

GSE SYSTEMS INC  
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August 10, 2007

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Registration No. 333-144623

## PROSPECTUS

GSE SYSTEMS, INC.

### 2,000,001 Shares of Common Stock

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This prospectus covers the potential resale of up to 2,000,001 shares of our common stock by the stockholders identified in the "Selling Stockholders" section of this prospectus. Of these shares, 1,666,667 are issued and outstanding, up to 166,667 shares are issuable upon the exercise of currently outstanding warrants and up to 166,667 shares are issuable upon the exercise of warrants that we are obligated to issue in the event of a default of certain of our obligations under the terms of the registration rights agreement we entered into with the selling stockholders.

The selling stockholders may offer their shares from time to time through public or private transactions, including, without limitation, through any means described in the section of this prospectus entitled "Plan of Distribution," at prevailing market prices or at privately negotiated prices. The timing and amount of any sale are within the sole discretion of the selling stockholders. The selling stockholders may make sales directly to purchasers, through brokers, agents or dealers, or through a combination of these methods. The selling stockholders will bear all commissions and other compensation, if any, paid in connection with the sale of their shares. See "Plan of Distribution" beginning on page 12 for a further description of how the selling stockholder may dispose of the shares covered by this prospectus.

We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of the shares by the selling stockholders. See "Use of Proceeds." All costs associated with this registration statement will be borne by us.

Our common stock is listed on the American Stock Exchange under the symbol "GVP." On August 7, 2007, the last reported sale price of our common stock was \$6.88 per share.

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**This investment involves a high degree of risk. See "Risk Factors" beginning on page 4 for a description of certain matters which you should consider before investing in our common stock.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.**

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The date of this Prospectus is August 8, 2007.



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**You should rely only on the information contained in this prospectus and in any prospectus supplements. We have not, and the selling stockholders have not, authorized anyone to provide you with information different from that contained in this prospectus and in any prospectus supplements. The selling stockholders are not making an offer to sell or seeking offers to buy these securities in any jurisdiction where the offer or sale is not permitted. The information contained in this prospectus is complete and accurate as of the date of this prospectus, but the information may have changed since that date.**

Unless the context otherwise indicates, references in this prospectus to the terms “GSE,” “the Company,” “we,” “our” and “us” refer to GSE Systems, Inc. and its subsidiaries.

## PROSPECTUS SUMMARY

*This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus. This summary does not contain all of the information that you should consider before investing in our common stock. You should read carefully the entire prospectus, including "Risk Factors" and the other information contained or incorporated by reference in this prospectus, before making an investment decision.*

### The Company

GSE is incorporated under the laws of the State of Delaware and is a leader in real-time, high fidelity simulation. The Company provides simulation solutions and services to the nuclear and fossil electric utility industry and the chemical and petrochemical industries. In addition, the Company provides plant monitoring and signal analysis monitoring and optimization software primarily to the power industry.

GSE Systems, Inc.'s executive offices are located at 7133 Rutherford Road, Suite 200, Baltimore, Maryland 21244. The Company's telephone number is (410) 277-3740 and its facsimile number is (410) 277-5287. Our common stock trades on the American Stock Exchange under the symbol "GVP". GSE maintains a Web site at <http://www.gses.com>. Except for any documents that are incorporated by reference into this prospectus that may be accessed from our website, the information available on or through our website is not part of this prospectus.

### Recent Developments

On June 22, 2007, we sold and issued in a private placement to a select group of institutional accredited investors a total of 1,666,667 shares of our common stock at a price of \$6.00 per share, pursuant to the terms of a securities purchase agreement. As part of the transaction, the purchasers received, for no additional consideration, warrants to purchase 166,667 shares of our common stock at an exercise price of \$6.00 per share. The warrants are immediately exercisable and expire on June 22, 2012.

The gross proceeds we received from the private placement were approximately \$10 million. A portion of the funds were used to pay down the outstanding borrowings under our line of credit with Laurus Master Fund, Ltd (as required by the terms thereof) and the balance is expected to be used for working capital purposes.

