

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

**FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

VSE CORPORATION

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

54-0649263
(I.R.S. Employer
Identification No.)

3361 Enterprise Way
Miramar, Florida 33025
Phone: (954) 430-6600

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Tobi Lebowitz
Chief Legal Officer and Corporate Secretary
VSE Corporation
3361 Enterprise Way,
Miramar, Florida 33025
Phone: (954) 430-6600

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Lorne S. Cantor
Joel T. May
Jones Day
1221 Peachtree Street N.E.
Suite 400
Atlanta, Georgia 30361
Phone: (404) 521-3939

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Non-accelerated filer

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 7(a)(2)(B) of the Securities Act.

2,615,752 Shares



Common Stock

This prospectus relates to the offer and sale from time to time by the selling stockholder identified herein of up to an aggregate of 2,615,752 shares (the "Shares") of common stock, par value \$0.05 per share (the "common stock"), of VSE Corporation, a Delaware corporation ("we," "us," "our" or the "Company").

The Shares being offered will be issued to the selling stockholder by us in a private placement in connection with the PAG Acquisition (as defined herein) pursuant to the Purchase Agreement (as defined herein) and the Exchange Agreement (as defined herein). The PAG Acquisition was completed on May 5, 2026 (the "Closing Date"). The Shares covered by this prospectus consist of (i) 1,415,752 Shares issuable upon exchange of shares of Class B common stock, par value \$0.05 per share, of the Rollover Purchaser (as defined herein) (the "Consideration Shares"); and (ii) up to 1,200,000 Shares issuable pursuant to a contingent earnout payment (the "Earnout Shares").

We are not selling any Shares under this prospectus, and we will not receive any of the proceeds from the sale of Shares by the selling stockholder. The selling stockholder (which term as used herein includes its transferees or other successors in interest) may sell the Shares described in this prospectus through public or private transactions at market prices prevailing at the time of sale or at negotiated prices. **We provide more information about how the selling stockholder may sell its Shares in the section of this prospectus entitled "Plan of Distribution" on page 12.**

Our common stock is listed on The Nasdaq Global Select Market ("Nasdaq") under the symbol "VSEC." On May 6, 2026, the closing price of our common stock on Nasdaq was \$207.45 per share.

INVESTING IN OUR COMMON STOCK INVOLVES RISKS. YOU SHOULD CAREFULLY CONSIDER THE RISK FACTORS SET FORTH OR INCORPORATED BY REFERENCE INTO THIS PROSPECTUS, ANY APPLICABLE PROSPECTUS SUPPLEMENT AND OUR PERIODIC REPORTS FILED FROM TIME TO TIME WITH THE SECURITIES AND EXCHANGE COMMISSION, AS DESCRIBED UNDER THE SECTION ENTITLED "[RISK FACTORS](#)" ON PAGE 7 OF THIS PROSPECTUS, BEFORE MAKING ANY DECISION WHETHER TO INVEST IN OUR COMMON STOCK.

Neither the Securities and Exchange Commission (the "SEC") nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is May 7, 2026.

TABLE OF CONTENTS

	Page
<u>ABOUT THIS PROSPECTUS</u>	1
<u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	2
<u>SUMMARY</u>	4
<u>RISK FACTORS</u>	7
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	8
<u>INFORMATION WE INCORPORATE BY REFERENCE</u>	9
<u>USE OF PROCEEDS</u>	10
<u>SELLING STOCKHOLDER</u>	11
<u>PLAN OF DISTRIBUTION</u>	12
<u>LEGAL MATTERS</u>	15
<u>EXPERTS</u>	15

ABOUT THIS PROSPECTUS

This prospectus is part of an automatic registration statement that we filed with the SEC as a “well-known seasoned issuer” as defined in Rule 405 under the Securities Act of 1933, as amended (the “Securities Act”), using a “shelf” registration process. Under this process, the selling stockholder named in this prospectus or in one or more supplements to this prospectus may sell Shares from time to time. Each time the selling stockholder named herein sells Shares under the registration statement of which this prospectus is a part, the selling stockholder will provide a copy of this prospectus and any applicable prospectus supplement, as required by law. Any applicable prospectus supplement may add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and any applicable prospectus supplement, you should rely on the prospectus supplement. Before purchasing any Shares, you should carefully read both this prospectus and any applicable prospectus supplement, together with the additional information described under the headings “Where You Can Find More Information” and “Information We Incorporate By Reference.”

The selling stockholder may offer and sell Shares described in this prospectus directly to purchasers, through agents selected by the selling stockholder, or to or through broker-dealers. A prospectus supplement, if required, may describe the terms of the plan of distribution and set forth the names of any agents or broker-dealers involved in the sale of Shares offered hereby. See “Plan of Distribution.”

We have not authorized, and the selling stockholder has not authorized, any other person to provide you with different or additional information. If anyone provides you with different or additional information, you should not rely on it. If you are in a jurisdiction where offers to sell, or solicitations of offers to purchase, the securities offered hereby are unlawful, or if you are a person to whom it is unlawful to direct these types of activities, then the offer presented hereby does not extend to you. You should assume that the information appearing in this prospectus and any applicable prospectus supplement to this prospectus is accurate as of the date on its respective cover, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates.

