>\$ 86.6</b>	<b>\$113.5</b>	<b>\$ 160.5</b>
Less: Deferred Gain Recognition**	(1.9)	(1.9)	(1.9)	(1.9)	(2.0)	(1.9)
<b>Adjusted EBITDA, as revised</b>	<b>\$ 78.1</b>	<b>\$101.6</b>	<b>\$118.2</b>	<b>\$ 84.7</b>	<b>\$111.5</b>	<b>\$ 158.6</b>
<b>Adjusted EBITDA Margin</b>	<b>11.2%</b>	<b>13.3%</b>	<b>15.6%</b>	<b>12.2%</b>	<b>12.6%</b>	<b>14.7%</b>
<b>Adjusted EBITDA Margin, as revised</b>	<b>11.0%</b>	<b>13.0%</b>	<b>15.4%</b>	<b>12.0%</b>	<b>12.4%</b>	<b>14.6%</b>

\*Excludes purchase accounting effects reflected in depreciation and amortization of \$0.3 M, \$0.4 M, and \$0.5 M for 2016, 2017 and 2018, respectively.

\*\*Adjustment to exclude recognition of deferred gain, which will not continue upon adoption of new lease accounting standard in 2019. See page 26 for additional information.



# Appendix III: Executive Compensation Aligned with Long-term Objectives

- The Company continues to focus on executing against a number of key long-term objectives, which include the following:
  - Creating disciplined growth
  - Improving manufacturing efficiencies and costs
  - Leveraging invested capital
  - Diversifying our customer base

One Year	Three Years	Ten Years
<b>Cash Bonus (STIP)</b> <ul style="list-style-type: none"> <li>Earnings (55%)</li> <li>EBITDA Margin (15%)</li> <li>Individual Objectives (30%)</li> </ul>		<b>Short-Term</b> <u>Annual Goals</u> <ol style="list-style-type: none"> <li>Profitability and growth</li> <li>Market share</li> </ol>
<b>Performance Share Units</b> <ul style="list-style-type: none"> <li>EPS (75%)</li> <li>Return on Invested Capital (25%)</li> </ul>		<b>Long-Term</b> <u>3-year Performance and Vesting Periods</u> <ol style="list-style-type: none"> <li>Profitability and growth</li> <li>Shareholder value creation</li> <li>Facilitates stock ownership</li> <li>Executive retention</li> </ol>
<b>Restricted Stock Awards</b>		<b>Long-Term</b> <u>3-year Cliff Vesting</u> <ol style="list-style-type: none"> <li>Executive recruitment</li> <li>Executive retention</li> <li>Facilitates stock ownership</li> </ol>
<b>Share Price Appreciation</b> <ul style="list-style-type: none"> <li>Stock Options</li> </ul>		<b>Longer-Term</b> <u>3-year Ratable Vesting Period and 10 Year Exercise Period</u> <ol style="list-style-type: none"> <li>Shareholder value creation</li> <li>Facilitates stock ownership</li> <li>Executive retention</li> </ol>





# Appendix IV: Investor Information

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**Stock Ticker:** NYSE:FSS

**Company website:** [federalsignal.com/investors](https://federalsignal.com/investors)

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