### The Offering

Securities that may be sold by the selling stockholders:	Up to 1,666,667 shares of common stock currently issued and outstanding, up to 166,667 shares of common stock issuable upon the exercise of outstanding warrants and up to 166,667 shares of common stock issuable upon the exercise of warrants we may be required to issue. All of the shares offered by this prospectus are being sold by the selling stockholders. See "Selling Stockholders."
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Common stock outstanding as of August 7, 2007:	14,860,986
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Use of proceeds:	We will not receive any proceeds from the sale of shares of common stock offered by this prospectus which will be sold for the account of the selling stockholders. See "Use of Proceeds."
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AMEX symbol:

GVP

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## RISK FACTORS

*You should carefully consider the risks described below before making an investment decision. The risks and uncertainties described below may not be the only ones we will face. Additional risks and uncertainties not presently known to us or that we currently deem not material may also impair our business operations. If any of the following risks actually occur, our business, financial condition or results of operations could be materially adversely affected. In such case, the trading price of our common stock could decline, and you may lose all or part of your investment.*

**The Company's expense levels are based upon its expectations as to future revenues, so it may be unable to adjust spending to compensate for a revenue shortfall. Accordingly, any revenue shortfall would likely have a disproportionate effect on the Company's operating results.**

The Company's revenue was \$27.5 million, \$22.0 million, and \$29.5 million for the years ended December 31, 2006, 2005, and 2004, respectively. The Company's operating income (loss) was \$2.1 million, (\$4.7 million), and \$2,000 in 2006, 2005, and 2004, respectively. The Company's operating results have fluctuated in the past and may fluctuate significantly in the future as a result of a variety of factors, including purchasing patterns, timing of new products and enhancements by the Company and its competitors, and fluctuating foreign economic conditions. Since the Company's expense levels are based in part on its expectations as to future revenues and includes certain fixed costs, the Company may be unable to adjust spending in a timely manner to compensate for any revenue shortfall and such revenue shortfalls would likely have a disproportionate adverse effect on operating results.

### **Risk of International Sales and Operations**

Sales of products and the provision of services to end users outside the United States accounted for approximately 74% of the Company's consolidated revenue in 2006, 63% of the Company's consolidated revenue in 2005, and 65% of consolidated revenue in 2004. The Company anticipates that international sales and services will continue to account for a significant portion of its revenue in the foreseeable future. As a result, the Company may be subject to certain risks, including risks associated with the application and imposition of protective legislation and regulations relating to import or export (including export of high technology products) or otherwise resulting from trade or foreign policy and risks associated with exchange rate fluctuations. Additional risks include potentially adverse tax consequences, tariffs, quotas and other barriers, potential difficulties involving the Company's strategic alliances and managing foreign sales agents or representatives and potential difficulties in accounts receivable collection. The Company currently sells products and provides services to customers in emerging market economies such as the United Arab Emirates, (21% of the Company's consolidated revenue in 2006, but none in 2005 and 2004) and Russia (12%, 0% and 5% of the Company's consolidated revenue in 2006, 2005 and 2004, respectively). Although end users in the Ukraine accounted for 8%, 18%, and 21% of the Company's consolidated revenue in 2006, 2005, and 2004, respectively, GSE's customer for these projects was Battelle's Pacific Northwest National Laboratory, which is the purchasing agent for the U.S. Department of Energy ("DOE"). The DOE provides funding for various projects in Eastern and Central Europe. Accordingly, the Company is not subject to the political and financial risks that are normally faced when doing business in the Ukraine. The Company has taken steps designed to reduce the additional risks associated with doing business in these countries, but the Company believes that such risks may still exist and include, among others, general political and economic instability, lack of currency convertibility, as well as uncertainty with respect to the efficacy of applicable legal systems. There can be no assurance that these and other factors will not have a material adverse effect on the Company's business, financial condition or results of operations.