References in this prospectus to the terms “we,” “us” or “the Company” or other similar terms mean VSE Corporation and its consolidated subsidiaries, unless we state otherwise or the context indicates otherwise.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents incorporated by reference, contains, and any prospectus supplement may contain, statements that, to the extent they are not recitations of historical fact, constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). All such statements are intended to be covered by the safe harbor provisions for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995 and this statement is included for purposes of such safe harbor provisions.

“Forward-looking” statements, as such term is defined by the SEC in its rules, regulations and releases, represent our expectations or beliefs, including, but not limited to, statements concerning our operations, economic performance, financial condition, growth and acquisition strategies, investments and future operational plans. Without limiting the generality of the foregoing, words such as “may,” “will,” “expect,” “believe,” “anticipate,” “intend,” “forecast,” “seek,” “plan,” “predict,” “project,” “could,” “estimate,” “might,” “continue,” “seeking” or the negative or other variations thereof or comparable terminology are intended to identify forward-looking statements.

These statements speak only as of the date of this prospectus or the date of the document incorporated by reference, as applicable, and we undertake no ongoing obligation, other than that imposed by law, to update these statements. These statements appear in a number of places in this prospectus, including the documents incorporated by reference, and relate to, among other things, our intent, belief or current expectations with respect to: our future financial condition, results of operations or prospects; our business and growth strategies; and our financing plans and forecasts. You are cautioned that any such forward-looking statements are not guarantees of future performance and involve significant risks and uncertainties, certain of which are beyond our control, and that actual results may differ materially from those contained in or implied by the forward-looking statements as a result of various factors, some of which are unknown, including, without limitation, risks related to:

- the performance of the aviation aftermarket;
- global economic and political conditions;
- supply chain delays and disruptions;
- competition from existing and new competitors;
- losses related to investments in inventory and facilities;
- interruptions in our operations;
- challenges related to workforce management or any failure to attract or retain a skilled workforce;
- our ability to realize the expected strategic benefits and cost synergies from the PAG Acquisition, after taking into account any business disruption, maintenance of customer, employee, or supplier relationships, management distraction during the integration process or other factors beyond our control;
- the accuracy of our assumptions relating to the PAG Acquisition;
- the significant expenses that have been incurred and will be incurred in connection with the PAG Acquisition;
- our ability to successfully integrate and achieve the strategic and other objectives, including any expected synergies, relating to recently completed acquisitions, including the PAG Acquisition;
- access to and the performance of third-party package delivery companies;
- prolonged periods of inflation and our ability to mitigate the impact thereof;

-
- future business conditions resulting in impairments;
 - our ability to successfully divest businesses and to transition facilities in connection therewith;
 - our work on large government programs;
 - health epidemics, pandemics and similar outbreaks;
 - compliance with government rules and regulations, including tariffs and environmental and pollution risk;
 - our ability to mitigate the impacts of increased costs related to tariffs;
 - litigation and legal actions arising from our operations;
 - technology and cybersecurity threats and incidents;
 - our outstanding indebtedness, including the increase in indebtedness upon completion of the PAG Acquisition;
 - market volatility in the debt and equity capital markets;
 - our ability to continue to pay dividends at current levels or at all;
 - our published financial guidance;
 - restrictions and limitations that may stem from financing arrangements we enter into or assume in the future; and
 - the other factors identified in our reports filed or expected to be filed with the SEC, and incorporated by reference herein, including our Annual Report on Form 10-K for the year ended December 31, 2025.

You are advised, however, to consult any further disclosures we make on related subjects in our periodic reports on Forms 10-K, 10-Q or 8-K filed with the SEC and incorporated by reference herein. Any document incorporated by reference in this prospectus may also contain statistical data and estimates we obtained from industry publications and reports generated by third parties. Although we believe that the publications and reports are reliable, we have not independently verified their data.

SUMMARY

This summary highlights certain information appearing elsewhere in this prospectus and in the documents we incorporate by reference into this prospectus. The summary is not complete and does not contain all of the information that you should consider before investing in our Shares. After you read this summary, you should read and consider carefully the entire prospectus and any prospectus supplement and the more detailed information and financial statements and related notes that are incorporated by reference into this prospectus and any prospectus supplement.

The Company

We are a leading provider of aftermarket distribution and maintenance, repair and overhaul (“MRO”) services for air transportation assets for commercial and government markets. Following the sales of our Fleet segment in April 2025 and Federal and Defense segment in February 2024, management of our business operations is conducted under a single reportable operating segment: Aviation.

We were incorporated in Delaware in 1959. As of December 31, 2025, we employed approximately 1,600 employees.

Aviation Segment

Our Aviation segment is a leading provider of aftermarket parts distribution and MRO services for components and engine accessories supporting commercial, business and general aviation operators. This business offers a range of services to a diversified global client base of commercial airlines, regional airlines, air cargo transporters, MRO integrators and providers, aviation manufacturers, corporate and private aircraft owners, and fixed-based operators.

PAG Acquisition

On January 29, 2026, we entered into a stock purchase agreement, as amended by the First Amendment to Stock Purchase Agreement, dated as of May 4, 2026 (the “Purchase Agreement”), with VSE Mach HoldCo Acquisition Corp., a Delaware corporation and a direct wholly-owned subsidiary of the Company (“Rollover Purchaser”), VSE Mach Acquisition Corp., a Delaware corporation and a direct wholly-owned subsidiary of Rollover Purchaser (“Cash Purchaser”), GenNx/PAG IntermediateCo Inc., a Delaware corporation (“PAG HoldCo”), and GenNx360 PAG Buyer, LLC, a Delaware limited liability company (“Seller”), pursuant to which VSE would acquire all of the capital stock of PAG HoldCo, including its wholly owned subsidiary PAG Holding Corp., a Delaware corporation (d/b/a Precision Aviation Group) (“PAG”), a portfolio company of GenNx360 Capital Partners (such acquisition, the “PAG Acquisition”), upon the consummation of the transaction.

On May 5, 2026, pursuant to the Purchase Agreement, VSE acquired all of the capital stock of PAG HoldCo from the Seller for an up-front consideration equal to \$2.025 billion, subject to customary adjustments, consisting of \$1.75 billion in cash (the “Cash Consideration”) and approximately \$275 million of newly issued Rollover Purchaser Shares (as defined below), and up to an additional \$125 million in contingent payment payable in cash, shares of VSE common stock, or a combination thereof, at VSE’s sole discretion, to Seller if PAG HoldCo and its subsidiaries achieve certain profitability targets in fiscal year 2026 (the “Earnout Payment”). At the Closing, (i) Rollover Purchaser issued shares of Class B Common Stock, par value \$0.05 per share (“Rollover Purchaser Shares”), to Seller in exchange for issued and outstanding shares of PAG HoldCo held by Seller with an aggregate value equal to approximately \$275 million (such transaction, the “First Exchange”), (ii) Cash

Purchaser paid the Cash Consideration to Seller and, in exchange for the Cash Consideration, Seller transferred to Cash Purchaser all of the shares of PAG HoldCo held by Seller that were not transferred to Rollover Purchaser pursuant to the First Exchange, and (iii) Rollover Purchaser contributed the shares of PAG HoldCo acquired in the First Exchange to Cash Purchaser immediately following receipt by Rollover Purchaser such that Cash Purchaser holds 100% of the capital stock of PAG HoldCo.

Exchange and Redemption Agreement

On May 5, 2026, in connection with the closing of the PAG Acquisition (the “Closing”), VSE, Rollover Purchaser and Seller entered into an exchange and redemption agreement (the “Exchange Agreement”), pursuant to which, among other things and subject to certain restrictions, Seller obtained the right to exchange all or a portion of the Rollover Purchaser Shares for shares of VSE common stock on a one-for-one basis, subject to customary antidilution and change of control adjustments. The Consideration Shares being offered by the selling stockholder pursuant to this prospectus represent the shares for which the Rollover Purchaser Shares may be exchanged pursuant to the Exchange Agreement.

Registration Rights Agreement

On May 5, 2026, in connection with the Closing, VSE and Seller entered into a registration rights agreement (the “Registration Rights Agreement”), pursuant to which, among other things and subject to certain restrictions, within 90 days following the Closing, VSE is required to register for resale VSE common stock issuable to Seller (i) upon the completion of the PAG Acquisition as contemplated by the Exchange Agreement (the Consideration Shares), (ii) upon the payment of the Earnout Payment in shares of VSE Common Stock, if issued (the Earnout Shares), and (iii) to conduct certain underwritten offerings upon the request of Seller. The Registration Rights Agreement also provides Seller with certain customary demand registration rights. VSE is responsible for all customary expenses (except for certain selling expenses) and certain fees of counsel relating to such registrations and will indemnify Seller against (or make contributions in respect of) certain customary liabilities which may arise under the Securities Act. Any demand underwritten offering by Seller pursuant to the Registration Rights Agreement will be subject to and made in accordance with the requirements in the Lock-Up Agreements (as defined below).

The Registration Rights Agreement will terminate on the earlier of (i) the seven-year anniversary of the date of the Registration Rights Agreement and (ii) with respect to the Seller, on the date that the Seller no longer holds any Registrable Securities (as defined in the Registration Rights Agreement). This registration statement is being filed to satisfy VSE’s obligation to register for resale the Consideration Shares and the Earnout Shares.

Lock-Up Agreements

On May 5, 2026, in connection with the Closing, VSE and Seller entered into (i) a lock-up agreement covering the Consideration Shares to be issued to Seller pursuant to the Exchange Agreement (the “Closing Lock-Up Agreement”) and (ii) a lock-up agreement covering any Earnout Shares to be issued to Seller pursuant to the Purchase Agreement as an Earnout Payment (the “Earnout Lock-Up Agreement”) and, together with the Closing Lock-Up Agreement, the “Lock-Up Agreements”).

The Closing Lock-Up Agreement provides that, subject to specified exceptions, Seller will not transfer the Consideration Shares subject to such agreement during the lock-up period, which will consist of the period from the Closing Date and ending on (i) with respect to 33.33% of such shares, the date that is six months after the Closing Date, (ii) with respect to the next 33.33% of such shares, the date that is twelve months after the Closing Date and (iii) with respect to the final 33.34% of such shares, the date that is 18 months after the Closing Date.

The Earnout Lock-Up Agreement provides that, subject to specified exceptions, Seller will not transfer the Earnout Shares subject to such agreement during the lock-up period, which will consist of the period from the date the Earnout Shares, if any, are issued as the Earnout Payment (such date, the “Earnout Payment Date”) and ending on (i) with respect to 50% of such shares, the date that is three months after the Earnout Payment Date and (ii) with respect to the next 50% of such shares, the date that is six months after the Earnout Payment Date.