**For the year ended December 31, 2006, three customers provided a substantial portion of the Company's revenue. There is no guarantee that the Company will be able to generate the same level of revenue from these customers in future periods, nor that the Company could replace these revenues from other customers, thus causing a material adverse effect upon the Company's future revenue and results of operations.**



For the year ended December 31, 2006, the Emirates Simulation Academy LLC (ESA) provided 21% of the Company's consolidated 2006 revenue (none in 2005 and 2004); the Federal State-Owned Enterprise Rosenergoatom (Russia) provided 12% of the Company's consolidated 2006 revenue (0% and 5% in 2005 and 2004, respectively), and Battelle's Pacific Northwest National Laboratory accounted for approximately 11% of the Company's consolidated 2006 revenue (25% and 24% in 2005 and 2004, respectively). The Pacific Northwest National Laboratory is the purchasing agent for the DOE and the numerous projects the Company performs in Eastern and Central Europe. In January 2006, the Company received a \$15.1 million contract from ESA to supply five simulators and an integrated training program. At March 31, 2007, the backlog remaining on this project was approximately \$6.5 million. The project is expected to be completed by October 2007. The Company may not generate comparable revenue from these customers in future periods and may not be able to replace this revenue from other customers, thus materially and adversely affecting the Company's revenue and results of operations.

**The Company's business is substantially dependent on sales to the nuclear power industry. Any disruption in this industry would have a material adverse effect upon the Company's revenue.**

In 2006, 60% of GSE's revenue was from customers in the nuclear power industry (83% in 2005 and 85% in 2004). The Company will continue to derive a significant portion of its revenue from customers in the nuclear power industry for the foreseeable future. The Company's ability to supply nuclear power plant simulators and related products and services is dependent on the continued operation of nuclear power plants and, to a lesser extent, on the construction of new nuclear power plants. A wide range of factors affect the continued operation and construction of nuclear power plants, including the political and regulatory environment, the availability and cost of alternative means of power generation, the occurrence of future nuclear incidents, and general economic conditions.

**The Company's line of credit agreement with Laurus Master Fund Ltd. imposes significant operating and financial restrictions, which may prevent it from capitalizing on business opportunities.**

GSE's line of credit agreement with Laurus Master Fund Ltd. (as further described in the Company's Form 8-K filed with the Commission on March 8, 2006 and incorporated by reference herein) imposes significant operating and financial restrictions. These restrictions affect, and in certain cases limit, among other things, the Company's ability to:

- incur additional indebtedness and liens;
  - make capital expenditures;
  - make investments and acquisitions;
- consolidate, merge or sell all or substantially all of its assets.

There can be no assurance that these restrictions will not adversely affect the Company's ability to finance its future operations or capital needs or to engage in other business activities that may be in the interest of shareholders.

**The Company is dependent on product innovation and development, which costs are incurred prior to revenues for new products and improvements.**

The Company believes that its success will depend in large part on its ability to maintain and enhance its current product line, develop new products, maintain technological competitiveness and meet an expanding range of customer needs. The Company's product development activities are aimed at the development and expansion of its library of software modeling tools, the improvement of its display systems and workstation technologies, and the advancement and upgrading of its simulation technology. The life cycles for software modeling tools, graphical user interfaces, and simulation technology are variable and largely determined by competitive pressures. Consequently, the Company will

need to continue to make significant investments in research and development to enhance and expand its capabilities in these areas and to maintain its competitive advantage.

**The Company relies upon its intellectual property rights for the success of its business; however, the steps it has taken to protect its intellectual property may be inadequate.**

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Although the Company believes that factors such as the technological and creative skills of its personnel, new product developments, frequent product enhancements and reliable product maintenance are important to establishing and maintaining a technological leadership position, the Company's business depends, in part, on its intellectual property rights in its proprietary technology and information. The Company relies upon a combination of trade secret, copyright, patent and trademark law, contractual arrangements and technical means to protect its intellectual property rights. The Company enters into confidentiality agreements with its employees, consultants, joint venture and alliance partners, customers and other third parties that are granted access to its proprietary information, and limits access to and distribution of its proprietary information. There can be no assurance, however, that the Company has protected or will be able to protect its proprietary technology and information adequately, that the unauthorized disclosure or use of the Company's proprietary information will be prevented, that others have not or will not develop similar technology or information independently, or, to the extent the Company owns patents, that others have not or will not be able to design around those patents. Furthermore, the laws of certain countries in which the Company's products are sold do not protect the Company's products and intellectual property rights to the same extent as the laws of the United States.

**The industries in which GSE operates are highly competitive. This competition may prevent the Company from raising prices at the same pace as its costs increase.**

The Company's businesses operate in highly competitive environments with both domestic and foreign competitors, many of whom have substantially greater financial, marketing and other resources than the Company. The principal factors affecting competition include price, technological proficiency, ease of system configuration, product reliability, applications expertise, engineering support, local presence and financial stability. The Company believes that competition in the simulation fields may further intensify in the future as a result of advances in technology, consolidations and/or strategic alliances among competitors, increased costs required to develop new technology and the increasing importance of software content in systems and products. As the Company's business has a significant international component, changes in the value of the dollar could adversely affect the Company's ability to compete internationally.

**GSE may pursue new acquisitions and joint ventures, and any of these transactions could adversely affect its operating results or result in increased costs or other related issues.**

The Company intends to pursue new acquisitions and joint ventures, a pursuit which could consume substantial time and resources. Identifying appropriate acquisition candidates and negotiating and consummating acquisitions can be a lengthy and costly process. The Company may also encounter substantial unanticipated costs or other related issues such as compliance with new regulations and regulatory schemes, additional oversight, elimination of redundancy, and increased employee benefits costs associated with the acquired businesses. The risks inherent in this strategy could have an adverse impact on the Company's results of operation or financial position.

**The nuclear power industry, the Company's largest customer group, is associated with a number of hazards which could create significant liabilities for the Company.**

The Company's business could expose it to third party claims with respect to product, environmental and other similar liabilities. Although the Company has sought to protect itself from these potential liabilities through a variety of legal and contractual provisions as well as through liability insurance, the effectiveness of such protections has not been fully tested. Certain of the Company's products and services are used by the nuclear power industry primarily in operator training. Although the Company's contracts for such products and services typically contain provisions designed to protect the Company from potential liabilities associated with such use, there can be no assurance that the Company would not be materially adversely affected by claims or actions which may potentially arise.

**The Company, as a 10% owner of ESA, has provided a partial guarantee totaling \$1.2 million for the credit facility that Union National Bank has extended to ESA. ESA is a start-up entity; if it is unable to generate sufficient cash flow from operations and defaults on its credit facility, GSE may have to provide up to \$1.2 million to Union National Bank to cover ESA's obligations.**

In May 2007, the Company deposited \$1.2 million into a restricted, interest-bearing account at Union National Bank (“UNB”) in the United Arab Emirates as a partial guarantee for the \$11.8 million credit facility that UNB has extended to ESA. The guarantee will be in place until the expiration of the ESA credit facility on December 31, 2014 or earlier if ESA pays down and terminates the facility. Both of the other two owners of ESA, Al Qudra Holding PJSC and the Centre of Excellence for Applied Research and Training, both located in the United Arab Emirates, have each provided to UNB a bank guarantee for 100% of the \$11.8 million ESA credit facility. In the event that ESA should default upon their UNB loan, UNB can utilize all or a portion of the guarantees that the three owners have provided to cover ESA’s outstanding borrowings against the credit facility and accrued interest payable. Thus, if such a default were to occur, GSE may incur a loss of up to \$1.2 million.

**In January 2006, the Company received a \$15.1 million contract from ESA to supply five simulators and an integrated training program. Under the terms of the contract, the Company provided a \$2.1 million performance bond to ESA that will remain outstanding until the end of the warranty period on October 31, 2008.**

The Company has provided a cash-collateralized standby letter of credit to ESA which can be drawn upon by ESA in the event the Company fails to cure a material breach of the contract within 30 days of receiving written notice from ESA regarding the nature of the breach. Although the contract is expected to be complete by the end of October 2007 and no such material breach is expected, if ESA were to draw upon the standby letter of credit, GSE would incur a loss of up to \$2.1 million.

**Our stock price may be volatile and could experience substantial declines.**

The market price of our common stock has experienced historical volatility and might continue to experience volatility in the future in response to quarter-to-quarter variations in operating results, changes in backlog and new business results, the issuance of analysts’ reports, market conditions in the industry, changes in governmental regulations, and changes in general conditions in the economy or the financial markets.

The general equity markets have also experienced significant fluctuations in value. This volatility and the market variability has affected the market prices of securities issued by many companies, often for reasons unrelated to their operating performance, and may adversely affect the price of our common stock.