Corporate Information

Our principal executive offices are located at 3361 Enterprise Way, Miramar, Florida 33025. Our telephone number is (954) 430-6600. Our website is <http://www.vsecorp.com>. The information contained on or accessible through our website is not part of this prospectus, other than the documents that we file with the SEC that are specifically incorporated by reference into this prospectus.

RISK FACTORS

Investment in the offered securities involves a high degree of risk. You should consider carefully the risks and uncertainties described under the heading “*Risk Factors*” in any applicable prospectus supplement and under the caption “*Risk Factors*” in our most recent annual report on Form 10-K and any subsequent quarterly reports on Form 10-Q, current reports on Form 8-K, proxy and information statements and other information filed with the SEC pursuant to Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act, which are incorporated herein by reference, before you decide whether to purchase the offered securities. These risks could materially adversely affect our business, financial condition, results of operations, and cash flows. As a result, the market price of the offered securities may decline, and you may lose part or all of your investment in the offered securities. For more information, see the sections of this prospectus titled “Where You Can Find More Information” and “Information We Incorporate by Reference.”

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational reporting requirements of the Exchange Act. We file reports, proxy statements and other information with the SEC. Our SEC filings are available over the Internet at the SEC's website at <http://www.sec.gov>.

We make available, free of charge, on our website at <http://www.vsecorp.com>, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statements and amendments to those reports and statements as soon as reasonably practicable after they are filed with the SEC. The contents of our website and the SEC's website are not part of this prospectus, and the references to our website and the SEC's website do not constitute incorporation by reference into this prospectus of the information contained at those sites, other than documents we file with the SEC that are specifically incorporated by reference into this prospectus.

INFORMATION WE INCORPORATE BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus the information in documents we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. Any statement contained in any document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed to be modified or superseded to the extent that a statement contained in or omitted from this prospectus, or in any other subsequently filed document that also is or is deemed to be incorporated by reference, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We incorporate by reference the documents listed below and any future documents that we subsequently file with the SEC (excluding any portions of such documents that are furnished and not filed with the SEC) under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus until the offering of the securities is terminated:

- our [Annual Report on Form 10-K for the year ended December 31, 2025](#);
- our Current Reports on Form 8-K filed with the SEC on [January 29, 2026](#) (Items 1.01, 2.03 and 3.02 only), [February 2, 2026](#), [February 4, 2026](#), [February 5, 2026](#), [February 27, 2026](#), and [May 7, 2026](#) (Items 1.01, 2.01, and 2.03 only); and
- the description of our common stock set forth in [Exhibit 4.2](#) to our Annual Report on Form 10-K for the fiscal year ended December 31, 2025.

We will not, however, incorporate by reference in this prospectus any documents or portions thereof that are not deemed “filed” with the SEC, including any information furnished pursuant to Item 2.02 or Item 7.01 of our Current Reports on Form 8-K unless, and except to the extent, specified in such Current Reports.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered a copy of any or all of the documents that have been incorporated by reference in this prospectus but not delivered with this prospectus (other than an exhibit to these filings, unless the exhibit is specifically incorporated by reference into the filing requested) at no cost, if you submit a request to us by writing or telephoning us at the following address and telephone number:

VSE Corporation
3361 Enterprise Way
Miramar, Florida 33025
Attention: Shareholder Services
Phone: (954) 430-6600

USE OF PROCEEDS

All of the Shares offered by the selling stockholder pursuant to this prospectus will be sold by the selling stockholder for its account. We will not receive any of the proceeds from these sales.

SELLING STOCKHOLDER

This prospectus relates to the offer and sale from time to time by the selling stockholder of up to 2,615,752 Shares, consisting of (i) 1,415,752 Consideration Shares and (ii) up to 1,200,000 Earnout Shares, all of which are being offered for resale for the account of the selling stockholder. The selling stockholder may from time to time offer and sell pursuant to this prospectus any or all of the Shares being registered. For additional information regarding the issuances of the Shares covered by this prospectus, see the section titled “Summary—PAG Acquisition.”

The actual number of Earnout Shares issued to the selling stockholder in connection with the Earnout Payment, if any, could be less than 1,200,000 shares of common stock depending on (i) whether and to what extent the applicable future milestones are achieved, (ii) the volume-weighted average price of our common stock for the 20 trading days immediately preceding the Earnout Shares calculation date, and (iii) our election to pay the Earnout Payment, if any, in cash, common stock, or a mix of cash and common stock. The table below is not intended to constitute an indication or prediction of whether any of the future milestones will be achieved or the future market price of our common stock.

The table below sets forth certain information known to us, based upon written representations from the selling stockholder, with respect to the beneficial ownership of our Shares held by the selling stockholder as of May 5, 2026, the Closing Date. Because the selling stockholder may sell, transfer or otherwise dispose of all, some or none of the Shares covered by this prospectus, we cannot determine the number of Shares that will be sold, transferred or otherwise disposed of by the selling stockholder, or the amount or percentage of Shares that will be held by the selling stockholder upon termination of any particular offering. See “Plan of Distribution.” For purposes of the table below, we assume that the selling stockholder will sell all of its Shares covered by this prospectus.