**We only have a limited number of shares of Common Stock available for sale, which could affect our ability to raise additional equity capital.**

As a result of the issuance of the shares in our recent private placement (including the shares we are required to reserve for issuance upon exercise of the warrants we issued or may be required to issue) we have only 238,648 additional authorized shares of common stock that are not issued or otherwise reserved for issuance. As a result, our ability to raise additional equity capital in the short term will be limited. To increase the number of authorized shares of our common stock, we will be required to obtain stockholder approval and we cannot assure you that that such approval can be obtained.

**Investors should not anticipate receiving cash dividends on our Common Stock.**

We have not paid any dividends on our common stock and do not anticipate paying cash dividends in the foreseeable future. We intend to retain any earnings to finance the growth of our business and we may never pay cash dividends. In addition, under the terms of our line of credit agreement with Laurus Master Fund Ltd., we are prohibited from paying any dividends on our common stock.

## **FORWARD-LOOKING STATEMENTS**

This prospectus and the documents incorporated by reference herein contain “forward-looking” statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act that are based on management’s assumptions, expectations and projections about us, and the industry within which we operate, that have been made pursuant to the Private Securities Litigation Reform Act of 1995 which reflect our expectations regarding our future growth, results of operations, performance and business prospects and opportunities. Wherever possible, words such as “anticipate,” “believe,” “continue,” “estimate,” “intend,” “may,” “plan,” “potential,” “predict,” “expect,” “should,” “will” and expressions, or the negative of these terms or other comparable terminology, have been used to identify these forward-looking statements. These forward-looking statements may also use different phrases. These statements regarding our expectations reflect our current beliefs and are based on information currently available to us. Accordingly, these statements by their nature are subject to risks and uncertainties, including those listed under “Risk Factors,” which could cause our actual growth, results, performance and business prospects and opportunities to differ from those expressed in, or implied by, these statements. Discussions containing these forward-looking statements may be found, among other places, in “Business” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” incorporated by reference from our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q subsequent to the filing of our most recent annual report on Form 10-K with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. Except as otherwise required by federal securities law, we are not obligated to update or revise these forward-looking statements to reflect new events or circumstances. We caution you that a variety of factors, including but not limited to the factors described under the heading “Risk Factors” and the following, could cause our business conditions and results to differ materially from what is contained in forward-looking statements:

- changes in the rate of economic growth in the United States and other major international economies;
- changes in investment by the nuclear and fossil electric utility industry, the chemical and petrochemical industries and the U.S. military;
  - changes in the financial condition of our customers;
    - changes in regulatory environment;
    - changes in project design or schedules;
      - contract cancellations;
  - changes in our estimates of costs to complete projects;
  - changes in trade, monetary and fiscal policies worldwide;
    - currency fluctuations;
- war and/or terrorist attacks on facilities either owned or where equipment or services are or may be provided;
  - outcomes of future litigation;
- protection and validity of our patents and other intellectual property rights;
  - increasing competition by foreign and domestic companies;
  - compliance with our debt covenants;
- recoverability of claims against our customers and others; and
- changes in estimates used in our critical accounting policies.

Other factors and assumptions not identified above were also involved in the formation of these forward looking statements and the failure of such other assumptions to be realized, as well as other factors, may also cause actual results to differ materially from those projected. Most of these factors are difficult to predict accurately and are generally beyond our control. You should consider the areas of risk described above in connection with any forward looking statements that may be made by us. You should not place undue reliance on any forward-looking statements. New factors emerge from time to time, and it is not possible for us to predict which factors will arise.

We undertake no obligation to publicly update any forward looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any additional disclosures we make in proxy statements, quarterly reports on Form 10-Q, annual reports on Form 10-K and current reports on Form 8-K filed with the SEC.

## USE OF PROCEEDS

We will not receive any of the proceeds from the sale of shares of our common stock by the selling stockholders. The proceeds from the sale of the common stock offered pursuant to this prospectus, including shares of our common stock issued upon exercise of the warrants, are solely for the accounts of the selling stockholders.

The selling stockholders will pay any underwriting discounts and commissions and expenses incurred by the selling stockholders for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholders in disposing of the shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration and filing fees and fees and expenses of our counsel and our accountants.