In the table below, the percentage of shares beneficially owned is based on 28,057,152 shares of VSE common stock outstanding as of May 5, 2026 *plus* the 2,615,752 Shares offered hereby, determined in accordance with Rule 13d-3 under the Exchange Act (except that, for purposes of the table, we have assumed that all Earnout Shares are issued and outstanding). Under such rule, beneficial ownership includes any shares over which the selling stockholder has sole or shared voting power or investment power and also any shares that the selling stockholder has the right to acquire within 60 days of such date through the exercise of any options, warrants or other rights. Except as otherwise indicated, we believe that the selling stockholder has sole voting and investment power with respect to all shares shown as beneficially owned by them. The beneficial ownership information presented in this table is not necessarily indicative of beneficial ownership for any other purpose.

	Shares Beneficially Owned Prior to this Offering		Maximum Number of Shares That May Be Offered	Shares Beneficially Owned After This Offering	
	Number	Percentage		Number ⁽¹⁾	Percentage
Selling Stockholder:					
GenNx360 PAG Buyer, LLC ⁽²⁾	2,615,752	8.5%	2,615,752	—	—

- (1) Assumes the sale of all Shares being offered pursuant to this prospectus.
- (2) The reported shares, if and when issued, will be directly owned by GenNx360 PAG Buyer, LLC. Ronald Blaylock, President of GenNx360 PAG Buyer, LLC, has sole voting and investment power with respect to the shares owned by GenNx360 PAG Buyer, LLC. The reported shares include (i) 1,415,752 Consideration Shares that may be issued to the selling stockholder upon exchange of its Rollover Purchaser Shares pursuant to the Exchange Agreement and (ii) up to 1,200,000 Earnout Shares that may be issued to the selling stockholder pursuant to the Purchase Agreement as an Earnout Payment.

Material Relationships with Selling Stockholder

We provide more information about our relationship with the selling stockholder in the section of this prospectus entitled “Summary—PAG Acquisition.”

PLAN OF DISTRIBUTION

The selling stockholder may, from time to time in one or more transactions on one or more exchanges, in the over-the-counter market or any other organized market where our common stock may be traded, sell any or all of its Shares offered hereby through broker-dealers or agents, directly to one or more purchasers or through a combination of any such methods of sale. The selling stockholder may distribute the Shares offered hereby from time to time in one or more transactions:

- at a fixed price or prices, which may be changed and which may be higher or lower than market prices;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

The selling stockholder may use any one or more of the following methods when selling the Shares offered hereby:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- one or more block trades in which the broker-dealer will attempt to sell such shares as agent or principal of all of such Shares held by the selling stockholder;
- purchases by a broker-dealer as principal and resale by such broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- in underwritten transactions;
- settlement of short sales;
- agreements between broker-dealers and the selling stockholder to sell a specified number of the Shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

If the selling stockholder effects such transactions by selling the Shares offered hereby to or through broker-dealers or agents, such broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholder or commissions from purchasers of the Shares offered hereby for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the Shares offered hereby or otherwise, the selling stockholder may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the Shares offered hereby in the course of hedging in positions they assume. The selling stockholder may also sell the Shares offered hereby short and deliver the Shares covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholder may also loan or pledge the Shares offered hereby to broker-dealers that in turn may sell such Shares.

The selling stockholder may pledge or grant a security interest in some or all of the Shares offered hereby and owned by it and, if it defaults in the performance of its secured obligations, the pledgees or secured parties may offer and sell such Shares from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424 or other applicable provision of the Securities Act, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this

prospectus. The selling stockholder also may transfer and donate the Shares offered hereby in other circumstances, in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholder and any broker-dealer participating in the distribution of the Shares offered hereby may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act.

At the time a particular offering of the Shares offered hereby is made, a prospectus supplement, if required, will be distributed, which will set forth the name of the selling stockholder, the aggregate amount of the Shares being offered and the terms of the offering, including, to the extent required, the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholder and any discounts, commissions or concessions allowed or reallocated or paid to broker-dealers.

The aggregate proceeds to the selling stockholder from the sale of the Shares offered by it hereby will be the purchase price of the Shares less discounts and commissions, if any. The selling stockholder reserves the right to accept and, together with its agents from time to time, to reject, in whole or in part, any proposed purchase of the Shares to be made directly or through agents. We will not receive any of the proceeds from this offering.

Under the securities laws of some states, the Shares offered hereby may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the Shares offered hereby may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that the selling stockholder will sell any or all of the Shares registered pursuant to the registration statement of which this prospectus forms a part. Any Shares covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than pursuant to this prospectus. In addition, the selling stockholder may transfer, devise or gift the Shares by other means not described in this prospectus.

Additionally, the selling stockholder may elect to make an in-kind distribution of the Shares to its members, partners or stockholders pursuant to the registration statement of which this prospectus forms a part. To the extent that such members, partners or stockholders are not affiliates of ours, such members, partners or stockholders would thereby receive freely tradeable registered shares pursuant to the distribution through the registration statement of which this prospectus forms a part. The selling stockholder also may transfer Shares in other circumstances, in which case the transferees or other successors in interest may be the selling beneficial owners for purposes of this prospectus.

The selling stockholder and any broker-dealers or agents that are involved in selling the Shares may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. The selling stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

The selling stockholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the Shares offered hereby by the selling stockholder and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the Shares offered hereby to engage in market-making activities with respect to the Shares offered hereby. All of the foregoing may affect the marketability of the Shares offered hereby and the ability of any person or entity to engage in market-making activities with respect to the Shares offered hereby.