A portion of the shares covered by this prospectus are issuable upon exercise of warrants to purchase our common stock. Upon any exercise for cash of the warrants, the selling stockholders will pay us the exercise price of the warrants. The cash exercise price of the warrants is \$6.00 per share. Any proceeds we receive from the exercise of outstanding warrants on a cash basis will be used for general corporate purposes. The warrants are also exercisable on a cashless basis. We will not receive any cash payment from the selling stockholders upon any exercise of the warrants on a cashless basis.

## PRIVATE PLACEMENT OF COMMON STOCK AND WARRANTS

On June 22, 2007, we sold and issued in a private placement to a select group of institutional accredited investors a total of 1,666,667 shares of our common stock at a price of \$6.00 per share, pursuant to the terms of a securities purchase agreement. As part of the transaction, the purchasers received, for no additional consideration, warrants to purchase 166,667 shares of our common stock at an exercise price of \$6.00 per share. The warrants are immediately exercisable and expire on June 22, 2012.

The gross proceeds we received from the private placement were approximately \$10,000,000. A portion of the funds were used to pay down the outstanding borrowings under our line of credit with Laurus Master Fund, Ltd (as required by the terms thereof) and the balance is expected to be used for working capital purposes.

In connection with the private placement, we entered into a registration rights agreement with the purchasers providing for the filing of a registration statement with the Securities and Exchange Commission registering the shares issued in the private placement as well as the shares issuable upon exercise of the warrants. We are obligated to use our commercially reasonable efforts to (i) file the registration statement within 60 days of the closing date of the private placement, or August 21, 2007, (ii) file a request for acceleration of the effectiveness of the registration statement within five trading days after the Company has been advised that the Registration Statement will not be "reviewed," or not subject to further review, (iii) prior to the effective date of the registration statement, file a pre-effective amendment and otherwise respond in writing to comments made by the Commission within 15 calendar days after the receipt, (iv) cause the registration statement to be declared effective no later 120 day after the closing date of the private placement, or October 20, 2007, (v) after its effective date, cause the Registration Statement to remain continuously effective as to all the shares covered thereby, other than for an aggregate of more than 30 consecutive trading days or for more than an aggregate of 60 trading days in any 12-month period. In the event of a default of any of the foregoing obligations, we will be required to issue to each purchaser, as liquidated damages, on the date the foregoing default occurs and each monthly anniversary thereafter, a number of warrants (on the same terms as the warrants) equal to 2% of the number of shares then held by such purchaser, not to exceed 10% of the total number of shares then held by such purchaser (or warrants to acquire 166,667 shares of common stock in the aggregate, collectively, the "liquidated damages warrants"), and thereafter cash, in an amount equal to 2% of the aggregate purchase price paid by such purchaser, not to exceed 30% of the aggregate purchase price paid by such

purchaser.

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Each of the selling stockholders has agreed not to engage, directly or indirectly, in any short sales involving the Company's securities until the earlier of (a) 60 days following the closing date of the private placement, or August 21, 2007 and (ii) the effective date of the registration statement, of which this prospectus is a part.

In connection with the transaction, we paid Roth Capital Partners, LLC, the placement agent, a fee of \$600,000 and reimbursed the placement agent \$48,000 in expenses.

The description of the terms of the securities purchase agreement, warrant and registration rights agreement in this prospectus is a summary and does not purport to be a complete description of those terms. You should refer to the full text of the documents, which are filed as an exhibit to the registration statement of which this prospectus is a part.

### SELLING STOCKHOLDERS

The shares of common stock being offered by the selling stockholders are those previously issued to the selling stockholders and those issuable to the selling stockholders upon exercise of the warrants. For additional information regarding the issuances of common stock and the warrants, see "Private Placement of Common Stock and Warrants" above. We are registering the shares of common stock in order to permit the selling stockholders to offer the shares for resale from time to time. Except for the ownership of the shares of common stock and the warrants, the selling stockholders have not had any material relationship with us within the past three years.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. The second column lists the number of shares of common stock beneficially owned by each selling stockholder, based on its ownership of the shares of common stock and the warrants, as of June 22, 2007, assuming exercise of the warrants held by the selling stockholders on that date.

The third column lists the shares of common stock being offered by this prospectus by the selling stockholders.

In accordance with the terms of registration rights agreements with the holders of the shares of common stock and the warrants, this prospectus generally covers the resale of the sum of (i) the number of shares of common stock issued and (ii) the shares of common stock issued and issuable upon exercise of the related warrants and any warrants that may be issued as liquidated damages under the registration rights agreement, determined as if the outstanding warrants were exercised, as applicable, in full, as of the trading day immediately preceding the date this registration statement was initially filed with the Securities and Exchange Commission. The fourth column assumes the sale of all of the shares offered by the selling stockholders pursuant to this prospectus.

The selling stockholders may sell all, some or none of their shares in this offering. See "Plan of Distribution."

<b>Name of Selling Stockholder</b>	<b>Number of Shares of Common Stock Owned Prior to Offering</b>	<b>Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus</b>	<b>Number of Shares of Common Stock Owned After Offering</b>
Ashdon Select Manager Trust-Ashdon Investment Management, LLC (10)	12,360(1)	12,360	0
Compass SAV, LLC (10)	139,200(2) 139,200(3)	139,200 139,200	0 0

US Dollar Cell of Compass Offshore  
SAV PCC, Ltd. (10)

Daimler Chrysler Retirement Trust (10)	295,200(4)	295,200	0
Harry-Anna Investment Fund, Inc. (10)	86,400(5)	86,400	0
Hallador Equity Fund, LLC (10)	55,200(6)	55,200	0
Peninsula Master Fund Ltd. (11)	600,000(7)	600,000	0
QueensCare, Inc. (10)	61,680 (8)	61,680	0
Westcliff Fund, LP (10)	610,761(9)	610,761	0

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(1) Consists of (a) 10,300 shares of common stock owned directly by the selling stockholder, (b) 1,030 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 1,030 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(2) Consists of (a) 116,000 shares of common stock owned directly by the selling stockholder, (b) 11,600 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 11,600 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(3) Consists of (a) 116,000 shares of common stock owned directly by the selling stockholder, (b) 11,600 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 11,600 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(4) Consists of (a) 246,000 shares of common stock owned directly by the selling stockholder, (b) 24,600 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 24,600 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(5) Consists of (a) 72,000 shares of common stock owned directly by the selling stockholder, (b) 7,200 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 7,200 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(6) Consists of (a) 46,000 shares of common stock owned directly by the selling stockholder, (b) 4,600 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 4,600 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(7) Consists of (a) 500,000 shares of common stock owned directly by the selling stockholder, (b) 50,000 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 50,000 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(8) Consists of (a) 51,400 shares of common stock owned directly by the selling stockholder, (b) 5,140 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 5,140 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(9) Consists of (a) 508,967 shares of common stock owned directly by the selling stockholder, (b) 50,897 shares of common stock that may be acquired upon exercise of the warrants owned directly by the selling stockholder, and (c) 50,897 shares of common stock that may be acquired upon exercise of the liquidated damages warrants that may be issued to the selling stockholder.

(10) Richard S. Spencer III, in his capacity as managing member of Westcliff Capital Management, LLC, the general partner of Westcliff Fund L.P., and the investment advisor for Ashdon Select Manager Trust-Ashdon Investment Management, LLC, Compass SAV, LLC, US Dollar Cell of Compass Offshore SAV PCC, Ltd., Daimler Chrysler Retirement Trust, Harry-Anna Investment Fund, Inc., Hallador Equity Fund, LLC, and QueensCare, Inc. holds the power to vote or dispose of the shares held by those entities. Mr. Spencer and Westcliff Capital Management, LLC each disclaims beneficial ownership as to those shares. In addition, certain other funds, of which Westcliff Capital Management, LLC, is either the general partner or investment advisor, also own shares of our common stock.

(11) Scott A. Bedford, in his capacity as the managing member of Peninsula Capital Management LP, the investment manager to Peninsula Master Fund Ltd. holds the power to vote or dispose of the shares held by such entity. Mr. Bedford and Peninsula Capital Management LP each disclaims beneficial ownership as to those shares.

### **PLAN OF DISTRIBUTION**

We are registering the shares of Common Stock issued to the selling stockholders and issuable upon exercise of the warrants to permit the resale of these shares of Common Stock by the holders of the shares of Common Stock and warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of Common Stock. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock.