We have agreed to pay all fees and expenses incurred in connection with this registration; provided, however, that we will not be responsible for any legal fees or selling expenses for the selling stockholder, including any broker's fees or commissions, if any, except for an underwritten offering in which case we have agreed to pay certain legal fees and selling expenses. We have agreed to indemnify the selling stockholder and underwriters, if applicable, against certain losses, claims, damages and liabilities, including liabilities under the Securities Act, or the selling stockholder may be entitled to contribution. As permitted by applicable law, we may be indemnified by the selling stockholder or underwriters against civil liabilities, including liabilities under the Securities Act, that may arise from written information furnished to us by the selling stockholder specifically for use in the registration statement of which this prospectus forms a part, or we may be entitled to contribution. As permitted by applicable law, the selling stockholder may indemnify any broker-dealer or underwriter that participates in transactions involving the sale of the Shares against certain liabilities, including liabilities under the Securities Act.

Once sold under the registration statement of which this prospectus forms a part, the Shares offered hereby will be freely tradable in the hands of persons other than our affiliates.

LEGAL MATTERS

The validity of the Shares offered by VSE Corporation under this prospectus will be passed upon for us by Jones Day.

EXPERTS

The consolidated financial statements of VSE Corporation incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the reports of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

The consolidated financial statements of PAG Holding Corp. and Subsidiaries as of and for the years ended December 31, 2025 and 2024, incorporated by reference in this prospectus from the Company's Current Report on Form 8-K filed on May 7, 2026, were audited by Baker Tilly US, LLP, an independent auditor, as stated in their report. Such consolidated financial statements have been so incorporated in reliance upon the report of such Firm given upon their authority as experts in accounting and auditing.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the estimated expenses payable in connection with the sale of the securities being registered.

<u>Expense</u>	<u>Estimated Amount</u>
SEC registration fee	\$ 60,394.94
Printing expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Miscellaneous costs	*
Total	*

* Calculated based on the number of issuances and amount of securities offered and, accordingly, cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers

Section 102(b)(7) of the Delaware General Corporation Law (the “DGCL”) allows a corporation to eliminate the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except in cases where the director breached his or her duty of loyalty to the corporation or its stockholders, failed to act in good faith, engaged in intentional misconduct or a knowing violation of the law, willfully or negligently authorized the unlawful payment of a dividend or approved an unlawful stock redemption or repurchase or obtained an improper personal benefit. Our restated certificate of incorporation and amended bylaws contain a provision which eliminates directors’ personal liability as set forth above.

Our restated certificate of incorporation and amended bylaws provide in effect that we shall indemnify our directors and officers to the extent permitted by the DGCL. Section 145 of the DGCL provides that a Delaware corporation has the power to indemnify its directors, officers, employees and agents in certain circumstances. Subsection (a) of Section 145 of the DGCL empowers a corporation to indemnify any director, officer, employee or agent, or former director, officer, employee or agent, who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding provided that such director, officer, employee or agent acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, provided that such director, officer, employee or agent had no reasonable cause to believe that his or her conduct was unlawful.

Subsection (b) of Section 145 of the DGCL empowers a corporation to indemnify any director, officer, employee or agent, or former director, officer, employee or agent, who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above against expenses (including attorneys’ fees) actually and reasonably incurred in connection with the defense or settlement of such action or suit provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification may be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in

which such action or suit was brought shall determine that, despite the adjudication of liability, such person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper.

Section 145 further provides that to the extent that a present or former director or officer of a corporation has been successful in the defense of any action, suit or proceeding referred to in subsections (a) and (b) of Section 145 or in the defense of any claim, issue or matter therein, he or she shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him or her in connection therewith; that indemnification provided by Section 145 shall not be deemed exclusive of any other rights to which the party seeking indemnification may be entitled; and the corporation is empowered to purchase and maintain insurance on behalf of a director, officer, employee or agent of the corporation against any liability asserted against him or her or incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the corporation would have the power to indemnify him or her against such liabilities under Section 145; and that, unless indemnification is ordered by a court, the determination that indemnification under subsections (a) and (b) of Section 145 is proper because the director, officer, employee or agent has met the applicable standard of conduct under such subsections shall be made by (1) a majority vote of the directors who are not parties to such action, suit or proceeding, even though less than a quorum, (2) by a committee of such directors designated by majority vote of such directors, even though less than a quorum, (3) if there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion, or (4) by the stockholders.

We have in effect insurance policies for general officers' and directors' liability insurance covering all of our officers and directors.

Item 16. Exhibits

(a) Exhibits

<u>Exhibit Number</u>	<u>Description</u>
2.1*†	<u>Stock Purchase Agreement, dated January 29, 2026, by and among VSE Corporation, VSE Mach HoldCo Acquisition Corp., VSE Mach Acquisition Corp., GenNx/PAG IntermediateCo Inc., and GenNx360 PAG Buyer, LLC (incorporated by reference to Exhibit 2.1 to VSE's Current Report on Form 8-K filed January 29, 2026).</u>
2.2†	<u>First Amendment to Stock Purchase Agreement, dated as of May 4, 2026, between VSE Corporation and GenNx360 PAG Buyer, LLC (incorporated by reference to Exhibit 2.2 to VSE's Current Report on Form 8-K filed May 7, 2026).</u>
3.1	<u>Restated Certificate of Incorporation of VSE Corporation dated as of March 4, 1996 (incorporated by reference to Exhibit 3.1 to VSE's Form 10-K dated March 5, 2021).</u>
3.2	<u>Certificate of Amendment of the Restated Certificate of Incorporation of VSE Corporation dated as of May 2, 2006 (incorporated by reference to Exhibit 3.1 to VSE's Form 10-Q dated August 1, 2006).</u>
3.3	<u>Certificate of Amendment of the Restated Certificate of Incorporation of VSE Corporation dated as of May 4, 2022 (incorporated by reference to Exhibit 3.1 to VSE's Form 10-K dated March 10, 2023).</u>
3.4	<u>Certificate of Amendment of the Restated Certificate of Incorporation of VSE Corporation dated as of May 8, 2025 (incorporated by reference to Exhibit 3.1 to VSE's Form 10-Q dated July 31, 2025).</u>
3.5	<u>By-Laws of VSE Corporation as amended through October 22, 2022 (incorporated by reference to Exhibit 3.4 to VSE's Form 10-Q dated July 27, 2023).</u>
3.6	<u>Amendment No. 3 to the By-Laws of VSE Corporation as amended through October 1, 2022 (incorporated by reference to Exhibit 3.2 to VSE's Form 10-K dated March 10, 2023).</u>

Exhibit Number	Description
4.1	Exchange and Redemption Agreement, dated as of May 5, 2026, by and among VSE Corporation, VSE Mach HoldCo Acquisition Corp. and GenNx360 PAG Buyer, LLC (incorporated by reference to Exhibit 2.3 to VSE's Current Report on Form 8-K filed May 7, 2026)
4.2	Registration Rights Agreement, dated as of May 5, 2026, by and between VSE Corporation and GenNx360 PAG Buyer, LLC (incorporated by reference to Exhibit 2.4 to VSE's Current Report on Form 8-K filed May 7, 2026)
4.3	Initial Shares Lock-Up Agreement, dated as of May 5, 2026, by and between VSE Corporation and GenNx360 PAG Buyer, LLC (incorporated by reference to Exhibit 2.5 to VSE's Current Report on Form 8-K filed May 7, 2026)
4.4	Earnout Shares Lock-Up Agreement, dated as of May 5, 2026, by and between VSE Corporation and GenNx360 PAG Buyer, LLC (incorporated by reference to Exhibit 2.6 to VSE's Current Report on Form 8-K filed May 7, 2026)
5.1	Opinion of Jones Day
23.1	Consent of Grant Thornton LLP, independent registered public accounting firm of VSE
23.2	Consent of Baker Tilly US, LLP, independent registered public accounting firm of PAG
23.3	Consent of Jones Day (included in Exhibit 5.1)
24.1	Power of Attorney (set forth on the signature page to this Registration Statement)
107	Filing Fee Table

* Certain schedules and exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Company will furnish supplementally a copy of any omitted schedules or exhibits to the SEC upon request.

† Certain information has been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Company will furnish supplementally a copy of any omitted information to the SEC upon request.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

1. To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Filing Fee Tables" or "Calculation of Registration Fee" table, as applicable, in the effective registration statement; and
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (i), (ii) and (iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

2. That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
3. To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
4. That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
5. That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

-
6. For purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Miramar, State of Florida, on the 7th day of May, 2026.

VSE CORPORATION

By: /s/ John A. Cuomo
Name: John A. Cuomo
Title: Chief Executive Officer and President

Each person whose signature appears below appoints John A. Cuomo, Adam R. Cohn and Tobi Lebowitz, or any one of them, each acting alone, as the true and lawful attorney-in-fact or agent, or attorneys-in-fact or agents, for each of the undersigned, with full power of substitution and resubstitution, and in the name, place and stead of each of the undersigned, to execute and file any and all amendments, including post-effective amendments, supplements and exhibits to this registration statement, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing necessary, appropriate or desirable to be done in and about the premises in order to effectuate the same as fully to all intents and purposes as he or she might or could do if personally present, hereby ratifying and confirming all that said attorneys-in-fact and agents, and each of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ John A. Cuomo</u> John A. Cuomo	Director, Chief Executive Officer and President (Principal Executive Officer)	May 7, 2026
<u>/s/ Adam R. Cohn</u> Adam R. Cohn	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	May 7, 2026
<u>/s/ Ralph E. Eberhart</u> Ralph E. Eberhart	Chairman/Director	May 7, 2026
<u>/s/ Bonnie K. Wachtel</u> Bonnie K. Wachtel	Director	May 7, 2026
<u>/s/ John E. Potter</u> John E. Potter	Director	May 7, 2026
<u>/s/ Mark E. Ferguson III</u> Mark E. Ferguson III	Director	May 7, 2026
<u>/s/ Edward P. Dolanski</u> Edward P. Dolanski	Director	May 7, 2026
<u>/s/ Anita D. Britt</u> Anita D. Britt	Director	May 7, 2026
<u>/s/ Lloyd E. Johnson</u> Lloyd E. Johnson	Director	May 7, 2026

JONES DAY

1221 PEACHTREE STREET, N. E. • SUITE 400 • ATLANTA, GEORGIA 30361
TELEPHONE: +1.404.521.3939 • JONESDAY.COM

May 7, 2026

VSE Corporation
3361 Enterprise Way
Miramar, Florida 33025

Re: Registration Statement on Form S-3 filed by VSE Corporation

Ladies and Gentlemen:

We have acted as counsel for VSE Corporation, a Delaware corporation (the “Company”), in connection with the registration for resale from time to time by GenNx360 PAG Buyer, LLC, a Delaware limited liability company (the “Selling Stockholder”), of up to an aggregate of 2,615,752 shares of the Company’s common stock, par value \$0.05 per share (the “Common Stock”), consisting of (i) 1,415,752 shares of Common Stock (the “Consideration Shares”) issuable by the Company upon exchange of shares of Class B common stock, par value \$0.05 per share, of VSE Mach HoldCo Acquisition Corp., a Delaware corporation and a direct wholly-owned subsidiary of the Company (“VSE Mach HoldCo”), pursuant to the Exchange and Redemption Agreement, dated as of May 5, 2026, by and among the Company, VSE Mach HoldCo and the Selling Stockholder (the “Exchange Agreement”) and (ii) up to 1,200,000 shares of Common Stock (the “Earnout Shares”) that may be delivered to the Selling Stockholder pursuant to the Stock Purchase Agreement, dated as of January 29, 2026, by and among the Company, VSE Mach HoldCo, VSE Mach Acquisition Corp., GenNx/PAG IntermediateCo Inc., and the Selling Stockholder, as amended by the First Amendment to Stock Purchase Agreement, dated as of May 4, 2026 (the “Purchase Agreement”), in each case as contemplated by the Company’s Registration Statement on Form S-3 to which this opinion is filed as an exhibit (as the same may be amended from time to time, the “Registration Statement”). The Consideration Shares and the Earnout Shares may be offered and sold from time to time pursuant to Rule 415 under the Securities Act of 1933 (the “Securities Act”).

In connection with the opinions expressed herein, we have examined such documents, records and matters of law as we have deemed relevant or necessary for purposes of such opinions. Based on the foregoing, and subject to the further limitations, qualifications and assumptions set forth herein, we are of the opinion that:

1. The Consideration Shares, when issued and delivered pursuant to the terms of the Exchange Agreement, will be validly issued, fully paid and nonassessable.

AMSTERDAM • ATLANTA • BEIJING • BOSTON • BRISBANE • BRUSSELS • CHICAGO • CLEVELAND • COLUMBUS • DALLAS DETROIT
• DUBAI • DÜSSELDORF • FRANKFURT • HONG KONG • HOUSTON • IRVINE • LONDON • LOS ANGELES • MADRID MELBOURNE •
MEXICO CITY • MIAMI • MILAN • MINNEAPOLIS • MUNICH • NEW YORK • PARIS • PERTH • PITTSBURGH SAN DIEGO •
SAN FRANCISCO • SÃO PAULO • SHANGHAI • SILICON VALLEY • SINGAPORE • SYDNEY • TAIPEI • TOKYO • WASHINGTON

2. The Earnout Shares, when issued and delivered pursuant to the terms of the Purchase Agreement, will be validly issued, fully paid and nonassessable.

The opinions set forth above are subject to the following limitations, qualifications and assumptions.

In rendering the foregoing opinions, we have assumed that the resolutions of the Company's Board of Directors (or an authorized committee thereof) authorizing the Company to issue and deliver the Consideration Shares pursuant to the Exchange Agreement and the Earnout Shares pursuant to the Purchase Agreement will be in full force and effect at all times at which such Consideration Shares and Earnout Shares are issued and delivered by the Company, and the Company will take no action inconsistent with such resolutions. Further, with respect to the Earnout Shares, we have assumed that the Earnout Shares will be issued only upon achievement of all applicable earnout provisions set forth in the Purchase Agreement.

As to facts material to the opinions and assumptions expressed herein, we have relied upon oral or written statements and representations of officers and other representatives of the Company and others. The opinions expressed herein are limited to the General Corporation Law of the State of Delaware, as currently in effect, and we express no opinion as to the effect of the laws of any other jurisdiction.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement and to the reference to Jones Day under the caption "Legal Matters" in the prospectus constituting a part of such Registration Statement. In giving such consent, we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/s/ Jones Day

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our reports dated February 27, 2026, with respect to the consolidated financial statements and internal control over financial reporting of VSE Corporation included in the Annual Report on Form 10-K for the year ended December 31, 2025, which are incorporated by reference in this Registration Statement. We consent to the incorporation by reference of the aforementioned reports in this Registration Statement, and to the use of our name as it appears under the caption "Experts".

/s/ GRANT THORNTON LLP

Charlotte, North Carolina
May 6, 2026

Consent of Independent Auditors

We consent to the incorporation by reference in this Registration Statement on Form S-3 of VSE Corporation of our report dated April 23, 2026 relating to the consolidated financial statements of PAG Holding Corp. and Subsidiaries, included in the Current Report on Form 8-K of VSE Corporation dated May 7, 2026, filed with the Securities and Exchange Commission, and to the reference to our firm under the heading "Experts" in such Registration Statement.

/s/ Baker Tilly US, LLP

Peachtree Corners, GA
May 6, 2026