The selling stockholders may sell all or a portion of the shares of Common Stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of Common Stock may be sold on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions. The selling stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
  - purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
  - an exchange distribution in accordance with the rules of the applicable exchange;
  - privately negotiated transactions;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;

- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;

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- through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;
  - a combination of any such methods of sale; and
  - any other method permitted pursuant to applicable law.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, as permitted by that rule, or Section 4(1) under the Securities Act, if available, rather than under this prospectus, provided that they meet the criteria and conform to the requirements of those provisions.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. If the selling stockholders effect such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with NASD Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with NASD IM-2440.

In connection with sales of the shares of Common Stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of Common Stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of Common Stock short and if such short sale shall take place after the date that this Registration Statement is declared effective by the Commission, the selling stockholders may deliver shares of Common Stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the selling stockholders have been advised that they may not use shares registered on this registration statement to cover short sales of our common stock made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the SEC.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the warrants or shares of Common Stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of Common Stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended, 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 stockholders also may transfer and donate the shares of Common Stock 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 stockholders and any broker-dealer or agents participating in the distribution of the shares of Common Stock may be deemed to be “underwriters” within the meaning of Section 2(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling Stockholders who are “underwriters” within the meaning of Section 2(11)

of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Each selling stockholder has informed the Company that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the Common Stock. Upon the Company being notified in writing by a selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of each such selling stockholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such the shares of Common Stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction. In no event shall any broker-dealer receive fees, commissions and markups, which, in the aggregate, would exceed eight percent (8%).

Under the securities laws of some states, the shares of Common Stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of Common Stock 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 any selling stockholder will sell any or all of the shares of Common Stock registered pursuant to the shelf registration statement, of which this prospectus forms a part.

The selling stockholder and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended, 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 of Common Stock 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 of Common Stock to engage in market-making activities with respect to the shares of Common Stock. All of the foregoing may affect the marketability of the shares of Common Stock and the ability of any person or entity to engage in market-making activities with respect to the shares of Common Stock.

We will pay all expenses of the registration of the shares of Common Stock pursuant to the registration rights agreement, including, without limitation, Securities and Exchange Commission filing fees and expenses of compliance with state securities or "blue sky" laws; *provided, however*, that a selling stockholder will pay all underwriting discounts and selling commissions, if any and any related legal expenses incurred by it. We will indemnify the selling stockholders against certain liabilities, including some liabilities under the Securities Act, in accordance with the registration rights agreements, or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus, in accordance with the related registration rights agreements, or we may be entitled to contribution.

## LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus has been passed upon by Duane Morris LLP, New York, New York.

## EXPERTS

The consolidated financial statements of GSE Systems, Inc. as of December 31, 2006 and 2005, and for each of the years in the three-year period ended December 31, 2006 have been incorporated by reference herein and in the

registration statement in reliance upon the report of KPMG LLP, an independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in auditing and accounting. The audit report covering the December 31, 2006 financial statements refers to a change in accounting for share based payments as the Company adopted Statement of Financial Accounting Standards No. 123 (Revised 2004), *Share-Based Payment*, on January 1, 2006.

## WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy any documents we file at the Securities and Exchange Commission's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the Securities and Exchange Commission at 1-800-SEC-0330 for information on the operation of the Public Reference Room. Our Securities and Exchange Commission filings are also available to the public from the Securities and Exchange Commission's Website at "<http://www.sec.gov>."

The Securities and Exchange Commission allows us to "incorporate by reference" the information we file with them, 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 part of this prospectus, and information we later file with the Securities and Exchange Commission will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings we will make with the Securities and Exchange Commission under Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act until this offering is completed:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2006;
- Our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2007;
- Our Current Reports on Form 8-K filed on February 8, 2007, March 12, 2007, April 3, 2007, April 6, 2007, May 16, 2007, June 18, 2007, June 25, 2007 and July 24, 2007; and
- The description of our common stock contained in the Registration Statement on Form 8-A filed on July 24, 1995, under Section 12(g) of the Securities Exchange Act of 1934, as amended.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

GSE Systems, Inc.

7133 Rutherford Road, Suite 200

Baltimore, Maryland 21244

Attn: Secretary

(410) 277-3740

You should rely only on the information incorporated by reference or provided in this prospectus or any prospectus supplement. We have not authorized anyone else to provide you with different information. This prospectus is not an offer of our common stock in any state where the offer is not permitted. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents.