ONCOLYTICS BIOTECH INC
Form 20-F
June 27, 2003

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

Form 20-F

(Mark One)

[_] **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

[X] **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended **December 31, 2002**

OR

[_] **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission file number 0-15276

ONCOLYTICS BIOTECH INC

(exact name of Registrant as specified in its charter)

Province of Alberta, Canada
(Jurisdiction of incorporation or organization)

Sutie #210, 1167 Kensington Crescent N.W., Calgary, Alberta, Canada, T2N 1X7
(Address of principal executive offices)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Name of each exchange on which registered
Common Shares without par value	

NASDAQ Small Cap

Securities registered or to be registered pursuant to Section 12(g) of the Act.

None
(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

None
(Title of Class)

As at June 19, 2003 the total number of issued and outstanding common shares of Oncolytics Biotech Inc. was 24,551,960.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes [X] No ____

Indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 ____ Item 18 [X]

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Note Regarding Forward Looking Statements

Certain statements in this document constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Oncolytics Biotech Inc. (Oncolytics , or the Company), or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements.

Forward-looking statements are statements that are not historical facts, and include but are not limited to, estimates and their underlying assumptions; statements regarding plans, objectives and expectations with respect to the efficacy of the Company s technologies; the timing and results of clinical studies related to the Company s technologies; future operations, products and services; the impact of regulatory initiatives on the Company s operations; the size of and opportunities related to the markets for the Company s technologies; general industry and macroeconomic growth rates; expectations related to possible joint and/or strategic ventures and statements regarding future performance. Forward-looking statements generally, but not always, are identified by the words expects, anticipates, believes, intends, estimates, project potential , possible and similar expressions, or that events or conditions will, may, could or should occur.

The forward-looking statements in this Annual Report are subject to various risks and uncertainties, most of which are difficult to predict and generally beyond the control of the Company, including without limitation:

- uncertainty as to the Company's ability to achieve the goals and satisfy assumptions of management;
- the uncertainties related to the outcome of clinical studies and the long process related to such studies;
- the need for regulatory approvals to market REOLYSIN(R)and other products of the Company;
- the Company's need for additional financing which may not be available on acceptable terms or at all;
- uncertainty as to whether the Company will be able to complete any licensing, partnering or marketing arrangements for its technologies;
- uncertainty as to the market acceptance of the Company's products and the Company's ability to generate sufficient revenues to make its products and technologies commercially viable;
- the intense competition in the biotechnology industry and risks related to changing technology that may render the Company's technology obsolete; and
- other factors identified under the heading Risk Factors , and those that are discussed or identified in the Company s other public filings with the SEC.

The Company s actual results, performance or achievement could differ significantly from those expressed in, or implied by, the Company s forward-looking statements. Accordingly, the Company cannot assure that any of the events anticipated by the Company s forward-looking statements will occur, or if they do, what impact they will have on the Company s results of operations and financial condition.

Forward-looking statements are based on the beliefs, opinions and expectations of the Company s management at the time they are made, and the Company does not assume any obligation to update its forward-looking statements if those beliefs, opinions, or expectations, or other circumstances, should change.

For all of the reasons set forth above, investors should not place undue reliance on forward-looking statements.

GLOSSARY OF TERMS

In this Annual Report, unless the context otherwise requires, the following words and phrases shall have the meaning set forth below:

ABCA *Business Corporations Act* (Alberta), as amended.

ACB Alberta Cancer Board.

Activating mutations a type of genetic mutation that results in a particular protein being active in the absence of an appropriate stimuli. This type of mutation typically leads to the development of a cancerous transformation of a cell.

Adjuvant therapy a form of therapy that is to be used in conjunction with one or more addition therapies.

Animal model a human disease given to an animal which exhibits similar or identical characteristics to this disease in humans.

Appropriate Regulatory Authority means (a) Health Canada, (b) the Food and Drug Administration in the United States, or (c) the comparable authorities in the following countries or areas: United Kingdom, France, Germany, Japan and Benelux (Belgium, Netherlands, and Luxemburg).

Asymptomatic without any signs or symptoms.

Cancer a heterogeneous group of diseases that is characterized by the uncontrolled or aberrant growth of cells. In addition to the uncontrolled growth of these tumour cells, these cells are able to invade and colonize other sites in the body; by definition these tumours are malignant.

Carcinomas a type of cancer that arises from epithelial tissue.

Cellular proliferative disorder a heterogeneous group of diseases characterized by the uncontrolled or aberrant growth of cells; is distinct from cancer in that it does not necessarily imply a malignant state.

Cytostatic any drug or agent that is capable of preventing a cell s growth and division.

Cytotoxic any drug or agent that is capable of causing cell death.

Differentiation a form of growth; a process whereby a cell develops different or more advanced processes than were possessed by the cell before.

Dose limiting toxicity (DLT) the highest dose of a compound that when administered produces severe or life-threatening toxicity.

Epidermal growth factor a compound that promotes the growth of cells.

Epidermal growth factor receptor the cellular receptor that interacts with the epidermal growth factor; a particular family of receptor tyrosine kinases.

Epithelial the tissue that forms the outer layer of the body surface or the tissue that lines the gut or other hollow structure.

Etiology the reason or causation of an illness, disease or disorder.

FDA the Food and Drug Administration

Gastrointestinal tract within the digestive system including the stomach, intestine, and all accessory organs.

Glioblastoma a specific form of cancer derived from brain tissue.

Gliomas a specific group of cancers derived from brain tissue.

Good Manufacturing Practices the current regulatory requirements and standards regarding quality assurance procedures to be adhered to in the manufacturing of therapeutic products established and monitored by various governments including Canada and the United States.

Growth factor receptor a form of receptor that interacts with growth factors.

HER2/neu/ErbB2 a form of receptor tyrosine kinase that is frequently overexpressed in breast cancers.

Heritage Foundation the Alberta Heritage Foundation for Medical Research.

Immune competent an animal with a fully functional immune system; an animal that can mount a response to a foreign or infectious agent.

Immuno-compromised an animal that lacks a fully functioning immune system.

Investigational New Drug Submission (or IND) documentation filed with government agencies responsible for evaluating and licensing pharmaceutical drugs. This documentation is necessary for the initiation of clinical trials.

In Vivo in the living body.

In Vitro in an artificial environment, such as a test tube or petrie dish.

Lesion a morbid change in the functioning or texture of an organ or tissue.

Malignant disease refers to a tumour that tends to invade normal tissue and/or to reoccur after removal; cancerous.

Maximum tolerated dose (MTD) the highest does of a compound that can be delivered before any toxic effects can be observed.

Metastasize the process whereby a tumour cell is able to leave the original tumour mass and spread to secondary sites in the body forming additional tumour sites.

Mitogenic a drug or agent that promotes cellular division or growth.

Myeloid leukemia a specific type of leukemia.

Neoplasia a group of diseases characterized by uncontrolled cell growth, including, but not limited to, cancer.

Nucleus an organelle in the cell that contains genetic material.

Oncology the study and treatment of cancer and tumours.

Overexpression the presence of cellular components in a cell in excess of amounts that would be expected to be found in a normal cell.

Patent Cooperation Treaty or PCT an international patent treaty, of which Canada is a signatory, whereby a single international patent application can be filed in the applicant s or inventor s home country for possible protection of intellectual property in over 100 PCT member countries.

PKR (or double stranded RNA dependent protein kinase) a host protein that plays a key role in regulating the cell s antiviral activity.

Platelet-derived growth factor receptor (PDGFR) the cellular receptor that interacts with the platelet-derived growth factor.

Ras a cellular protein that is a key relay in the transmission of growth signals from the outside of the cell to the cell s nucleus. In a noncancerous cell, Ras is activated in the presence of an appropriate growth signal.

Receptor a cellular structure, usually found on the cell surface, that can interact with a certain compound to elicit a specific type of cellular response.

Receptor tyrosine kinase (RTK) a cellular receptor that interacts with a specific molecule such as a growth factor, to initiate cellular signaling to the nucleus. Mutation or overexpression of this type of receptor is frequently seen in the development of a variety of cancers.

REOLYSIN® is a trademark of the Company for the human reovirus for the treatment of a specific disease.

Reovirus a double stranded RNA virus first identified in 1959. The name is an acronym for Respiratory Enteric Orphan virus. The virus is given the designate of orphan virus since it is not associated with a known disease state. For the purpose of this prospectus, most reference to reovirus is to reovirus type III Dearing.

RNA ribonucleic acid; a chemical found in cells.

Share Purchase Agreement the share purchase agreement among the Vendors, SYNSORB and the Company dated April 21, 1999 providing for the purchase by SYNSORB of all of the issued and outstanding shares in the capital of the Company.

Signal Transduction The transmission of signals from the cell surface to the cell s nucleus.

Synchronous lesion a lesion other than the lesion being treated that is present during the treatment course.

SYNSORB SYNSORB Biotech Inc. (now Hawker Resources Inc. by name change), a Canadian public company incorporated under the ABCA.

Technology Commercialization Agreement the agreement between the Company and the Heritage Foundation dated February 9, 1999 providing for a repayable grant of $150,000 to the Company to offset reovirus clinical trial expenditures.

Toxicology the scientific determination of the quantity of a substance that is required to act adversely in the body.

Tumour an abnormal growth of tissue whether benign or malignant.

Vendors Dr. Patrick Lee, Dr. James Strong, Dr. Matthew Coffey, Dr. Bradley Thompson and University Technologies International Inc.

PART I

Item 1 Identity of Directors, Senior Management and Advisors

Not applicable

Item 2 Offer Statistics and Expected Timetable

Not applicable

Item 3 Key Information

A. Selected Financial Data

The following table sets forth selected financial data regarding the Company s operating results and financial position in Canadian dollars. See Currency Translations . The data has been derived from the Company s financial statements, which have been prepared in accordance with Canadian generally accepted accounting principles (Canadian GAAP). For a reconciliation to United States generally accepted accounting principles (U.S. GAAP), see note 15 to the financial statements. The following selected financial data is qualified in its entirety by, and should be read in conjunction with, the financial statements and notes thereto included elsewhere in this Annual Report and managements discussion and analysis of results of operations and liquidity and capital resources. See Item 5, Operating and Financial Review and Prospects . The comparability of the financial data presented is affected by factors such as significant changes in clinical and production activities, financings and changes in general corporate activities. See Item 3.D, Risk Factors .

Selected Financial Data

	Year ended December 31, 2002	Year ended December 31, 2001	Year ended December 31, 2000	Year ended December 31, 1999	Period from Inception on April 2, 1998 to December 31, 1998
Operating Revenue(1)	nil	nil	$ 310,000	nil	nil
Net Loss (2)(8)	$ 6,091,486	$ 6,171,461	$3,613,152	$ 574,462	nil
Net Loss U.S. GAAP	$ 6,377,604	$ 6,150,531	$3,559,214	$ 3,074,462	nil
Basic Loss per common share (3)(7)	$ 0.30	$ 0.34	$ 0.22	$ 0.10	nil
Basic Loss per common share U.S. GAAP	$ 0.31	$ 0.34	$ 0.22	$ 0.52	nil
Cash dividends declared	nil	nil	nil	nil	nil

	As at December 31				
	2002	2001	2000	1999	1998
Total Assets (4)	$17,968,154	$19,072,559	$21,658,403	$ 7,163,823	$ 83,504
Total Assets U.S. GAAP	$12,787,590	$15,999,809	$18,224,153	$ 4,663,823	$ 83,504
Net Assets	$16,558,015	$15,953,878	$19,915,323	$ 6,927,720	$ 4
Net Assets U.S. GAAP	$11,377,351	$13,528,746	$17,469,261	$ 4,427,720	$ 4
Share Capital	$30,305,858	$23,812,953	$21,602,937	$ 5,002,182	$ 4
Shares outstanding (#)(6)	22,145,284	19,191,395	17,488,805	13,669,997	2,145,300
Total cash (5)	$ 8,319,244	$14,970,756	$17,619,110	$ 4,549,177	$ 1,610
Total Long-term Debt (7)	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000

Notes:

(1) The Company received revenues related to rights to the reovirus for use as a potential treatment for cancer in animals in late 2000. The Company did not receive any similar revenues during the previous or subsequent periods. The only other income received was interest of $208,867 in 2002, $655,212 in 2001, $905,690 in 2000 and $2,909 in 1999 from cash balances. There were no extraordinary items included in net loss for the periods referred to above.

(2) Net loss for 2002 was net of income tax recovery of $647,618 ($340,570 2001; $126,812 2000), related to the introduction of the liability method of tax allocation effective January 1, 2000. See note 13 to the financial statements.

(3) Diluted loss per common share has not been presented as the effect on loss per share would be anti-dilutive. The basic loss per common share for each period was calculated using the weighted average number of common shares outstanding during the period.

(4) In 1999 asset values include application of push down accounting and future tax liability accounting. See note 2 to the financial statements.

(5) Cash in 2002 includes the proceeds from a private placement and the exercise of stock options. Cash in 2001 includes the proceeds from the exercise of stock options and warrants. Cash in 2000 includes the proceeds from a public offering, a private placement and stock options. Cash in 1999 includes the proceeds from two private placements and the Company s initial public offering.

(6) Number of shares issued and outstanding as at December 31.

(7) The long-term debt represents repayable loans from the Heritage Foundation.

(8) There is no difference between net loss and net loss from operations during the period from inception through 2002.

Currency Translations

The following table sets forth the exchange rates for one Canadian dollar ($) expressed in terms of United States dollars (US$) in effect at the end of the following periods, and the average exchange rates (based on the average of the exchange rates on the last day of each month in such periods) and the range of high and low exchange rates for such periods.

	Year ended December 31st					
	2002	**2001**	**2000**	**1999**	**1998**	**1997**
End	0.6329	0.6275	0.6666	0.6925	0.6504	0.6999
Average	0.6368	0.6461	0.6740	0.6744	0.6715	0.7198
High	0.6619	0.6714	0.6983	0.6925	0.7105	0.7487
Low	0.6200	0.6227	0.6397	0.6535	0.6341	0.6945

The following table sets forth the high and low exchange rates for one Canadian dollar expressed in terms of one United States dollar for the last six months.

	May 2003	**April 2003**	**March 2003**	**February 2003**	**January 2003**	**December 2002**
High	0.7437	0.6975	0.6822	0.6720	0.6570	0.6461
Low	0.7032	0.6737	0.6709	0.6530	0.6349	0.6329

Exchange rates are based upon the noon buying rate in New York City for cable transfers in foreign currency as certified for customs purposes by the Federal Reserve Bank of New York. The noon rate of exchange on June 20, 2003 as reported by the United States Federal Reserve Bank of New York for the conversion of one Canadian dollar into United States dollars was $1.00 = US$0.7358.

In this Annual Report on Form 20-F, unless otherwise specified, all monetary amounts are expressed in Canadian dollars.

B. Capitalization and Indebtedness

Not applicable

C. Reason for the Offer and Use of Proceeds

Not applicable

D. Risk Factors

All of the Company s potential products, including REOLYSIN®, are in the research and development stage and will require further development and testing before they can be marketed commercially.

Prospects for companies in the biotechnology industry generally may be regarded as uncertain given the nature of the industry and, accordingly, investments in biotechnology companies should be regarded as speculative. The Company is currently in the research and development stage on one product, REOLYSIN®, for human application, the riskiest stage for a company in the biotechnology industry. It is not possible to predict, based upon studies in animals, whether REOLYSIN® will prove to be safe and effective in humans. REOLYSIN® will require additional research and development, including extensive clinical testing, before the Company will be able to obtain the approvals of the United States Food and Drug Administration (the FDA), Health Canada, and similar regulatory authorities in other countries to market REOLYSIN® commercially. There can be no assurance that the research and development programs conducted by the Company will result in REOLYSIN® or any other products becoming commercially viable products, and in the event that any product or products result from the research and development program, it is unlikely they will be commercially available for a number of years.

To achieve profitable operations the Company, alone or with others, must successfully develop, introduce and market its products. To obtain regulatory approvals for products being developed for human use, and to achieve commercial success, human clinical trials must demonstrate that the product is safe for human use and that the product shows efficacy. Unsatisfactory results obtained from a particular study relating to a program may cause the Company to abandon its commitment to that program or the product being tested. No assurances can be provided that any current or future animal or human test, if undertaken, will yield favourable results. If the Company is unable to establish that REOLYSIN® is a safe, effective treatment for cancer, it may be required to abandon further development of the product and develop a new business strategy.

There are inherent risks in pharmaceutical research and development

Pharmaceutical research and development is highly speculative and involves a high and significant degree of risk. The marketability of any product developed by the Company will be affected by numerous factors beyond the Company s control, including:

- the discovery of unexpected toxicities or lack of sufficient efficacy of products which make them unattractive or unsuitable for human use;
- preliminary results as seen in animal and/or limited human testing may not be substantiated in larger controlled clinical trials;
- manufacturing costs or other factors may make manufacturing of products impractical and non-competitive;
- proprietary rights of third parties or competing products or technologies may preclude commercialization;
- requisite regulatory approvals for the commercial distribution of products may not be obtained; and
- other factors may become apparent during the course of research, up-scaling or manufacturing which may result in the discontinuation of research and other critical projects.

The Company s product under development has never been manufactured on a commercial scale, and there can be no assurance that such products can be manufactured at a cost or in a quantity to render such products commercially viable. Production and utilization of the Company s products may require the development of new manufacturing technologies and expertise. The impact on the Company s business in the event that new manufacturing technologies and expertise are required to be developed is uncertain. There can be no assurance that the Company will successfully meet any of these technological challenges, or others that may arise in the course of development.

Pharmaceutical products are subject to intense regulatory approval processes

The regulatory process for pharmaceuticals, which includes preclinical studies and clinical trials of each compound to establish its safety and efficacy, takes many years and requires the expenditure of substantial resources. Moreover, if regulatory approval of a drug is granted, such approval may entail limitations on the indicated uses for which it may be marketed. Failure to comply with applicable regulatory requirements can, among other things, result in suspension of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution. Further, government policy may change, and additional government regulations may be established that could prevent or delay regulatory approvals for the Company s products. In addition, a marketed drug and its manufacturer are subject to continual review. Later discovery of previously unknown problems with the product or manufacturer may result in restrictions on such product or manufacturer, including withdrawal of the product from the market.

The FDA in the United States and Health Canada in Canada may deny approval of a product if required regulatory criteria are not satisfied, or may require additional testing. Product approvals may be withdrawn if compliance with regulatory standards is not maintained or if problems occur after the product reaches the market. The FDA and Health Canada may require further testing and surveillance programs to monitor the pharmaceutical product that has been commercialized. Non-compliance with applicable requirements can result in fines and other judicially imposed sanctions, including product withdrawals, product seizures, injunction actions and criminal prosecutions.

In addition to its own pharmaceuticals, the Company may supply active pharmaceutical ingredients and advanced pharmaceutical intermediates for use in its customers drug products. The final drug products in which the pharmaceutical ingredients and advanced pharmaceutical intermediates are used, however, are subject to regulation for safety and efficacy by the FDA, Health Canada and other jurisdictions, as the case may be. Such products must be approved by such agencies before they can be commercially marketed. The process of obtaining regulatory clearance for marketing is uncertain, costly and time consuming. The Company cannot predict how long the necessary regulatory approvals will take or whether the Company s customers will ever obtain such approval for their products. To the extent that the Company s customers do not obtain the necessary regulatory approvals for marketing new products, the Company s product sales could be adversely affected.

Health Canada, the FDA and other governmental regulators have increased requirements for drug purity and have increased environmental burdens upon the pharmaceutical industry. Because pharmaceutical drug manufacturing is a highly regulated industry, requiring significant documentation and validation of manufacturing processes and quality control assurance prior to approval of the facility to manufacture a specific drug, there can be considerable transition time between the initiation of a contract to manufacture a product and the actual initiation of manufacture of that product. Any lag time in the initiation of a contract to manufacture product and the actual initiation of manufacture could cause the Company to lose profits or incur liabilities.

The pharmaceutical regulatory regime in Europe and other countries is, by and large, generally similar to that of Canada and the United States. The Company could face similar risks in these other jurisdictions, as the risks described above.

The Company s operations and products may be subject to other government manufacturing and testing regulations

Securing regulatory approval for the marketing of therapeutics by Health Canada in Canada and the FDA in the United States and similar regulatory agencies in other countries is a long and expensive process, which can delay or prevent product development and marketing. Approval to market products may be for limited applications or may not be received at all.

The products anticipated to be manufactured by the Company will have to comply with the FDA s current Good Manufacturing Practices (cGMP) and other FDA, Health Canada and local government guidelines and regulations, including other international regulatory requirements and guidelines. Additionally, certain of the Company s customers may require the manufacturing facilities contracted by the Company to adhere to additional manufacturing standards, even if not required by the FDA. Compliance with cGMP regulations requires manufacturers to expend time, money and effort in production, and to maintain precise records and quality control to ensure that the product meets applicable specifications and other requirements. The FDA and other regulatory bodies periodically inspect drug-manufacturing facilities to ensure compliance with applicable cGMP requirements. If the manufacturing facilities contracted by the Company fail to comply with the cGMP requirements, the facilities may become subject to possible FDA or other regulatory action and manufacturing at the facility could consequently be suspended. The Company may not be able to contract suitable alternative or back-up manufacturing facilities on terms acceptable to the Company or at all.

The FDA or other regulatory agencies may also require the submission of any lot of a particular product for inspection. If the lot product fails to meet the FDA requirements, then the FDA could take any of the following actions: (i) restrict the release of the product; (ii) suspend manufacturing of the specific lot of the product; (iii) order a recall of the lot of the product; or (iv) order a seizure of the lot of the product.

The Company is subject to regulation by governments in many jurisdictions and, if the Company does not comply with healthcare, drug, manufacturing and environmental regulations, among others, the Company s existing and future operations may be curtailed, and the Company could be subject to liability.

In addition to the regulatory approval process, the Company may be subject to regulations under local, provincial, state, federal and foreign law, including requirements regarding occupational health, safety, laboratory practices, environmental protection and hazardous substance control, and may be subject to other present and future local, provincial, state, federal and foreign regulations.

The biotechnology industry is extremely competitive and the Company must successfully compete with larger companies with substantially greater resources

Technological competition in the pharmaceutical industry is intense and the Company expects competition to increase. Other companies are conducting research on therapeutics involving the Ras pathway as well as other novel treatments or therapeutics for the treatment of cancer which may compete with the Company s product. Many of these competitors are more established, benefit from greater name recognition and have substantially greater financial, technical and marketing resources than the Company. In addition, many of these competitors have significantly greater experience in undertaking research, preclinical studies and human clinical trials of new pharmaceutical products, obtaining regulatory

approvals and manufacturing and marketing such products. In addition, there are several other companies and products with which the Company may compete from time to time, and which may have significantly better and larger resources than the Company. Accordingly, the Company s competitors may succeed in manufacturing and/or commercializing products more rapidly or effectively, which could have a material adverse effect on the Company s business, financial condition or results of operations.

The Company anticipates that it will face increased competition in the future as new products enter the market and advanced technologies become available. There can be no assurance that existing products or new products developed by the Company s competitors will not be more effective, or be more effectively manufactured, marketed and sold, than any that may be developed or sold by the Company. Competitive products may render the Company s products obsolete and uncompetitive prior to recovering research, development or commercialization expenses incurred with respect to any such products.

The Company relies on patents and proprietary rights to protect its technology

The Company s success will depend, in part, on its ability to obtain patents, maintain trade secret protection and operate without infringing the rights of third parties. The Company has patents in the United States, Canada and Europe and has filed applications for patents in the United States and under the PCT, allowing it to file in other jurisdictions. See Item 4. *Information on the Company Patent and Patent Application Summary*. The Company s success will depend, in part, on its ability to obtain, enforce and maintain patent protection for its technology in Canada, the United States and other countries. The Company cannot be assured that patents will issue from any pending applications or that claims now or in the future, if any, allowed under issued patents will be sufficiently broad to protect its technology. In addition, no assurance can be given that any patents issued to or licensed by the Company will not be challenged, invalidated, infringed or circumvented, or that the rights granted thereunder will provide continuing competitive advantages to the Company.

The patent positions of pharmaceutical and biotechnology firms, including the Company, are generally uncertain and involve complex legal and factual questions. In addition, it is not known whether any of the Company s current research endeavours will result in the issuance of patents in Canada, the United States, or elsewhere, or if any patents already issued will provide significant proprietary protection or will be circumvented or invalidated. Since patent applications in the United States and Canada are maintained in secrecy until at least 18 months after filing of the original priority application, and since publication of discoveries in the scientific or patent literature tends to lag behind actual discoveries by several months, the Company cannot be certain that it or any licensor was the first to create inventions claimed by pending patent applications or that it was the first to file patent applications for such inventions. Loss of patent protection could lead to generic competition for these products, and others in the future, which would materially and adversely affect the financial prospects for these products and the Company.

Similarly, since patent applications filed before October, 2000 in the United States are maintained in secrecy until the patents issue or foreign counterparts, if any, publish, the Company cannot be certain that it or any licensor was the first creator of inventions covered by pending patent applications or that it or such licensor was the first to file patent applications for such inventions. There is no assurance that the Company s patents, if issued, would be held valid or enforceable by a court or that a competitor s technology or product would be found to infringe such patents.

Accordingly, the Company may not be able to obtain and enforce effective patents to protect its proprietary rights from use by competitors, and the patents of other parties could require the Company to stop using or pay to use certain intellectual property, and as such, the Company s competitive position and profitability could suffer as a result.

In addition, the Company may be required to obtain licenses under patents or other proprietary rights of third parties. No assurance can be given that any licenses required under such patents or proprietary rights will be available on terms acceptable to the Company. If the Company does not obtain such licenses, it could encounter delays in introducing one or more of its products to the market while it attempts to design around such patents, or could find that the development, manufacture or sale of products requiring such licenses could be foreclosed. In addition, the Company could incur substantial costs in defending itself in suits brought against the Company on such patents or in suits in which the Company attempts to enforce its own patents against other parties.

The Company s products may fail or cause harm, subjecting the Company to product liability claims, which are uninsured

The sale and use of products of the Company entail risk of product liability. The Company currently does not have any product liability insurance. There can be no assurance that it will be able to obtain appropriate levels of product liability insurance prior to any sale of its pharmaceutical products. An inability to obtain insurance on economically feasible terms or to otherwise protect against potential product liability claims could inhibit or prevent the commercialization of products developed by the Company. The obligation to pay any product liability claim or a recall of a product could have a material adverse effect on the business, financial condition and future prospects of the Company.

The Company has limited manufacturing experience and intends to rely on third parties to commercially manufacture its products, if and when developed.

To date, the Company has relied upon a sole contract manufacturer to manufacture small quantities of REOLYSIN®. The manufacturer may encounter difficulties in scaling up production, including production yields, quality control and quality assurance. Only a limited number of manufacturers can supply therapeutic viruses and failure by the manufacturer to deliver the required quantities of REOLYSIN® on a timely basis at a commercially reasonable price may have a material adverse affect on the Company. The Company has recently completed its program for the development of a commercial process for manufacturing REOLYSIN® and has filed a number of patent applications related to the process. There can be no assurance that the Company will successfully obtain sufficient patent protection related to its manufacturing process.

New products may not be accepted by the medical community or consumers.

The Company s primary activity to date has been research and development and the Company has no experience in marketing or commercializing products. The Company will likely rely on third parties to market its products, assuming that they receive regulatory approvals. If the Company relies on third parties to market its products, the commercial success of such product may be outside of its control. Moreover, there can be no assurance that physicians, patients or the medical community will accept the Company s product, even if the Company s product proves to be safe and effective and is approved for marketing by Health Canada, the FDA and other regulatory authorities. A failure to successfully market its products would have a material adverse affect on the Company s revenue.

The Company s technologies may become obsolete

The pharmaceutical industry is characterized by rapidly changing markets, technology, emerging industry standards and frequent introduction of new products. The introduction of new products embodying new technologies, including new manufacturing processes, and the emergence of new industry standards may render the Company s products obsolete, less competitive or less marketable. The process of developing the Company s products is extremely complex and requires significant continuing development efforts

and third party commitments. The Company s failure to develop new technologies and products and the obsolescence of existing technologies could adversely affect its business.

The Company may be unable to anticipate changes in its potential customer requirements that could make the Company s existing technology obsolete. The Company s success will depend, in part, on its ability to continue to enhance its existing technologies, develop new technology that addresses the increasing sophistication and varied needs of the market, and respond to technological advances and emerging industry standards and practices on a timely and cost-effective basis. The development of the Company s proprietary technology entails significant technical and business risks. The Company may not be successful in using its new technologies or exploiting its niche markets effectively or adapting its businesses to evolving customer or medical requirements or preferences or emerging industry standards.

The Company is highly dependent on third party relationships for research and clinical trials

The Company relies upon third party relationships for assistance in the conduct of research efforts, pre-clinical development and clinical trials, and manufacturing. In addition, the Company expects to rely on third parties to seek regulatory approvals for and to market the Company s product. Although the Company believes that its collaborative partners will have an economic motivation to commercialize the Company s product included in any collaborative agreement, the amount and timing of resources diverted to these activities generally is expected to be controlled by the third party. Furthermore, if the Company cannot maintain these relationships, its business may suffer.

The Company has no operating revenues and a history of losses.

To date, the Company has not generated sufficient revenues to offset its research and development costs and accordingly has not generated positive cash flow or made an operating profit. As of December 31, 2002, the Company had an accumulated deficit of $16,450,561. The Company incurred net losses of $6.1 million, $6.1 million and $3.6 million for the years ended December 31, 2002, 2001 and 2000, respectively. The Company anticipates that it will continue to incur significant losses during 2003 and in the foreseeable future. The Company will not reach profitability until after successful and profitable commercialization of one or more of its products. Even if one or more of its products are profitably commercialized, the initial losses incurred by the Company may never be recovered.

During 2002 and 2001, the Company had no operating revenues. The Company has benefited to date from the receipt of research grants. There can be no assurance that grants will continue to be available to the Company or, if so, at what levels.

The Company may need additional financing in the future to fund the research and development of its products and to meet its ongoing capital requirements.

As of December 31, 2002, the Company had cash of $8.3 million and working capital of approximately $7.2 million. The Company anticipates that it may need additional financing in the future to fund research and development and to meet its on going capital requirements. The amount of future capital requirements will depend on many factors, including continued scientific progress in its drug discovery and development programs, progress in its pre-clinical and clinical evaluation of drug candidates, time and expense associated with filing, prosecuting and enforcing its patent claims and costs associated with obtaining regulatory approvals. In order to meet such capital requirements, the Company will consider contract fees, collaborative research and development arrangements, and additional public or private financings (including the incurrence of debt and the issuance of additional equity securities) to fund all or a part of particular programs as well as potential partnering or licensing opportunities. There can be no assurance that additional funding will be available or, if available, that it will be available on acceptable

terms. If adequate funds are not available on terms favorable to the Company, the Company may have to reduce substantially or eliminate expenditures for research and development, testing, production and marketing of its proposed product, or obtain funds through arrangements with corporate partners that require the Company to relinquish rights to certain of its technologies or product. There can be no assurance that the Company will be able to raise additional capital if its current capital resources are exhausted.

The cost of director and officer liability insurance is expected to increase substantially and may affect the ability of the Company to retain quality directors and officers

The Company carries liability insurance on behalf of its directors and officers. Given a number of large director and office liability insurance claims in the U.S. equity markets, director and officer liability insurance is becoming increasingly more expense with increased restrictions. Consequently, there is no assurance that the Company will continue to be offered this insurance or be able to obtain adequate coverage. The inability to acquire the appropriate insurance coverage will limit the Company s ability to attract and maintain directors and officers as required to conduct its business.

The Company is dependent on its key employees and collaborators

The Company s ability to develop the product will depend, to a great extent, on its ability to attract and retain highly qualified scientific personnel and to develop and maintain relationships with leading research institutions. Competition for such personnel and relationships is intense. The Company is highly dependent on the principal members of its management staff, Dr. Thompson, Dr. Coffey, Mr. Ball, Dr. Gill and Dr. Schnarr, as well as its advisors and collaborators, the loss of whose services might impede the achievement of development objectives. The persons working with the Company are affected by a number of influences outside of the control of the Company. The loss of key employees and/or key collaborators may affect the speed and success of product development.

The Company presently carries insurance in the amounts of $2,000,000, $1,000,000 and $500,000 for Dr. Thompson, Dr. Coffey and Mr. Ball, respectively.

The Company s share price may be highly volatile

Market prices for securities of biotechnology companies generally are volatile. This increases the risk of securities litigation. Factors such as announcements (publicly made or at scientific conferences) of technological innovations, new commercial products, patents, the development of proprietary rights, results of clinical trials, regulatory actions, publications, quarterly financial results, the Company s financial position, public concern over the safety of biotechnology, future sales of shares by the Company or by its current shareholders and other factors could have a significant effect on the market price and volatility of the common shares.

Item 4 Information on the Company

A. History and development of the Company

Oncolytics Biotech Inc. was incorporated pursuant to the provisions of the ABCA on April 2, 1998 as 779738 Alberta Ltd. On April 8, 1998, the Company amended its articles and changed its name to Oncolytics Biotech Inc. On July 29, 1999, the Company further amended its articles by removing the private company restrictions and subdividing its issued and outstanding 2,222,222 common shares to create 6,750,000 common shares.

In April 1999, the Company, the Vendors and SYNSORB entered into the Share Purchase Agreement whereby SYNSORB acquired all of the then outstanding common shares of the Company for a share and cash exchange valued at $2,500,000 paid primarily in common shares of SYNSORB, four milestone payments payable to the Vendors valued, in the aggregate, at up to $4,000,000 and a royalty commitment. Pursuant to an assignment dated July 29, 1999, the obligation to make the milestone and certain royalty payments was assigned from SYNSORB to the Company (the Assignment of Obligations). The Company thereby agreed to indemnify and save harmless SYNSORB from all actions, suits, demands, claims, costs, losses, expenses, charges and damages brought against SYNSORB in relation to the payment or non-payment of such obligations, however such assignment does not affect or release SYNSORB from its liabilities and responsibilities under the terms of the Share Purchase Agreement. The Company has made three milestone payments totaling $3,000,000. The final milestone payment is $1.0 million payable within 90 days of the first receipt, in any country, from the Appropriate Regulatory Authority, for marketing approval to sell REOLYSIN® to the public or the approval of a new drug application for REOLYSIN®.

In addition to the milestone payments, royalty payments payable to the Vendors will become due and payable in accordance with the Share Purchase Agreement upon realization of sales of REOLYSIN®. In accordance with the Share Purchase Agreement and the related Assignment of Obligations, twenty (20%) percent of the royalty payments or other consideration received by the Purchaser, as defined in the Share Purchase

Agreement, as a result of entering into partnerships or other arrangements for the development of the reovirus technology are payable to the Vendors. If REOLYSIN® is developed at commercial levels for distribution to the public, the payments owing to the Vendors referred to in this paragraph will be replaced with a royalty payment of four (4%) percent of net sales received from such products. Certain Vendors have conditionally agreed to reduced royalty rates from those outlined in the Share Purchase Agreement as consideration for revisions to the obligations to these Vendors.

Subsequent to April 21, 1999, SYNSORB s ownership has been diluted through the Company s public offerings in August 1999, private offerings by the Company of its common shares and sales of shares by SYNSORB.

On May 7, 2002, the shareholders of the Company approved the release from escrow of 4,725,000 common shares of the Company held by SYNSORB on the condition that 4,000,000 of these shares would be distributed to SYNSORB's shareholders. Effective May 15, 2002, SYNSORB distributed 4,000,000 common shares of the Company to SYNSORB s shareholders reducing its ownership to nil.

As of December 31, 2002, the Company had 22,145,284 common shares issued and outstanding.

The Company s principal place of business is located at Suite 210, 1167 Kensington Crescent N.W., Calgary, Alberta, Canada T2N 1X7, and its telephone number is (403) 670-7377.

General

The Company focuses on the discovery and development of pharmaceutical products for the treatment of cancers that have not been successfully treated with conventional therapeutics. Recent scientific advances in oncology, virology, and molecular biology have created opportunities for new approaches to the treatment of cancer. The product presently being developed by the Company may represent a novel treatment for Ras mediated cancers which can be used as an alternative to existing cytotoxic or cytostatic therapies, as an adjuvant therapy to conventional chemotherapy, radiation therapy, or surgical resections, or to treat certain cellular proliferative disorders for which no current therapy exists.

The Company s technologies are based on discoveries in the Department of Microbiology and Infectious Diseases at the University of Calgary in the 1990 s. The Company was formed in 1998 to explore the natural oncolytic capability of the reovirus, a virus that preferentially replicates in cells with an activated Ras pathway.

The product being developed by the Company may represent a novel treatment for certain tumor types and some cellular proliferative disorders. The Company s product is a virus that is able to replicate specifically in, and hence kill, certain tumor cells both in tissue culture as well as in a number of animal models. See *Narrative Description of the Business Business of the Company; Scientific Background* .

Set forth below is a summary of the important events in the development of the Company s business during the year ended December 31, 2002.

Clinical Trials

On March 21, 2002, the Company announced summary results from its Phase I clinical trial of REOLYSIN®. The study examined the administration of escalating dosages of REOLYSIN® directly into a subcutaneous (underneath the skin) tumour in eighteen terminal cancer patients with progressive (actively growing) cancer that had failed to respond to conventional therapies. The primary outcome of the trial was safety. None of the patients receiving reovirus experienced any serious adverse events related to the reovirus, nor were there any dose limiting toxicities detected in any of the patients. The secondary outcomes measured in the study related to tumour responses. Tumour responses were measured at both the treated lesion as well as remote tumour sites. In assessing these interim results, viral activity was defined as a transitory or lasting tumour regression of at least 30% measured in two dimensions against the tumour size prior to injection on the first day of treatment. Evidence of viral activity was detected in 11 of 18 patients (61%), with tumour regression ranging from 32% to 100%.

On July 3, 2002, the Company commenced its Phase I/II clinical trial for recurrent Glioma (brain tumor) for which it had received approval from Health Canada on April 11, 2002. On December 23, 2002, the Company reported positive interim results from the Glioma study. REOLYSIN® appeared to be well tolerated when surgically delivered into the brain during the treatment of the first six patients.

The Company commenced patient enrollment in its clinical trial for T2 prostate cancer on April 16, 2002 enrolling six patients. This trial is designed to allow the Company to measure overall tumour response and examine changes or effects inside the tumour and in surrounding normal tissue, as part of a human clinical trial. On March 31, 2003 the Company reported interim results from the prostate study See *General Development of the Business Recent Developments* .

Animal Studies

On February 8, 2002, the Company announced the successful completion of its eighth formal toxicology study of REOLYSIN®. This study involved daily injections of REOLYSIN® for 28 days in a non-tumor bearing canine model. The total cumulative amount of virus injected per animal at the highest dose was more than one hundred times the highest dose used in the recently completed Phase I human clinical trial on a per unit of body weight basis.

On April 18, 2002, the Company reported results from a study conducted by a third party, which examined the use of REOLYSIN® in canines (companion pet dogs) with naturally occurring tumours. The study examined the effect of three injections of REOLYSIN® administered on alternating days directly into a subcutaneous malignant tumour in 17 dogs. Efficacy was assessed by both measurement of tumour response and by histopathological comparison of pre-treatment and post-treatment tumour

biopsies (tissue sample comparison). Canines were considered to be evaluable for tumour response only if they were available for all follow-ups. None of the animals were screened for RAS activation of their tumours prior to enrolment. In six of the 15 evaluable canines, the injected tumours were classified as stable disease (five) or partial response (one) on day 32 after the first injection of REOLYSIN®. Fifteen of 17 cases were evaluable by histopathology, where tumour necrosis (cell death) is the primary indication of efficacy in cancer therapy. Nine of 15 (60%) post-treatment biopsies from tumour masses showed increased cell death. Two of the treated masses appeared to be completely replaced by non-cancerous cells and fibrous tissue and another four cases had evidence of cell death in at least 75% of the biopsy sample.

Reovirus for Animal Use

The Company announced on November 20, 2000, that it had entered into an agreement with U.S. based pharmaceutical firm, Pfizer Inc. (Pfizer) which had the potential of leading to the development and marketing of a formulation of the reovirus for animal use. It was anticipated that the agreement would also provide information towards the Company s primary objective of developing the potential of REOLYSIN® as a product for human use. On January 10, 2002, the Company reported that Pfizer had terminated its agreement with the Company for the development of the reovirus as a potential cancer therapeutic for animals. Based upon a review of the information available to the Company, there was nothing that caused concerns with respect to safety or effectiveness of the reovirus as a potential cancer therapy for human use. In addition, the Company eventually received information that has assisted the Company in development of the reovirus as a potential therapeutic. The primary focus of the Company has been and will continue to be the development of REOLYSIN® as a human therapeutic.

Patents

The Company received notification of issuance of two additional patents in the U.S. during 2002, and on March 6, 2002 received notification of its first issued European Patent. In addition, the Company has a number of other patents under application, both in the United States, and through filings under the Patent Cooperation Treaty. See Item 4. *Information on the Company Patent and Patent Application Summary*.

Financings and Other Distributions

The Company has completed the following offerings of securities over the past three years:

on November 8, 1999, the Company completed its initial public offering of 4,000,000 common shares at a price of $0.85 per share;

on February 1, 2000, the Company issued 3,000,000 special warrants at $4.70 per special warrant (all special warrants were exercised on March 9, 2000 into common shares);

on July 17, 2000, the Company issued 244,898 common shares at $12.25 per share.

on December 11, 2002, the Company issued 1,000,000 units at $2.00 per unit (each unit consisting of one common share and one-half of one common share purchase warrant with each full share purchase warrant exercisable into one common share at an exercise price of $3.00 per share); and

on February 10, 2003, the Company issued 140,000 units at $2.00 per unit (each unit consisting of one common share and one-half of one common share purchase warrant

with each full share purchase warrant exercisable into one common share at an exercise price of $3.00 per share).

On June 19, 2003, the Company announced that it had closed a private placement of 2,120,000 units at $3.00 per unit for gross proceeds of $6.36 million. Each unit consisted of one common share and one-half of one share purchase warrant, each whole warrant exercisable to acquire one common share for $4.00 per share until December 19, 2004.

Effective May 15, 2002, SYNSORB distributed 4,000,000 common shares in the capital of the Company to its shareholders. See Item 4. *Business of the Company General*. These common shares were previously held in escrow; however, upon receipt of approval of the shareholders of the Company, such common shares were distributed without any trading restrictions. In consideration for the early release from escrow of these common shares, the Company acquired certain securities of BCY LifeSciences Inc. (BCY) from SYNSORB. See Item 4. *Information on the Company History and development of the Company*.

Shareholdings in Other Issuers

As at December 31, 2002 the Company owned 6,890,000 common shares (representing approximately 11.5% of the issued and outstanding common and Class B shares) in the share capital of Transition Therapeutics Inc. (TSXV: TTH), which were acquired by the Company on June 18, 2002 in exchange for the issuance of 1,913,889 common shares in the capital of the Company. Transition Therapeutics is a Canadian biotechnology company developing products for the treatment of diabetes, multiple sclerosis, restenosis and stroke. The Company disposed of these shares on June 6, 2003. See, Item 4. *Information on the Company Recent Developments* , below.

The Company also owns 2,394,445 common shares (representing, as at December 31, 2002, approximately 7.6% of the issued and outstanding shares) in the capital of BCY (TSXV: BCY), the right to acquire an additional 200,000 common shares of BCY for no additional consideration upon the attainment of certain milestones by BCY and warrants to purchase up to 694,445 common shares of BCY at an exercise price of $0.27 per share at any time prior to April 23, 2004. BCY is a pharmaceutical company with license rights to technologies to treat certain diseases of the respiratory tract.

Recent Developments

On February 6, 2003, the Company announced the successful completion of its program for the development of a commercial process for the manufacturing of REOLYSIN®, and indicated that it had filed selective patent applications with respect to the process.

On February 14, 2003, the Company announced successful completion of a primate toxicology study testing the safety of intravenous infusion of REOLYSIN® over 28 days. At the maximum daily dose used in the study, each primate received daily from 10 to 100 times the expected maximum single human dose per unit of body weight. The product was well tolerated and no product-related serious adverse events were observed.

On March 6, 2003, the Company announced that it had been granted its sixth U.S. patent. This patent (#6,528,305) covers a method of producing infectious mammalian reovirus, which is developed to be suitable for clinical administration on a cost effective basis. See Item 4. *Information on the Company Patent and Patent Application Summary*.

On March 31, 2003, the Company reported results of an interim assessment of its T2 prostate cancer trial. These results were presented by Dr. Don Morris, from the Alberta Cancer Board, the principal

investigator for the trial. Dr. Morris reported that there was evidence of viral activity in five of six patients and there were no safety concerns, from either a clinical or histopathological perspective, in all six patients reported upon. The preliminary data, in four of the six patients, showed clear histopathological evidence of apoptotic tumour cell death (one measure of viral activity). In a fifth patient, the PSA level dropped by 53% and the prostate gland shrunk by 67% from the period of time prior to treatment to the time of surgical removal. There was no evidence of viral activity in the sixth patient. In all six patients, there was no histopathological evidence of any viral effect on healthy prostate tissue.

On May 21, 2003, the Company announced that it had been granted its seventh U.S. patent. This patent (#6,565,831) covers co-administration of the virus with immune suppressing agents such as Cyclosporin. See Item 4. *Information on the Company Patent and Patent Application Summary*.

On June 6, 2003, the Company sold all of its 6.89 million common shares in the capital of Transition Therapeutics Inc. for net proceeds of $2,552,745. The Company will record a loss of approximately $2,156,000 in its second quarter as a result of this sale.

On June 10, 2003, the Company announced that it had been granted its eighth U.S. patent. This patent (#6,576,234) covers the use of combinations of reovirus strains for the treatment of Ras-mediated tumours. See Item 4. *Information on the Company Patent and Patent Application Summary*.

On June 19, 2003, the Company announced that it has closed a previously announced private placement. The Company issued 2,120,000 units for gross proceeds of $6.36 million. Each unit consists of one common share and one-half of one common share purchase warrant. Each whole warrant entitles the holder to purchase an additional common share for $4.00 per share until December 19, 2004. Certain registered dealers received a commission of 7.5% of the gross proceeds and a warrant entitling them to acquire a number of common shares of the Company equal to 10% of the number of units issued. Net proceeds from this private placement are expected to be approximately $5.9 million.

The Company is in discussions with the majority of the Vendors who are party to the Share Purchase Agreement with respect to the contingent liability arising from the Share Purchase Agreement (see Note 9 of the December 31, 2002 audited financial statements). See Item 4. *Information on the Company History and development of the Company*.

Future Developments

The Company anticipates that many important activities related to its clinical trial program, its product manufacturing and its intellectual property development and protection will occur in 2003. The Company intends to continue its clinical trial to evaluate the effectiveness of REOLYSIN® as a potential treatment for T2 prostate cancer, and to continue its clinical trial designed to test the safety and effectiveness of REOLYSIN® for brain tumours. The Company also intends to commence development of a protocol for a human clinical trial to determine the safety and effectiveness of systemic delivery of REOLYSIN® as a cancer therapeutic. Various forms of cancer are being assessed and the

Company intends to select one or more forms of cancer that appear to provide the best opportunity for timely approval.

The Company plans to continue its focus on establishing strategic relationships with potential partners who can provide expertise in marketing and distribution, as well as assistance with research and development.

Capital Expenditures, Acquisitions and Divestitures

Since its Incorporation on April 8, 1998, the Company has focused its capital expenditures on acquisition and development of its intellectual property, and leaseholds and equipment required to expand its operations as its clinical trial program expanded.

In 2002, the Company expended $1,052,214 (2001 $585,513; 2000 $372,823) on these activities. In the first quarter of 2003, the Company incurred $460,282 for similar activities The Company expects that its capital expenditures during 2003 will be funded with working capital.

As a result of the Plan of Arrangement filed by SYNSORB, (see History and Development of the Company, Recent Developments) the Company received 1,500,000 common shares held by SYNSORB in the capital of BCY and the right to receive 400,000 additional shares upon the completion of certain milestones at no additional cost to the Company. In addition, the Company, on April 15, 2002, purchased from BCY, 694,445 common shares and warrants to purchase up to 694,445 common shares at an exercise price of $0.27 at any time prior to April 23, 2004 for an investment of $125,000.

B. Business overview

Business of the Company

The Company s potential product for human use, REOLYSIN®, is developed from the reovirus. This virus has been demonstrated to replicate specifically in tumour cells bearing an activated Ras pathway. Activating mutations of Ras occur in approximately thirty per cent of all human tumors directly, but considering its central role in signal transduction, activation of the Ras pathway may play a role in approximately two-thirds of all tumors.

The functionality of the product is based upon the finding that tumors bearing an activated Ras pathway are deficient in their ability to activate the anti-viral response mediated by the host cellular protein, PKR. Since PKR is responsible for preventing reovirus replication, tumor cells lacking the activity of PKR are susceptible to reovirus infections. As normal cells do not possess Ras activations, these cells are able to thwart reovirus infections by the activity of PKR. In a tumor cell with an activated Ras pathway, reovirus is able to freely replicate and hence kill the host tumor cell. The result of this replication is progeny viruses that are then free to infect surrounding cancer cells. This cycle of infection, replication and cell death is believed to be repeated until there are no longer any tumor cells carrying an activated Ras pathway available.

The following schematic illustrates the molecular basis of how the reovirus kills cancer cells.

Scientific Background

The Ras protein is a key regulator of cell growth and differentiation. It transmits signals from the cell s surface, via growth factor receptors, to downstream elements, which are in turn relayed to the nucleus. This transmission of signals from the cell surface to the cell s nucleus is collectively referred to as signal transduction . The transmission of these signals results in cell growth, division, and in some instances cellular differentiation. In normal cells, cell growth occurs only in the presence of factors stimulating the cells to grow. Mutations in Ras itself, or any of the elements along the Ras pathway, often lead to activation of the pathway in the absence of the appropriate growth stimuli, leading to the uncontrolled growth of these cells and ultimately to the development of a cancerous state. In fact, approximately 30% of all cancers are known to be due to mutations in Ras itself. The frequency of these Ras mutations, as well as their etiology in a given tumor is however, tissue specific. Activating mutations in Ras are found in many types of human malignancies but are highly represented in pancreatic (90%), sporadic colorectal (50%), lung carcinomas (40%), and myeloid leukemia (30%). Because Ras is a regulator of key mitogenic signals, aberrant function of upstream elements such as receptor tyrosine kinases (RTKs) can also result in Ras activation in the absence of mutations in Ras itself. Indeed, over-expression of these RTKs such as HER2/neu/ErbB2 or the epidermal growth factor receptor is common in breast cancer (25-30%), and over-expression of the platelet-derived growth factor receptor (PDGFR) is common in glioblastomas and gliomas, all of which are tumor types in which Ras mutations are relatively rare. Although activating mutations of Ras itself is thought to occur in only about 30% of all tumors it is expected that approximately two-thirds of all tumors have activated Ras signaling pathways as a result of mutations in genes that lie upstream of Ras. With this in mind, Ras becomes a significant therapeutic target in oncology.

All available scientific evidence developed or reviewed by the Company to date supports the premise that the reovirus only actively infects and replicates in cells with an activated Ras pathway. This naturally occurring virus is believed to cause only mild infections of the respiratory and gastrointestinal tract and in general, reovirus infections in humans are asymptomatic and usually sub-clinical. Research has indicated this virus replicates in, and therefore kills, only cells with an activated Ras pathway, but does not replicate in cells lacking an activated Ras pathway. It has been demonstrated that reovirus replication is

restricted in cells lacking an activated Ras pathway due to the activation of the double stranded RNA-activated protein kinase (PKR). PKR is a crucial element in protecting cells from reovirus infection and is capable of blocking viral protein translation. Activated Ras (or an activated element of the Ras pathway) prevents PKR activation, and thus allows viral replication to ensue only in this subset of cancer cells. To prove that reovirus could be used as a potential cancer therapeutic, a number of animal models were developed. Experiments using this virus to treat mouse tumors, expanded animal models as well as human brain, breast, and prostate tumors implanted in immuno-compromised mice have yielded promising results. In animals where tumor regression was noted, a single injection of reovirus is often enough to cause complete tumor regression. More importantly, it was demonstrated that this treatment is effective in causing tumor regression in immune competent animals. The Company will conduct an expanded animal toxicology program to determine any long-term side effects of REOLYSIN® therapy. Management of the Company believes that the nature of this virus, combined with its selective replication makes it an attractive candidate as a cancer therapy.

The Company believes that this research may have broad utility in the treatment of tumours with an activated Ras pathway as well as a potential use as an adjuvant therapy following surgical tumor resection or as an adjuvant therapy to conventional chemotherapeutic or radiation therapies.

The Potential Cancer Product

Cancer is a group of related diseases characterized by the aberrant or uncontrolled growth of cells and the spread of these cells to other sites in the body. These cancer cells eventually accumulate and form tumors that can disrupt and impinge on normal tissue and organ function. In many instances, cells from these tumors can break away from the original tumor and travel through the body to form new tumors through a process referred to as metastasis.

The Company s cancer product is a potential therapeutic for tumors possessing an activated Ras pathway. In tumor cells with this type of activation, the virus is cytotoxic but may have no effect on the surrounding normal tissue. Activating mutations of Ras are believed to account for approximately 30% of all human tumors directly. It is also possible to activate Ras through mutation of proteins that control its activity rather than through direct mutations of Ras itself. This suggests that the percentage of tumors that may respond to this treatment could be approximately 65%.

Repayable Grants

Pursuant to the Technology Commercialization Agreement with the Heritage Foundation, the Company received $150,000 to offset the REOLYSIN® development costs. Under the Technology Commercialization Agreement, the Company agreed to repay the amount of the grant from gross proceeds of the sales of the product. The Company agreed to repay the Heritage Foundation in annual installments from the date of commencement of sales of REOLYSIN® in an amount equal to the lesser of: (a) 5% of gross revenues generated by the Company; or (b) $15,000 per annum until the entire grant has been paid in full.

In accordance with the Clinical Trial Agreement with the ACB, the Company has received funding and overhead support from the ACB to offset the REOLYSIN® clinical trial expenditures. Under the Clinical Trial Agreement, the Company agreed to repay the amount of the grant together with a royalty, to a combined maximum amount of $400,000 plus an overhead repayment of $100,000, upon sales of product. The Company agreed to repay the ACB in annual installments from the date of commencement of sales in an amount equal to the lesser of: (a) 5% of gross sales of REOLYSIN®; or (b) $100,000 per annum.

Business Strategy

The Company s business strategy is to develop and market REOLYSIN® in an effective and timely manner, and access additional technologies at a time and in a manner that the Company believes best for its development. The Company intends to achieve its business strategy by focusing on these key areas:

Develop REOLYSIN® by initiating toxicology and manufacturing programs and progress the product through a clinical setting to assess its safety and efficacy in human subjects.

Establish collaborations with experts to assist the Company with scientific and clinical developments of this new potential pharmaceutical product.

Implement strategic alliances with selected pharmaceutical and biotechnology companies and selected laboratories, where such alliances may complement and expand the Company s research and development efforts on the product and provide sales and marketing capabilities.

Develop relationships with companies that could be instrumental in assisting the Company to access other innovative therapeutics.

The Company s business strategy is based on attaining a number of commercial objectives, which, in turn, are supported by a number of product development goals. The development of a new product presently being conducted by the Company is primarily of a research and development nature. In the context of this Annual Report, statements of the Company s belief are based primarily upon the Company s results derived to date from its research and development program with animals, and early stage human trials, and upon which the Company believes that it has a reasonable scientific basis to expect the particular results to occur. It is not possible to predict, based upon studies in animals, or early stage human trials, whether a new therapeutic will ultimately prove to be safe and effective in humans. There are no assurances that the particular result expected by the Company will occur.

At this time the Company does not intend to become a fully integrated pharmaceutical company with substantial in-house research and development, marketing and distribution or manufacturing capabilities. The Company is pursuing a strategy of establishing relationships with larger companies as strategic partners. The Company intends to partner or joint venture with larger pharmaceutical companies that have existing and relevant marketing capability for its products. It is anticipated that future clinical development of the Company s products outside Canada would generally occur in conjunction with a strategic partner or partners, who would contribute expertise and financial assistance. In exchange for certain product rights and commitments to market the Company s products, the strategic partners would be expected to share in gross proceeds from the sale of the Company s product or products. The proceeds generated from partnering or joint venturing projects are expected to be distributed on the basis of relative risk taken and resources contributed by each party to the partnership or joint venture.

Regulatory Requirements

The development of new pharmaceuticals is strongly influenced by a country s regulatory environment. The drug approval process in Canada is regulated by Health Canada. In the United States, the primary regulatory body is the FDA. Similar processes are conducted in other countries by equivalent regulatory bodies. Regulations in each jurisdiction require the licensing of manufacturing facilities and mandate strict research and product testing standards. Companies must establish the safety and efficacy of their products, comply with Good Manufacturing Practices and submit marketing materials before being allowed to market pharmaceutical products. While the Company will pursue the approval of its product, success in acquiring regulatory approval for any product is not assured.

In order to market its pharmaceutical product in Canada, the United States, Europe and other jurisdictions, a company must successfully meet the requirements of those jurisdictions. The requirements of the Appropriate Regulatory Authority will generally include the following stages as part of the regulatory process:

Pre-Pharmacological Studies Pre-Pharmacological studies involve extensive testing on laboratory animals to determine if a potential therapeutic product has utility in an *in vivo* disease model and has any adverse toxicology in a disease model.

Pharmacological Studies (or Phase I Clinical Trials) Pharmacological studies are designed to assess the potential harmful or other side effects that an individual receiving the therapeutic compound may experience. These studies, usually short in duration, are often conducted with healthy volunteers or actual patients and use up to the maximum expected therapeutic dose.

Therapeutic Studies (or Phase II and III Clinical Trials) Therapeutic studies are designed primarily to determine the appropriate manner for administering a drug to produce a preventive action or a significant beneficial effect against a disease process. These studies are conducted using actual patients with the condition that the therapeutic is designed to remedy.

Prior to initiating these studies, the organization sponsoring the program is required to satisfy a number of requirements via the submission of documentation to support the approval for a clinical trial.

An Investigational New Drug (IND) Submission or its equivalent must be submitted to Health Canada prior to conducting Pharmacological Studies. After all three phases have been completed, the results are submitted with the original IND Submission to Health Canada for marketing approval. Once marketing approval is granted, the product is approved for commercial sales in Canada. In other jurisdictions similar filings and applications are also required.

In addition to the approval of the drug itself, Health Canada requires that the manufacturer of the drug be in full compliance with the current Canadian Good Manufacturing Practices program. A similar process for manufacturing approval is followed in other countries.

Market and Competition

According to estimates for 2003 from the American Cancer Society, 1.33 million Americans are expected to be diagnosed with cancer in the year, and 556,500 Americans are forecast to die of cancer. In the United States cancer accounts for 25% of all deaths, second only to heart disease. In the United States, the relative lifetime risk of a male developing cancer is 1 in 2, while for women, this risk is 1 in 3.

The costs of this disease state are also significant. In 2002, in the United States, the National Institute of Health estimated that the overall annual costs for cancer are $107 billion. Of this figure, $37 billion can be attributed to direct patient costs.

It has been estimated that approximately 30% of all tumors are a result of activating mutations of Ras itself. Since Ras can be activated by mechanisms other than direct mutations it is believed that the number of tumors with activated Ras (either through direct activating mutation or mutation or over-expression of elements upstream of Ras) is approximately 65%.

The Company is aware of large pharmaceutical companies developing small molecule programs for the development of therapeutics to treat Ras mediated tumors. In addition, there are numerous companies,

both big and small, that are working in the field of cancer therapeutics including some companies developing other oncolytic viruses.

Product Marketing Strategy

The markets for the cancer product being developed by the Company may be large and could require substantial sales and marketing capability. Before or upon successful completion of the development of a cancer product, the Company intends to enter into one or more strategic partnerships or other collaborative arrangements with a pharmaceutical company or other company with marketing and distribution expertise to address this need. If necessary, the Company will establish arrangements with various partners for different geographical areas. The Company s management and consultants have extensive experience with the partnering process.

Third Party Advisors and Collaborators

Pursuant to the Research Contract with the Governors of the University of Calgary, the Company paid to the University of Calgary an aggregate sum of $102,000 over a twelve month period, to perform research for the REOLYSIN® project commencing August 31, 1999. This contract was extended for an additional 12 months, but was not renewed beyond August 2001. Under the contract, the research was under the direction and supervision of Dr. Patrick Lee. Work to be conducted in Dr. Lee s laboratory included dose response studies, studies of alternate routes of administration, and work to further enable patent claims.

During 2001 and 2002, and in connection with the progress from pre-clinical research to the present clinical trial program, the Company broadened its advisor base. In addition to receiving assistance from Dr. Don Morris and Dr. Peter Forsyth, the Principal Investigators responsible for the prostate and brain tumour clinical trials respectively, the Company engaged Dr. George Gill and Dr. Alan Tuchman to apply their expertise in their respective fields of clinical and regulatory affairs and neurology as the Company progresses its clinical trial program for gliomas into the United States. The Company is at various stages of discussion with other advisors and collaborators, who are expected to provide assistance in addressing clinical trial and regulatory issues as the development program of the Company progresses.

Manufacturing

The Company has employed a toll manufacturer, BioReliance Company, for the production of reovirus for animal toxicology studies and all human clinical trials. The product will be produced in compliance with current regulatory requirements and the manufacturer will confirm biosafety testing.

Intellectual Property Policy

With eight patents issued in the United States, one European patent issuance, and additional applications in process, the Company believes it has started to develop an intellectual property position, and an intellectual property protection policy that is applied consistently. All potentially valuable intellectual property is identified by the originator, and classified by the Company in terms of its sensitivity. All sensitive documentation related to the intellectual property is protected and kept in secure areas. All employees execute agreements containing confidentiality clauses, which assign any new intellectual property to the Company.

Where appropriate, and consistent with management s objective, patents are pursued as soon as the concepts have been validated through appropriate laboratory work. To that end, patents will continue to be sought on components or concepts that management of the Company perceives to be essential.

The Company believes that one of the best intellectual property control policies is a strong human resources policy to ensure that technical leaders with access to proprietary intellectual property do not consider leaving the Company for other employment. The Company intends that all staff be compensated through competitive salaries and all staff participate in the company stock option program.

Patent and Patent Application Summary

Where a patent is filed in the United States there is an option to file a Patent Cooperation Treaty (PCT) application. The PCT application process is a means for technology patented in one of the PCT signatory countries to receive protection in other PCT countries. The PCT includes over 100 countries. Within one year of filing a patent in the United States, the applicant files for PCT coverage in all PCT countries. Approximately 18 months after the PCT filing, the applicant must pay individual filing fees in designated PCT countries and at that time the applicant may wish

to restrict coverage to a subset of countries which have potential for the technology. At the time of filing the PCT application the applicant designates which of the member countries are to be covered by the application. The PCT application allows the applicant to defer national filings in the various designated countries for a period of up to 30 months from the original PCT application filing date. After the PCT application deferral period, the applicant must file for separate national or regional patents in one or more designated countries, depending on which specific markets the applicant intends to target.

The following table sets forth the Company s recent patent issuances, including its first European patent:

Title	Ownership	Inventors	Status of Patent
Patent Number U.S. 6,110,461 Reovirus for the Treatment of Neoplasia	Oncolytics Biotech Inc.	Dr. Patrick W.K. Lee Dr. James E. Strong Dr. Matthew C. Coffey	Filing date: Aug. 13, 1997 Issued: Aug. 29, 2000
Patent Number U.S. 6,136,307 Reovirus for the Treatment of cellular proliferative disorders	Oncolytics Biotech Inc.	Dr. Patrick W.K. Lee Dr. James E. Strong Dr. Matthew C. Coffey	Filing date: Feb. 24, 1999 Issued: Oct. 24, 2000
Patent Number U.S. 6,261,555 Reovirus for the treatment of Neoplasia	Oncolytics Biotech Inc.	Dr. Patrick W .K. Lee Dr. James Strong Dr. Matthew C. Coffey	Filing date: Aug. 12, 1998 Issued: July 17, 2001
Patent Number U.S. 6,344,195 Reovirus for the treatment of Neoplasia	Oncolytics Biotech Inc.	Dr. Patrick W. K. Lee Dr. James Strong Dr. Matthew C. Coffey	Filing date: May 12, 2000 Issued: Feb. 5, 2002
European Application Number 8940002.3 Patent Number 1003534 Reovirus for the treatment of Neoplasia	Oncolytics Biotech Inc.	Dr. Patrick W. K. Lee Dr. James Strong Dr. Matthew Coffey	Filing date: Aug 12, 1998 Issued: March 6, 2002
Patent Number U.S. 6,455,038 Reovirus for the treatment of Cellular Proliferative Disorders	Oncolytics Biotech Inc.	Dr. Patrick L. Lee Dr. James E. Strong Dr. Matthew C. Coffey	Filing date: June 15, 2000 Issued: Sept. 24, 2002
Patent Number U.S. 6,528,305 Method of Producing Infectious Reovirus	Oncolytics Biotech Inc.	Dr. Bradley G. Thompson Dr. Matthew C. Coffey	Filing date: Aug. 2, 2001 Issued: March 4, 2003
Patent Number U.S. 6,565,831 Methods for preventing reovirus recognition for the treatment of Cellular Proliferative Disorders	Oncolytics Biotech Inc.	Dr. Bradley G. Thompson Dr. Matthew C. Coffey	Filing date: Aug. 10, 2000 Issued: May 20, 2003

Title	Ownership	Inventors	Status of Patent
Patent Number U.S. 6,576,234 Reovirus for the treatment of neoplasia	Oncolytics Biotech Inc.	Dr. Patrick L. Lee Dr. James E. Strong Dr. Matthew C. Coffey	Filing date: Dec. 6, 2001 Issued : June 10, 2003

Other patent applications have been filed by the Company, but have yet to be published or approved as of the date hereof.

C. Organizational structure

The Company had no subsidiaries as at December 31, 2002.

The Company owned 6,890,000 common shares (representing, as at December 31, 2002, approximately 11.5% of the issued and outstanding

common and Class B shares) in the capital of Transition Therapeutics Inc. Transition Therapeutics is a Canadian biotechnology company developing products for the treatment of diabetes, multiple sclerosis, restenosis and stroke. The Company disposed of these shares on June 6, 2003. See, Item 4. *Information on the Company Recent Developments* .

The Company also owns 2,394,445 common shares (representing, as at December 31, 2002, approximately 7.6% of the issued and outstanding shares) and 694,445 warrants to purchase common shares in the share capital of BCY. BCY is a pharmaceutical company with license rights to technologies to treat certain diseases of the respiratory tract.

D. Property, plant and equipment

The Company s head office is located at Suite 210, 1167 Kensington Crescent N.W., Calgary, Alberta, Canada T2N 1X7. The Company leases the premises, approximately 4,973 square feet, from Continental Saxon Holdings Ltd. pursuant to an amended lease agreement dated May 9, 2002. The lease commenced on June 1, 2001 and expires on May 31, 2006. The Company s lease payment obligations for rent and operating expenses are $2.17 per square foot of rentable area or $10,788 per month plus goods and services tax (GST), which includes the tenant s share of realty taxes, operating costs utilities and additional services subject to adjustment on an annual basis. The Company conducts its clinical trial programs at selected hospitals and clinics in Canada.

Prior to leasing the above facility, the Company leased office space from Jenkins and Associates, from August 2000 to August 1, 2001, at a cost of $3,425 per month plus GST for rent, utilities, realty taxes, and operating costs and additional services.

The Company does not own or lease any other properties. Its product manufacturing and process development is conducted through a contract manufacturer, BioReliance Corporation located in Rockville, Maryland.

Item 5 Operating and Financial Review and Prospects

Except for historical information, this review contains forward-looking statements which involve known unknown risks, delays, uncertainties and other factors not under the Company s control. See Note Regarding Forward Looking Statements and Item 3.D, Risk Factors.

This discussion and analysis of the results of the operations and financial condition of the Company should be read in conjunction with the financial statements and the related notes for the fiscal year ended December 31, 2002, which are included in Item 18 hereof.

The Company is a Development Stage Company

The Company was incorporated on April 2, 1998 and is a company still in the development stage. The Company has not been profitable since its inception and expects to continue to incur substantial losses from its research and development. The Company does not expect to generate significant revenues until its cancer product becomes commercially viable. The Company is focused on the development of the reovirus (REOLYSIN®) as a potential cancer therapeutic, and intends to assess the options for the production, marketing, sales and distribution of this potential product.

General Risk Factors

Prospects for biotechnology companies in the research and development stage should generally be regarded as speculative. It is not possible to predict, based upon studies in animals, or early studies in

humans, whether a new therapeutic will ultimately prove to be safe and effective in humans, or whether necessary and sufficient data can be developed through the clinical trial process to support a successful product application and approval.

If a product is approved for sale, product manufacturing at a commercial scale and significant sales to end users at a commercially reasonable price may not be successful. There can be no assurance that the Company will generate adequate funds to continue development, or will ever achieve significant revenues or profitable operations. Many factors (e.g. competition, patent protection, appropriate regulatory approvals) can influence the revenue and product profitability potential.

In developing a product for approval, the Company will rely upon its employees, contractors, consultants and collaborators and other third party relationships, including the ability to obtain appropriate product liability insurance. There can be no assurance that these reliances and relationships will continue as required.

In addition to developmental and operational considerations, market prices for securities of biotechnology companies generally are volatile, and may or may not move in a manner consistent with the progress being made by the Company. See, Item 3. *Key Information Risk Factors* for more detailed risks related to the Company.

Highlights

As of December 31, 2002, the Company has incurred a cumulative deficit of $16,450,561. However, through funding and financing arrangements, the Company had, as of December 31, 2002, cash and cash equivalents on hand in the amount of $8,319,244 available to fund its future development programs and general and administrative expenses. See *Liquidity and Capital Resources* .

Results Of Operations

During 2002 and 2001, the Company received no revenues related to its products under development. During 2000 the Company received a one time payment of $310,000 from a third party, for a limited right to review and potentially develop the reovirus as a veterinary product. This right has since been terminated.

In 2002, the Company earned $208,867 as interest income on cash balances, which was less than the $655,212 earned during 2001. The reduction is a result of the lower average cash balances during 2002 as compared to 2001, as well as reductions in interest rates on invested balances year over year.

The Company incurred expenses of $6,960,252 in 2002, with $4,283,743 (61.5%) related to research and development expenses, $2,102,272 (30.2%) related to operating expenses and $574,237 (8.3%) related to amortization of capital assets. During 2001, the Company incurred expenses of $7,137,243 with $5,116,661 (71.7%) related to research and development expenses (including a $1.0 million milestone payment made to the Vendors), $1,555,128 (21.8%) related to operating expenses and $465,454 (6.5%) related to amortization of capital assets.

Manufacturing

The Company presently intends to continue to utilize contract manufacturing services and facilities (pursuant to a manufacturing agreement with its contract manufacturer) in order to manufacture its clinical supplies of REOLYSIN® while it remains in its research and development stage. During 2002, the Company and its contract manufacturer successfully progressed the development and scale-up of the manufacturing process, and expect to generate additional product for clinical trial purposes during 2003

utilizing this process. The Company recognizes its dependence on its sole supplier of its product, and is pursuing methods of reducing this exposure.

Grants And Loans

The Company has been successful in obtaining financial assistance through grants and loans from the Heritage Foundation for the purpose of offsetting expenses related to clinical studies pursuant to the Technology Commercialization Agreement. During the period ended December 31, 1999, the Heritage Foundation provided grants aggregating $75,000 and loans aggregating $150,000 to offset REOLYSIN® development expenditures and operating expenditures. The loan is repayable by the Company to the Heritage Foundation in annual installments from the date of commencement of sales of REOLYSIN® in an amount equal to the lesser of: (a) 5% of the gross revenues generated by the Company; or (b) $15,000 per annum until the entire loan has been paid in full. The Company will continue to attempt to offset the costs of clinical trials through government sponsored grants and repayable funding. However the Company cannot be assured of successfully obtaining further grants for any of its potential products.

In accordance with the Clinical Trial Agreement with the Alberta Cancer Board (ACB), the Company received funding and overhead support from the ACB to offset the REOLYSIN® Phase I clinical trial expenditures. Under the Clinical Trial Agreement, the Company agreed to repay $400,000 plus an overhead repayment of $100,000, upon sales of product. The Company agreed to repay the ACB in annual installments in an amount equal to the lesser of: (a) 5% of gross sales of REOLYSIN®; or (b) $100,000 per annum.

Capital Expenditures

During 2002, the Company invested $860,521 in additional patent expenditures as well as $191,693 to acquire furniture and equipment (including $166,192 for specialized medical equipment for the glioma trial), and for leasehold improvements.

During 2001, the Company expended $200,019 to acquire furniture and equipment, and leasehold improvements as well as $385,494 in continuing to improve the patent protection for its intellectual property.

Other than continuing expenditures to improve the Company s intellectual property position, which will include expenditures on various foreign filings, the Company does not anticipate any significant additional capital expenditures for the year 2003. Other capital expenditures are expected to include normal operating requirements such as additional equipment, furniture and leasehold improvements.

Comparison of the year ended December 31, 2002 to the year ended December 31, 2001

No payments were received from or related to products under development in 2002 or 2001. The Company earned $208,867 in interest on cash balances in 2002, compared to $655,212 in 2001. The decrease in 2002 over 2001 was due to decreases in average cash balances during 2002, and reduced interest rates on invested balances.

During 2002, research and development expenses decreased to $4,283,743 from $5,116,661 in 2001. Expenses for 2001 included a milestone payment of $1.0 million dollars to the Vendors. In 2002, the Company concluded various toxicology studies, and progressed its manufacturing process, while producing additional product for use in its clinical trial program.

Operating expenses increased to $2,102,272 in 2002 as compared to $1,555,128 in 2001 due mainly to increased activities in support of the increased insurance costs (driven by market conditions, as well as additional clinical trial activities) and activities supporting the future growth and direction of the Company.

For 2003, the Company expects costs of patent activities, costs of product development and operations to increase as the clinical program escalates. To the extent that the Company is successful in acquiring a development partner for its product, many of these costs could be offset through payments or assumption by the partner of the costs of the development program.

Comparison of the year ended December 31, 2001 to the year ended December 31, 2000

The Company received $310,000 in the fourth quarter of 2000, as a payment related to a licensing agreement, which has since been terminated. No payments were received from or related to products under development in 2001. In addition, the Company earned $905,690 in interest on cash balances in 2000, compared to $655,212 in 2001. The decrease in 2001 over 2000 was due to decreases in average cash balances during 2001, and reduced interest rates on invested balances.

During 2001, research and development expenses increased to $5,116,661 from $3,689,815 in 2000. In 2001 the Company increased its development activities, concluded a Phase I human clinical trial in December, and increased its manufacturing and toxicology activities.

Operating expenses increased to $1,555,128 in 2001 as compared to $1,060,643 in 2000 due mainly to increased activities in support of research and development activities, as well as developing a broader awareness of the Company through public and investor relations initiatives, including activities related to corporate development.

For 2002, the Company expects costs of development and operations to increase as the clinical program escalates. To the extent that the Company is successful in acquiring a development partner for its product, many of these costs could be offset through payments or assumption

by the partner of the costs of the development program.

Quarterly Financial Results (Unaudited)

The following selected financial data in the table below has been derived from the unaudited financial statements for the period indicated.

($ in thousands, except per share amounts)	**2002 Quarter Ended**			
	March 31	**June 30**	**September 30**	**December 31**
Revenue (1)	Nil	Nil	Nil	Nil
Net Loss (2)	1,274	1,286	1,990	1,541
Loss per common share (3)	0.07	0.07	0.09	0.07
Total Assets (4)	16,262	19,468	17,331	17,968
Total cash (5)	12,018	9,964	7,746	8,319
Total Long-term Debt (6)	150	150	150	150
Cash dividends declared	Nil	Nil	Nil	Nil

($ in thousands, except per share amounts)	**2001 Quarter Ended**			
	March 31	**June 30**	**September 30**	**December 31**
Revenue (1)	Nil	Nil	Nil	Nil
Net Loss (2)	1,014	1,355	2,446	1,356
Loss per common share (3)	0.06	0.07	0.13	0.08
Total Assets (4)	21,945	20,723	19,999	19,073
Total cash (5)	16,954	16,635	15,858	14,971
Total Long-term Debt (6)	150	150	150	150
Cash dividends declared	Nil	Nil	Nil	Nil

Notes:

(1) The only other income earned was interest of $208,867 in 2002 and $655,212 in 2001, from cash and cash equivalent balances. There were no extraordinary items included in net loss for the periods referred to above.

(2) Net loss for 2002 was net of income tax recovery of $647,618 and net loss for 2001 was net of income tax recovery of $340,570 for 2001 (See Note 13 to the December 31, 2002 audited financial statements).

(3) Loss per common share is basic loss per share. Diluted loss per share has not been presented as the effect on loss per share would be anti-dilutive. The basic loss per share for each period, was calculated using the weighted average number of common shares outstanding during the period.

(4) Asset values include application of push down accounting and future tax liability accounting. See Note 2 to the audited financial statements for 2002.

(5) Cash in 2002 includes the proceeds from a private placement, in addition to proceeds from the exercise of stock options. Cash in 2001 includes proceeds from the exercise of warrants and stock options.

(6) The long-term debt recorded in 2002 and 2001 represents repayable loans from the Heritage Foundation.

The Company has not declared or paid any dividends since incorporation.

Financing Activities In 2002

During 2002, in addition to receiving proceeds from the exercise of stock options of $34,000, the Company raised net proceeds of $1,769,877 through a private placement of 1,000,000 units at $2.00 per unit. Each unit entitled the holder to one common share and one half a common share purchase warrant, with each whole common share purchase warrant providing the right to acquire one common share at $3.00 (see Note 10 to the December 31, 2002 audited financial statements).

Financing Activities In 2001

During 2001, the Company raised $2,210,016 through the exercise of warrants and stock options.

Financing Activities in 2000

On March 8, 2000 the Company raised net proceeds of $13,101,100 through the issuance of 3,000,000 special warrants at $4.70 per special warrant; each special warrant was exercised into one common share.

On July 17, 2000 the Company raised net proceeds of $2,998,645 through the private placement of 244,898 common shares at $12.25 per share.

In addition, the Company received $501,010 from the exercise of 573,910 stock options and warrants during the year.

Critical Accounting Policies

1. Capitalization and Amortization of Patent Costs

The Company treats third party costs incurred (primarily legal and registration costs) in the development of its Patent portfolio as limited-life intangible assets, and amortizes the costs related to these assets over the lesser of 17 years or their estimated useful life. The Company also reviews, at least annually, the valuation of its Patent costs for impairment known to the Company. If there is an indication of impairment, the Company would assess the fair value of its Patents and would record a reduction if the fair value were less than the book value.

In capitalizing these costs the Company is recognizing the inherent future benefit of Patents, not only in protection of its own potential products, but also as a possible asset that could give rise to revenues in the future through licensing agreements. While patent life is different in different jurisdictions it is normally considered to be 20 years from date of application. With an assumption of an average of three years from initial Patent application to Patent issuance, the Company has set a maximum of 17 years to amortize the costs from the date of issuance. The Company has then assessed the nature of the market and the continuing efforts to develop and market new and better products, as well as the incurrence of costs associated with Patents that have been issued, and as a result, the Company has chosen to amortize the costs on a straight-line basis over ten years.

As the product to which the Patents relate are in the development stage, with commercial recognition and revenue potential highly uncertain, should the Company experience a significant failure in its clinical trial program or other areas of risk, then the value of the Patents could be in serious question, giving rise to a possible write-down or write-off of the asset.

In the event that the Company is successful in its product development and sale, or other parties enter into licensing agreements with the Company, then it is also possible that the Patents may have a life and value beyond the ten years assumed for the amortization policy.

In any event, the revision to this policy or estimate would impact losses but not impact cash flows.

2. Carrying Value of Investments

The Company presently has minority investments in two publicly traded companies. In both cases the Company has recorded the carrying value at its cost, and in accordance with Canadian GAAP, has assessed these investments for other than temporary decline in value. In both cases the Company has concluded that the decline in value based on current share trading prices is not an other than temporary decline and, as a result, has not reduced its carrying value of these investments. As required under U.S. GAAP, the Company has recorded the unrealized loss in other comprehensive loss for the year ended December 31, 2002, as is indicated in its Canadian to U.S. GAAP reconciliation note.

Should a decline in value occur that is judged to be other than temporary, the resulting writedown would impact losses but not impact cash flows.

Changes In Accounting Standards

In September 2001, the Canadian Institute of Chartered Accountants issued a new Canadian standard on stock-based compensation that substantially harmonizes Canadian and U.S. GAAP. The new standard requires that stock-based payments, direct awards of stock and awards that call for settlement in cash or other assets be accounted for using a fair value-based method of accounting. The fair value based method

is encouraged for other stock-based compensation plans, but other methods of accounting, such as the intrinsic value method are permitted. Under the fair value method, compensation expense is measured at the grant date and recognized over the service period. Under the intrinsic value method, disclosure is made of earnings and per share amounts as if the fair value method had been used. The new standard has been applied effective January 1, 2002 in accordance with the intrinsic value method.

Future Outlook

The Company anticipates that many important activities related to its clinical trial program, its product manufacturing and its intellectual property development and protection will occur in 2003. The Company concluded its initial Phase I human clinical trial in late 2001, and provided a final report on the trial in early 2002. Given the interim results from the Phase I trial, the Company commenced a prostate cancer trial in Canada in the first quarter of 2002, and commenced the Phase I portion of a Phase I/II human clinical trial for patients with recuily:times;"> If a holder purchases a note for an amount in excess of the sum of all amounts payable on such note after the purchase date (other than qualified stated interest), such holder will be considered to have purchased such note with "amortizable bond premium" equal to such excess. A holder generally may elect to amortize such premium over the remaining term of the note under a constant yield method as an offset to interest when includible in income. A holder who elects to amortize bond premium must reduce its tax basis in the note by the amount of the premium amortized in any year. An election to amortize premium on a constant yield method will apply to all debt obligations held or subsequently acquired by the holder on or after the first day of the first taxable year to which the election applies. A holder may not revoke the election without the consent of the IRS.

Additional Medicare Tax

Certain U.S. Holders, including individuals, estates and trusts, will be subject to an additional 3.8% tax, which, for individuals, applies to the lesser of (i) "net investment income" or (ii) the excess of "modified adjusted gross income" over $200,000 ($250,000 if married and filing jointly or $125,000 if married and filing separately). "Net investment income" generally equals the taxpayer's gross investment income reduced by the deductions that are allocable to such income. Investment income generally includes passive income such as interest, dividends, annuities, royalties, rents and capital gains.

Taxation of Non-U.S. Holders

Payments of Interest

Under current U.S. federal income tax law and subject to the discussion below concerning backup withholding and FATCA (as defined below), principal and interest payments received from us or our agent generally will not be subject to U.S. federal income or withholding tax, except as provided below.

Interest may be subject to a 30% withholding tax (or less under an applicable treaty, if any) if:

Such interest is not effectively connected with the conduct by the Non-U.S. Holder of a trade or business within the United States, and if certain tax treaties apply, a permanent establishment maintained in the United States;

a Non-U.S. Holder actually or constructively owns 10% or more of the total combined voting power of all classes of our stock entitled to vote;

a Non-U.S. Holder is a "controlled foreign corporation" for U.S. federal income tax purposes that is related to us (directly or indirectly) through stock ownership;

a Non-U.S. Holder is a bank extending credit pursuant to a loan agreement entered into in the ordinary course of its trade or business; or

the Non-U.S. Holder does not satisfy the certification requirements described below.

A Non-U.S. Holder generally will satisfy the certification requirements if the Non-U.S. Holder certifies, under penalties of perjury, that it is not a "United States person" (within the meaning of the Code) and provides its name and address (which certification may generally be made on an IRS Form W-8BEN or W-8BEN-E, as applicable, or a successor form). Payments otherwise subject to withholding under the rules set forth above may nevertheless be exempt from withholding (or subject to withholding at a reduced rate) if the Non-U.S. Holder provides a properly executed IRS Form W-8BEN or W-8BEN-E, as applicable (or successor form), claiming an exemption from, or reduction in, withholding under the benefit of a tax treaty.

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A Non-U.S. Holder generally will be subject to tax in the same manner as a U.S. Holder with respect to payments of interest effectively connected with the conduct by the Non-U.S. Holder of a trade or business within the United States and, if required under an applicable tax treaty, a permanent establishment maintained in the United States. In some circumstances, such effectively connected income received by a corporate Non-U.S. Holder may be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be provided by an applicable treaty.

Sale, Exchange, or Retirement

Subject to the discussion below concerning backup withholding and FATCA (as defined below), a Non-U.S. Holder generally will not be subject to U.S. federal income or withholding tax on any capital gain or market discount realized on the sale, exchange, retirement or other disposition of a note, provided that: (a) the gain is not effectively connected with the conduct of a trade or business within the United States and, if required under an applicable tax treaty, a permanent establishment maintained in the United States; and (b) in the case of a Non-U.S. Holder that is an individual, the Non-U.S. Holder is not present in the United States for 183 days or more in the taxable year of the sale, exchange or other disposition of the note. An individual Non-U.S. Holder present in the United States for 183 days or more in the taxable year of sale, exchange or other disposition, subject to certain additional conditions, will be subject to U.S. federal income tax at a rate of 30% on the gain realized on the sale, exchange or other disposition.

A Non-U.S. Holder generally will be subject to tax in the same manner as a U.S. Holder with respect to gain realized on the sale, exchange, retirement or other disposition of a note if such gain is effectively connected with the conduct by the Non-U.S. Holder of a trade or business within the United States and, if required under an applicable tax treaty, a permanent establishment maintained in the United States. In some circumstances, such effectively connected gain received by a corporate Non-U.S. Holder may be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be provided by an applicable treaty.

Backup Withholding and Information Reporting

In general, in the case of a U.S. Holder, other than certain exempt holders, we and other payors are required to report to the IRS all payments of principal and interest on the notes. In addition, we and other payors generally are required to report to the IRS any payment of proceeds of the sale of a note before maturity. Additionally, backup withholding generally will apply to any payments if a U.S. Holder fails to provide an accurate taxpayer identification number and certify that the taxpayer identification number is correct, the U.S. Holder is notified by the IRS that it has failed to report all interest and dividends required to be shown on its U.S. federal income tax returns, or the U.S. Holder does not certify that it has not underreported its interest and dividend income. If applicable, backup withholding will be imposed currently at a rate of 24%.

In the case of a Non-U.S. Holder, backup withholding and information reporting generally will not apply to payments made if the Non-U.S. Holder provides the required certification that it is not a United States person, or the Non-U.S. Holder otherwise establishes an exemption, provided that the payor or withholding agent does not have actual knowledge that the holder is a United States person, or that the conditions of any exemption are not satisfied.

In addition, payments of the proceeds from the sale of a note to or through a foreign office of a broker or the foreign office of a custodian, nominee, or other dealer acting on behalf of a holder generally will not be subject to information reporting or backup withholding. However, if the broker, custodian, nominee or other dealer is a United States person, the government of the United States or the government of any state or political subdivision of any state, or any agency or instrumentality of any of these governmental units, a controlled foreign corporation for U.S. federal income tax purposes,

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a foreign partnership that is either engaged in a trade or business within the United States or whose U.S. partners in the aggregate hold more than 50% of the income or capital interest in the partnership, a foreign person 50% or more of whose gross income for a certain period is effectively connected with a trade or business within the United States, or a U.S. branch of a foreign bank or insurance company, information reporting (but not backup withholding) generally will be required with respect to payments made to a Non-U.S. Holder unless the broker, custodian, nominee, or other dealer has documentation of such holder's foreign status and the broker, custodian, nominee, or other dealer has no actual knowledge to the contrary.

Payment of the proceeds from a sale of a note to or through the U.S. office of a broker is subject to information reporting and backup withholding, unless the Non-U.S. Holder certifies as to its non-United States person status or otherwise establishes an exemption from information reporting and backup withholding.

Any amounts withheld under the backup withholding rules will be allowed as a refund or a credit against a holder's U.S. federal income tax liability provided the required information is furnished to the IRS.

Foreign Account Tax Compliance Act

The Foreign Account Tax Compliance Act ("FATCA") imposes a 30% U.S. withholding tax on certain U.S. source payments, including interest (and OID), dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S. source interest or dividends ("Withholdable Payments"), if paid to a "foreign financial institution" (including amounts paid to a foreign financial institution on behalf of a holder), unless such institution enters into an agreement with Treasury to collect and provide to Treasury certain information regarding U.S. financial account holders, including certain account holders that are foreign entities with U.S. owners, with such institution or otherwise complies with FATCA. FATCA also generally imposes a withholding tax of 30% on Withholdable Payments made to a non-financial foreign entity unless such entity provides the withholding agent with a certification that it does not have any substantial U.S. owners or a certification identifying the direct and indirect substantial U.S. owners of the entity. Under certain circumstances, a holder may be eligible for refunds or credits of such taxes.

These withholding and reporting requirements generally apply to U.S.-source periodic payments and, after December 31, 2018, to payments of gross proceeds from a sale or redemption. If we determine withholding is appropriate with respect to the notes, we will withhold tax at the applicable statutory rate, and we will not pay any additional amounts in respect of such withholding. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules. Prospective investors are urged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in the notes.

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UNDERWRITING (CONFLICTS OF INTEREST)

J.P. Morgan Securities LLC, Citigroup Global Markets Inc., Goldman Sachs & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated are acting as representatives of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the principal amount of notes set forth opposite its name below.

Underwriter	Principal Amount of Notes	Principal Amount of Notes
J.P. Morgan Securities LLC	$	$
Citigroup Global Markets Inc.		
Goldman Sachs & Co. LLC		
Merrill Lynch, Pierce, Fenner & Smith Incorporated		
Total	$	$

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the notes sold under the underwriting agreement if any of these notes are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the notes, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Discount

The representatives have advised us that the underwriters propose initially to offer the notes to the public at the public offering price set forth on the cover page of this prospectus and to dealers at those prices less a concession not in excess of % of the principal amount of the 20 notes with respect to the 20 notes and % of the principal amount of the 20 notes with respect to the 20 notes. The underwriters may allow, and those dealers may reallow, on sales to other dealers a concession not to exceed % of the principal amount of the 20 notes with respect to the 20 notes and % of the principal amount of the 20 notes with respect to the 20 notes. After the initial offering, the public offering prices, concessions or any other term of the offering may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us.

	Per Note	Total	Per Note	Total
Public offering price	%	$	%	$
Underwriting discount	%	$	%	$
Proceeds, before expenses, to us	%	$	%	$

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The expenses of the offering, not including the underwriting discount, are estimated at $ and are payable by us.

The notes are new issues of securities for which there currently is no market. We do not intend to apply for the notes to be listed on any securities exchange or to arrange for the notes to be quoted on any quotation system. The underwriters have advised us that they intend to make a market in the notes after completion of the offering and as permitted by applicable law. They are not obligated, however, to make a market in the notes and any market-making may be discontinued at any time at their sole discretion. However, we cannot assure you that the prices at which the notes will sell in the market after this offering will not be lower than the initial offering price or that an active trading market for the notes will develop and continue after this offering. Accordingly, no assurance can be given as to the development or liquidity of any market for the notes.

Price Stabilization, Short Positions

In connection with the offering, the underwriters may purchase and sell our notes in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of notes than they are required to purchase in the offering. Stabilizing transactions consist of various bids for or purchases of the notes made by the underwriters in the open market prior to the completion of the offering.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our notes or preventing or retarding a decline in the market price of our notes. As a result, the price of our notes may be higher than the price that might otherwise exist in the open market.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our notes. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Conflicts of Interest

Affiliates of J.P. Morgan Securities LLC, Citigroup Global Markets Inc., Goldman Sachs & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated are lenders under our unsecured senior line of credit. A portion of the net proceeds from this offering will be used to reduce the outstanding balance of our unsecured senior line of credit. See "Use of Proceeds." As of March 31, 2018, we had approximately $490 million outstanding under our unsecured senior line of credit. As a result of the foregoing, the representatives have advised us that more than 5% of the net proceeds will be used to repay indebtedness under our unsecured senior line of credit to banking affiliates of the underwriters.

Other Relationships

An affiliate of Merrill Lynch, Pierce, Fenner & Smith Incorporated is the Administrative Agent for our unsecured senior line of credit. An affiliate of J.P. Morgan Securities LLC, Citigroup Global Markets Inc. and Merrill Lynch, Pierce, Fenner & Smith Incorporated are Joint Lead Arrangers and Joint Bookrunners for our unsecured senior line of credit. An affiliate of J.P. Morgan Securities LLC and Citigroup Global Markets Inc. are Co-Syndication Agents for our unsecured senior line of credit. An affiliate of Goldman Sachs & Co. LLC is a Co-Documentation Agent for our unsecured senior line of credit. Affiliates of each of J.P. Morgan Securities LLC, Citigroup Global Markets Inc. and Merrill Lynch, Pierce, Fenner & Smith Incorporated are L/C Issuers and Swing Line Lenders for our

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unsecured senior line of credit. Affiliates of each of J.P. Morgan Securities LLC, Citigroup Global Markets Inc., Goldman Sachs & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated are lenders under our 2019 unsecured senior bank term loan. An affiliate of Merrill Lynch, Pierce, Fenner & Smith Incorporated is the Administrative Agent for our 2019 unsecured senior bank term loan. An affiliates of each of J.P. Morgan Securities LLC and Citigroup Global Markets Inc. are Co-Syndication Agents for our 2019 unsecured senior bank term loan. An affiliate of Goldman Sachs & Co. LLC is a Co-Documentation Agent for our 2019 unsecured senior bank term loan. J.P. Morgan Securities LLC, Citigroup Global Markets Inc. and Merrill Lynch, Pierce, Fenner & Smith Incorporated are Joint Lead Arrangers and Joint Lead Book Runners for our 2019 unsecured senior bank term loan. An affiliate of Citigroup Global Markets Inc. is a lender under our 2021 unsecured senior bank term loan. An affiliate of Citigroup Global Markets Inc. is the Administrative Agent for our 2021 unsecured senior bank term loan. Citigroup Global Markets Inc. is a Joint Lead Arranger and Joint Book Running Manager for our 2021 unsecured senior bank term loan. An affiliate of Merrill Lynch, Pierce, Fenner & Smith Incorporated is a lender under our construction loan for our development project at 50/60 Binney Street in our Cambridge submarket.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Some of the underwriters and their affiliates have engaged in, and may in the future engage in, investment banking, financial advisory and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. Certain of the underwriters or their affiliates that have a lending relationship with us may hedge their credit exposure to us consistent with their customary risk management policies. Typically, such underwriters and their affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities, including potentially the notes offered hereby. Any such credit default swaps or short positions could adversely affect future trading prices of the notes offered hereby. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Extended Settlement

We expect that delivery of the notes will be made to investors on or about , 2018, which will be the seventh business day following the date of this prospectus supplement (such settlement being referred to as "T+7"). Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the notes on the date of pricing of the notes or the next four succeeding business days will be required, by virtue of the fact that the notes initially will settle in T+7, to specify an alternative settlement cycle at the time of any such trade to prevent failed settlement and should consult their own advisors.

Notice to Prospective Investors in Canada

The notes may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or

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subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the notes must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Prospective Investors in the European Economic Area

The notes are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "MiFID II"); or (ii) a customer within the meaning of Directive 2002/92/EC (as amended, the "Insurance Mediation Directive"), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a qualified investor as defined in Directive 2003/71/EC (as amended, the "Prospectus Directive"). Consequently no key information document required by Regulation (EU) No 1286/2014 (as amended, the "PRIIPs Regulation") for offering or selling the notes or otherwise making them available to retail investors in the European Economic Area has been prepared and therefore offering or selling the notes or otherwise making them available to any retail investor in the European Economic Area may be unlawful under the PRIIPs Regulation.

This prospectus supplement has been prepared on the basis that any offer of notes in any Member State of the European Economic Area will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of notes. This prospectus supplement is not a prospectus for the purposes of the Prospectus Directive.

Notice to Prospective Investors in the United Kingdom

In the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). This document must not be acted on or relied on in the United Kingdom by persons who are not relevant persons. In the United Kingdom, any investment or investment activity to which this document relates is only available to, and will be engaged in with, relevant persons.

Notice to Prospective Investors in Hong Kong

The notes may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities

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and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the notes may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to notes which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Notice to Prospective Investors in Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the "Financial Instruments and Exchange Law") and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

Notice to Prospective Investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the notes may not be circulated or distributed, nor may the notes be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the notes are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired the notes under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

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LEGAL MATTERS

Certain legal matters relating to this offering will be passed upon for us by Morrison & Foerster LLP, Los Angeles, California, and certain matters with respect to Maryland law will be passed upon for us by Venable LLP, Baltimore, Maryland. Certain legal matters relating to this offering will be passed upon for the underwriters by Clifford Chance US LLP, New York, New York. Morrison & Foerster LLP and Clifford Chance US LLP will rely upon the opinion of Venable LLP as to all matters with respect to Maryland law.

EXPERTS

The consolidated financial statements of Alexandria Real Estate Equities, Inc. appearing in Alexandria Real Estate Equities, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2017 (including schedules appearing therein), and the effectiveness of Alexandria Real Estate Equities, Inc.'s internal control over financial reporting as of December 31, 2017, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

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PROSPECTUS

Alexandria Real Estate Equities, Inc.

Common Stock **Rights**
Preferred Stock **Warrants**

Debt Securities
Alexandria Real Estate Equities, L.P.

Guarantees of Debt Securities

We may issue Alexandria Real Estate Equities, Inc.'s shares of common stock, shares of preferred stock, rights, warrants or debt securities, and we or any selling security holders may offer and sell these securities from time to time in one or more offerings. Alexandria Real Estate Equities, L.P. may guarantee any debt securities that we issue under this prospectus.

Each time that we or any selling security holders sell securities under this prospectus, we will provide a prospectus supplement or other offering material that will contain specific information about the terms of that offering. The prospectus supplement or other offering material may also add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and any prospectus supplement or other offering material, you should rely on the information in the prospectus supplement or such other offering material.

We or any selling security holders may sell the securities to or through underwriters, and also to other purchasers or through agents. The names of the underwriters will be stated in the prospectus supplements or other offering material. We also may sell securities directly to investors. We will not receive any proceeds from the sale of common stock, preferred stock, rights, warrants or debt securities sold by any selling security holder. Alexandria Real Estate Equities, L.P. will not receive any proceeds from issuing guarantees of any debt securities.

Our common stock is traded on the New York Stock Exchange under the symbol "ARE." Our 7.00% Series D cumulative convertible preferred stock is traded on the New York Stock Exchange under the symbol "ARE-D."

Investing in our securities involves risks. See "Risk Factors" on page 2.

Neither the Securities and Exchange Commission 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 December 18, 2017.

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ABOUT THIS PROSPECTUS

Unless otherwise indicated or unless the context requires otherwise, all references in this prospectus to "we," "us," "our," "our company" or "the company" refer to Alexandria Real Estate Equities, Inc., a Maryland corporation, together with its consolidated subsidiaries, including Alexandria Real Estate Equities, Inc., L.P., a Delaware limited partnership.

This prospectus is part of a "shelf" registration statement that we have filed with the United States Securities and Exchange Commission (the "SEC"). By using a shelf registration statement, we or any selling security holders may sell the common stock, preferred stock, rights, warrants or debt securities and the related guarantees described in this prospectus, any prospectus supplement or any other offering material:

from time to time and in one or more offerings;

in one or more series; and

in any combination thereof.

If any securities are sold pursuant to this prospectus by any persons other than us, we will, in a prospectus supplement, name the selling security holders, indicate the nature of any relationship such holders have had with us or any of our affiliates during the three years preceding such offering, state the amount of securities of the class owned by such security holder prior to the offering and the amount to be offered for the security holder's account, and state the amount and (if one percent or more) the percentage of the class to be owned by such security holder after completion of the offering.

Neither this prospectus nor any accompanying prospectus supplement contains all of the information included in the registration statement, as permitted by the rules and regulations of the SEC. To understand fully the terms of the securities we or any selling security holders are offering with this prospectus, you should carefully read this entire prospectus, the applicable prospectus supplement and any other offering material, as well as the documents we have incorporated by reference. We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and therefore file reports and other information with the SEC. Statements contained in this prospectus and any accompanying prospectus supplement or other offering material about the provisions or contents of any agreement or other document are only summaries. If SEC rules or regulations require that any agreement or document be filed as an exhibit to the registration statement, you should refer to that agreement or document for its complete contents. You should not assume that the information in this prospectus, any prospectus supplement or any other offering material is accurate as of any date other than the date on the front of each document.

YOU SHOULD CAREFULLY READ THIS PROSPECTUS, THE APPLICABLE PROSPECTUS SUPPLEMENT AND ANY APPLICABLE OTHER OFFERING MATERIAL, AS WELL AS THE DOCUMENTS WE HAVE INCORPORATED BY REFERENCE AS DESCRIBED UNDER THE SECTION ENTITLED "WHERE YOU CAN FIND MORE INFORMATION." **WE ARE NOT MAKING AN OFFER OF THE SECURITIES OFFERED HEREBY IN ANY STATE WHERE SUCH OFFER OR SALE IS NOT PERMITTED.**

THIS PROSPECTUS MAY NOT BE USED TO SELL SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT OR OTHER OFFERING MATERIAL.

You should rely only on the information contained in this prospectus, the applicable prospectus supplement and/or other offering materials, and the documents we have incorporated by reference. We have not authorized anyone to provide you with different information. You should not assume that the information provided by this prospectus, the applicable prospectus supplement, our other offering materials or the documents we have incorporated by reference is accurate as of any date other than the date of the respective document.

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RISK FACTORS

Investment in any securities offered pursuant to this prospectus involves risks. Before acquiring any offered securities pursuant to this prospectus, you should carefully consider the information contained or incorporated by reference in this prospectus or in any accompanying prospectus supplement, including, without limitation, the risk factors incorporated by reference to our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q and the other information contained or incorporated by reference in this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable accompanying prospectus supplement before acquiring any of such securities. The occurrence of any of these risks might cause you to lose all or a part of your investment in the offered securities. Please also refer to the section below entitled "Forward-Looking Statements."

WHERE YOU CAN FIND MORE INFORMATION

Where Documents are Filed; Copies of Documents

We are subject to the informational requirements of the Exchange Act in accordance with which we file reports, proxy statements and other information with the SEC. This registration statement, the exhibits and schedules forming a part thereof, and the reports, proxy statements and other information we have filed with the SEC can be inspected and copied at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. Such material also may be accessed by visiting the following internet website maintained by the SEC that contains reports, proxy and information statements and other information regarding issuers, such as us, that file electronically with the SEC: http://www.sec.gov. In addition, our common stock and 7.00% Series D cumulative convertible preferred stock are listed on the New York Stock Exchange, and similar information regarding us and the information we provide to the exchange may be inspected and copied at the offices of The New York Stock Exchange, 11 Wall Street, New York, New York 10005.

You may also access further information about us by visiting our website at www.are.com. Please note that the information and materials found on our website, except for our SEC filings expressly described below, are not part of this prospectus and are not incorporated by reference into this prospectus.

Incorporation of Documents by Reference

We have filed with the SEC a registration statement on Form S-3 with respect to the securities offered by this prospectus. This prospectus is a part of that registration statement. As allowed by the SEC, this prospectus does not contain all of the information you can find in the registration statement or the exhibits to the registration statement. Instead, the SEC allows us to "incorporate by reference" information into this prospectus. This means that we can disclose particular important information to you without actually including such information in this prospectus by simply referring you to another document that we filed separately with the SEC.

The information we incorporate by reference is an important part of this prospectus and should be carefully read in conjunction with this prospectus and any prospectus supplement. Information that we file with the SEC after the date of this prospectus will automatically update and may supersede some of the information in this prospectus as well as information we previously filed with the SEC and that was incorporated by reference into this prospectus.

The following documents are incorporated by reference into this prospectus:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, as filed with the SEC on January 31, 2017;

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our Definitive Proxy Statement on Schedule 14A, as filed with the SEC on April 7, 2017 (solely to the extent specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2016);

our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2017, June 30, 2017 and September 30, 2017, as filed with the SEC on May 2, 2017, August 1, 2017 and October 31, 2017, respectively;

our Current Reports on Form 8-K, as filed with the SEC on February 22, 2017, February 24, 2017, March 3, 2017, March 9, 2017, March 15, 2017, May 12, 2017, July 3, 2017, July 7, 2017, August 21, 2017, November 14, 2017 and November 20, 2017;

the description of our 7.00% Series D cumulative convertible preferred stock contained in the Registration Statement on Form 8-A filed on December 16, 2015, including any amendments or reports filed for the purpose of updating such description;

the description of our common stock contained in the Registration Statement on Form 8-A filed on May 14, 1997, including any amendments or reports filed for the purpose of updating such description; and

all reports or documents that we file under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than those that we "furnish" pursuant to Item 2.02 or 7.01 of Form 8-K or other information "furnished" to the SEC) after the date of this prospectus and prior to the termination of the offering of securities described in this prospectus.

If information in any of these incorporated documents conflicts with information in this prospectus, prospectus supplement or any other offering materials, you should rely on the most recent information. If information in an incorporated document conflicts with information in another incorporated document, you should rely on the information in the most recent incorporated document.

You may request from us at no cost a copy of any document we incorporate by reference, excluding all exhibits to such incorporated documents (unless we have specifically incorporated by reference such exhibits either in this prospectus or in the incorporated document), by making such a request in writing or by telephone to the following address:

Alexandria Real Estate Equities, Inc.
385 East Colorado Boulevard, Suite 299
Pasadena, California 91101
Attention: Investor Relations
(626) 578-0777

Except as provided above, no other information (including information on our website) is incorporated by reference into this prospectus.

THE COMPANY

Alexandria Real Estate Equities, Inc. is a Maryland corporation formed in October 1994 that has elected to be taxed as a real estate investment trust ("REIT") for federal income tax purposes. We are an S&P 500® urban office REIT uniquely focused on collaborative life science and technology campuses in AAA innovation cluster locations with a total market capitalization of $16.1 billion and an asset base in North America of 28.6 million square feet as of September 30, 2017. The asset base in North America includes 20.6 million rentable square feet ("RSF") of operating properties, including 1.5 million RSF of development and redevelopment of new Class A properties currently undergoing construction. Additionally, the asset base in North America includes 8.0 million square feet of future development projects, including 1.1 million square feet of near-term projects undergoing marketing for lease and pre-construction activities and 3.3 million square feet of intermediate-term development

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projects. Founded in 1994, we pioneered this niche and have since established a significant market presence in key locations, including Greater Boston, San Francisco, New York City, San Diego, Seattle, Maryland, and Research Triangle Park. We are known for our high-quality and diverse tenant base, with approximately 50% of our annual rental revenue as of September 30, 2017 generated from investment-grade tenants. We have a longstanding and proven track record of developing Class A properties clustered in urban life science and technology campuses that provide our innovative tenants with highly dynamic and collaborative environments that enhance their ability to successfully recruit and retain world-class talent and inspire productivity, efficiency, creativity, and success. We believe these advantages result in higher occupancy levels, longer lease terms, higher rental income, higher returns, and greater long-term asset value.

Our primary business objective is to maximize stockholder value by providing our stockholders with the greatest possible total return and long-term asset value based on a multifaceted platform of internal and external growth. A key element of our strategy is our unique focus on Class A properties clustered in urban campuses. These key urban campus locations are characterized by high barriers to entry for new landlords, high barriers to exit for tenants, and a limited supply of available space. They represent highly desirable locations for tenancy by life science and technology entities because of their close proximity to concentrations of specialized skills, knowledge, institutions, and related businesses. Our strategy also includes drawing upon our deep and broad real estate, life science, and technology relationships in order to identify and attract new and leading tenants and to source additional value-creation real estate.

Alexandria Real Estate Equities, L.P. is a Delaware limited partnership of which our wholly owned subsidiary, ARE-QRS Corp., is the sole general partner. Alexandria Real Estate Equities, Inc. and ARE-QRS Corp. together hold all of the limited partnership interests in Alexandria Real Estate Equities, L.P. We directly or indirectly hold a majority of our interests in our properties and land, and conduct most of our operations, through Alexandria Real Estate Equities, L.P. and its subsidiaries.

For additional information regarding our business, we refer you to our filings with the SEC incorporated by reference in this prospectus. See "Where You Can Find More Information."

Our principal executive offices are located at 385 East Colorado Boulevard, Suite 299, Pasadena, California 91101 and our telephone number is (626) 578-0777.

SECURITIES THAT MAY BE OFFERED

We or any selling security holder may offer and sell from time to time, at prices determined by negotiation, "at-the-market" or otherwise, as described by the applicable prospectus or other offering material, in one or more offerings, the following securities:

- common stock;
- preferred stock;
- rights;
- warrants; and/or
- debt securities and related guarantees, if any.

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplement or other offering material, summarize all the material terms and provisions of the various types of securities that we or any selling security holder may offer under this prospectus. The particular terms of the securities offered by this prospectus will be described in a prospectus supplement or other offering material.

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This prospectus contains a summary of the material general terms of the various securities that we or any selling security holder may offer. The specific terms of the securities will be described in a prospectus supplement or other offering material, which may be in addition to or different from the general terms summarized in this prospectus. The summaries contained in this prospectus and in any prospectus supplements or other offering material may not contain all of the information that you would find useful. Accordingly, you should read the actual documents relating to any securities sold pursuant to this prospectus. See "Where You Can Find More Information" to find out how you can obtain a copy of those documents.

The terms of any offering of securities, the initial offering price of any such offering and the net proceeds to us, will be contained in the prospectus supplement or other offering material relating to that offering.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement or other offering material, we will use the net proceeds from the sale of the securities to reduce the outstanding balance on our unsecured senior line of credit or other borrowings or for general corporate purposes. If initially used to pay down our unsecured senior line of credit, we may then borrow from time to time under our unsecured senior line of credit to fund potential future acquisitions, to repay debt, or for general working capital and other corporate purposes, including the selective development, redevelopment or acquisition of properties, or the repurchase of our outstanding preferred stock.

We will not receive any of the proceeds from the sale of the securities to which this prospectus relates that are offered by any selling security holders.

CONSOLIDATED RATIOS OF EARNINGS TO FIXED CHARGES AND COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

The following table sets forth the consolidated ratios of earnings to fixed charges and the consolidated ratios of earnings to combined fixed charges and preferred stock dividends for the periods shown. The ratios of earnings to fixed charges were computed by dividing our earnings by our fixed charges. For this purpose, earnings consist of income from continuing operations before noncontrolling interests and interest expense less noncontrolling interests in income of subsidiaries that have not incurred fixed charges. Fixed charges consist of interest incurred (including amortization of deferred financing costs and capitalized interest).

	Nine Months Ended September 30,	Year Ended December 31,				
	2017	2016	2015	2014	2013	2012
Consolidated Ratio of Earnings to Fixed Charges	1.50(a)	0.26(b)	1.75(c)	1.42(d)	1.61	1.26(e)
Consolidated Ratio of Earnings to Combined Fixed Charges and Preferred Stock Dividends	1.33(a)	0.17(b)	1.48(c)	1.17(d)	1.34	1.00(e)

(a) Ratios for the nine months ended September 30, 2017, include the effect of losses on early extinguishment of debt aggregating $670 thousand, a preferred stock redemption charge of $11.3 million, and impairment of real estate of $203 thousand. Excluding the impact of losses on early extinguishment of debt, the preferred stock redemption charge, and the impairment of real estate, the consolidated ratio of earnings to fixed charges and the consolidated ratio of earnings to combined fixed charges and preferred stock dividends for the nine months ended September 30, 2017, were 1.51 and 1.44, respectively.

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(b)

Fixed charges and combined fixed charges and preferred stock dividends exceeded earnings by $118.2 million and $199.7 million, respectively, for the year ended December 31, 2016. Ratios for the year ended December 31, 2016, include the effect of losses on early extinguishment of debt aggregating $3.2 million, a preferred stock redemption charge of $61.3 million, and impairment of real estate of $209.3 million. Excluding the impact of losses on early extinguishment of debt, the preferred stock redemption charge, and the impairment of real estate, the consolidated ratio of earnings to fixed charges and the consolidated ratio of earnings to combined fixed charges and preferred stock dividends for the year ended December 31, 2016, were 1.59 and 1.41, respectively.

(c)

Ratios for the year ended December 31, 2015, include the effect of losses on early extinguishment of debt of $189 thousand and impairment of real estate of $23.3 million. Excluding the impact of losses on early extinguishment of debt and the impairment of real estate, the consolidated ratio of earnings to fixed charges and the consolidated ratio of earnings to combined fixed charges and preferred stock dividends for the year ended December 31, 2015, were 1.91 and 1.62, respectively.

(d)

Ratios for the year ended December 31, 2014, include the effect of losses on early extinguishment of debt aggregating $525 thousand, a preferred stock redemption charge of $2.0 million, impairment of land parcel of $24.7 million, and impairment of real estate of $27.0 million. Excluding the impact of losses on early extinguishment of debt, the preferred stock redemption charge, the impairment of land parcel, and the impairment of real estate, the consolidated ratio of earnings to fixed charges and the consolidated ratio of earnings to combined fixed charges and preferred stock dividends for the year ended December 31, 2014, were 1.83 and 1.52, respectively.

(e)

Ratios for the year ended December 31, 2012, include the effect of losses on early extinguishment of debt aggregating $2.2 million, a preferred stock redemption charge of $6.0 million, impairment of land parcel of $2.1 million, and impairment of real estate of $11.4 million. Excluding the impact of losses on early extinguishment of debt, the preferred stock redemption charge, the impairment of land parcel, and the impairment of real estate, the consolidated ratio of earnings to fixed charges and the consolidated ratio of earnings to combined fixed charges and preferred stock dividends for the year ended December 31, 2012, were 1.42 and 1.13, respectively.

DESCRIPTION OF STOCK

The following summary of the terms of our stock does not purport to be complete and is subject to and qualified in its entirety by reference to the Maryland General Corporation Law, our charter and our bylaws.

General

Our charter provides that we may issue up to

200,000,000 shares of common stock, $.01 par value per share ("common stock");

100,000,000 shares of preferred stock, $.01 par value per share ("preferred stock"); and

200,000,000 shares of excess stock, $.01 par value per share, or excess stock (as described below).

Of our preferred stock,

10,000,000 shares are classified as 7.00% Series D cumulative convertible preferred stock ("Series D preferred stock").

As of December 15, 2017, the following securities were issued and outstanding:

96,416,068 shares of our common stock; and

2,975,432 shares of our Series D preferred stock.

Under Maryland law, stockholders generally are not liable for a corporation's debts or obligations.

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Common Stock

Subject to the preferential rights of any other class or series of our stock and to the provisions of our charter regarding restrictions on ownership and transfer of our stock, holders of our common stock are entitled to receive dividends on such shares if, as and when authorized by our board of directors and declared by us out of assets legally available therefor. Our holders of common stock are also entitled to share ratably in our assets legally available for distribution to our stockholders in the event of our liquidation, dissolution or winding up after payment of or adequate provision for all our known debts and liabilities.

Subject to the provisions of our charter regarding the restrictions on ownership and transfer of our stock, each outstanding share of common stock entitles the holder thereof to one vote on all matters submitted to a vote of stockholders, including the election of directors, and, except as provided with respect to any other class or series of our stock, the holders of such shares will possess the exclusive voting power. In uncontested elections of directors, the affirmative vote of a majority of the total votes cast "for" or "against," or withheld as to a director nominee is sufficient to elect such director nominee. In contested elections, a plurality of votes cast is required for the election of a director. There is no cumulative voting in the election of directors, which means that the holders of a majority of the outstanding shares of our common stock can elect all of the directors then standing for election, and the holders of the remaining shares will not be able to elect any directors.

Holders of shares of our common stock generally have no preference, conversion, exchange, sinking fund or appraisal rights and have no preemptive rights to subscribe for any of our securities. Subject to the provisions of our charter regarding restrictions on ownership and transfer of our stock, shares of our common stock will each have equal distribution, liquidation and other rights.

Our charter authorizes our board of directors to reclassify any unissued shares of our common stock into other classes or series of classes of stock and to establish the number of shares in each class or series and to set the preferences, conversion or other rights, voting powers, restrictions, limitations as to dividends or other distributions, qualifications and terms and conditions of redemption for each such class or series. Thus, our board of directors could authorize the issuance of shares of common stock or preferred stock with terms and conditions which could have the effect of delaying, deferring or preventing a transaction or a change in control that might involve a premium price for holders of our common stock or otherwise be in their best interest.

Our outstanding shares of common stock are listed on the New York Stock Exchange under the symbol "ARE." Any additional shares of common stock we issue will also be listed on the New York Stock Exchange upon official notice of issuance.

Preferred Stock

Our charter authorizes our board of directors, without the approval of our stockholders, to classify any unissued shares of preferred stock and to reclassify any previously classified but unissued shares of preferred stock of any series. Prior to the issuance of shares of any series, our board of directors is required by the Maryland General Corporation Law and our charter to set, subject to the provisions of our charter regarding restrictions on transfer of our stock, the terms, preferences, conversion or other rights, voting powers, restrictions, limitations as to dividends or other distributions, qualifications or terms or conditions of redemption for each such series, all of which will be set forth in articles supplementary to our charter adopted for that purpose by our board of directors or a duly authorized special committee thereof. Using this authority, our board of directors could authorize the issuance of shares of preferred stock with terms and conditions that could delay, defer or prevent a transaction or a change in control that might involve a premium price for holders of our common stock or for other reasons be desired by them.

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Upon issuance against full payment of the purchase price therefor, shares of preferred stock will be fully paid and nonassessable. The specific terms of a particular class or series of preferred stock to be offered pursuant to this prospectus will be described in the prospectus supplement or other offering material relating to that class or series, including a prospectus supplement or other offering material providing that preferred stock may be issuable upon the exercise of warrants or conversion of other securities issued by us. The description of preferred stock set forth below and the description of the terms of a particular class or series of preferred stock set forth in the applicable prospectus supplement or other offering material do not purport to be complete and are qualified in their entirety by reference to the articles supplementary relating to that class or series.

Rank. Unless otherwise specified in the applicable prospectus supplement or other offering material, our preferred stock will, with respect to dividend rights and rights upon our liquidation, dissolution or winding up, rank:

- senior to all classes or series of our common stock, and to all our equity securities ranking junior to such preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up;

- on a parity with all equity securities authorized or designated by us, the terms of which specifically provide that such equity securities rank on a parity with the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up; and

- junior to all our existing and future indebtedness and to any class or series of equity securities authorized or designated by us, the terms of which specifically provide that such equity securities rank senior to the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up.

Conversion Right. The terms and conditions, if any, upon which any shares of any class or series of our preferred stock are convertible into shares of our common stock will be set forth in the applicable prospectus supplement or other offering material relating thereto. Such terms will include:

- the number of shares of our common stock into which the shares of our preferred stock are convertible;

- the conversion price (or manner of calculation thereof);

- the conversion period;

- provisions as to whether conversion will be at the option of the holders of such class or series of our preferred stock or us;

- the events requiring an adjustment of the conversion price; and

- provisions affecting conversion in the event of the redemption of such class or series of preferred stock.

Series D Preferred Stock. The dividends on our Series D preferred stock are cumulative and accrue from the date of original issuance. We pay dividends quarterly in arrears at an annual rate of $1.75 per share. Our Series D preferred stock has no stated maturity, is not subject to any sinking fund or mandatory redemption provisions and we are not allowed to redeem our Series D preferred stock, except to preserve our status as a REIT. Investors in our Series D preferred stock generally have no voting rights. We may, at our option, cause some or all of our Series D preferred stock to be automatically converted into shares of our common stock if the closing sale price per share of our common stock equals or exceeds 150% of the then-applicable conversion price of the Series D preferred stock for at least 20 trading days in a period of 30 consecutive trading days ending on the trading day immediately prior to our issuance of a press release announcing the exercise of our

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conversion option. Holders of our Series D preferred stock, at their option, may, at any time and from time to time, convert some or all of their outstanding shares into shares of our common stock at an applicable conversion rate, which is subject to adjustments for certain events, including, but not limited to certain dividends on our common stock in excess of $0.78 per share per quarter and dividends on our common stock payable in shares of our common stock. The foregoing summary of our Series D preferred stock is qualified in its entirety by reference to the description of our Series D preferred stock contained in the Registration Statement on Form 8-A filed with the SEC on December 16, 2015, a copy of which is incorporated by reference into this prospectus. As of September 30, 2017, the conversion rate for the Series D preferred stock was 0.2487 shares of our common stock per $25.00 liquidation preference, which was equivalent to a conversion price of approximately $100.52 per share of common stock.

Power to Issue Additional Shares of Common Stock and Preferred Stock

We believe that the power of our board of directors to authorize us to issue additional authorized but unissued shares of common stock or preferred stock and to classify or reclassify unissued shares of our common stock or preferred stock and thereafter to cause us to issue such classified or reclassified shares of stock will provide us with increased flexibility in structuring possible future financing and acquisition transactions and in meeting other needs that may arise. The additional classes or series of our preferred stock, as well as our common stock, will be available for issuance without further action by our stockholders, unless further action is required by applicable law or the rules of any stock exchange or automated quotation system on which our securities may be listed or traded. Although our board of directors has no present intention to do so, it could authorize us to issue a class or series of stock that could, depending upon the terms of such class or series, delay, defer or prevent a transaction or a change in control that might involve a premium price for holders of common stock or for other reasons be desired by them.

Restrictions on Ownership and Transfer

In order to qualify as a REIT under the Internal Revenue Code of 1986, as amended (the "Code"), not more than 50% of the value of our outstanding stock may be owned, directly or constructively, by five or fewer individuals or certain tax-exempt entities (as set forth in the Code) during the last half of a taxable year (other than the first year for which an election to be a REIT has been made). Furthermore, shares of our outstanding stock must be beneficially owned by 100 or more persons during at least 335 days of a taxable year of 12 months (other than the first year for which an election to be a REIT has been made) or during a proportionate part of a shorter taxable year.

In order for us to maintain our qualification as a REIT, among other purposes, our charter provides for an ownership limit, which prohibits, with certain exceptions, direct or constructive ownership of shares of stock representing more than 9.8% of the combined total value of our outstanding shares of stock by any person, as defined in our charter.

Our board of directors, in its sole discretion, may waive the ownership limit for any person. However, our board of directors may not grant such waiver if, after giving effect to such waiver, five individuals could beneficially own, in the aggregate, more than 49.9% of the value of our outstanding stock. As a condition to waiving the ownership limit, our board of directors may require a ruling from the Internal Revenue Service (the "IRS") or an opinion of counsel in order to determine our status as a REIT. Notwithstanding the receipt of any such ruling or opinion, our board of directors may impose such conditions or restrictions as it deems appropriate in connection with granting a waiver.

Our charter further prohibits any person from:

- beneficially or constructively owning shares of our stock that would result in us being "closely held" under Section 856(h) of the Code; and

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transferring shares of our stock if such transfer would result in shares of our stock being owned by fewer than 100 persons.

Any transfer in violation of any of these restrictions is void *ab initio*. Any person who acquires or attempts to acquire beneficial or constructive ownership of shares of our stock in violation of the foregoing restrictions on ownership and transfer is required to give us notice immediately and provide us with such other information as we may request in order to determine the effect of such transfer on our status as a REIT. The foregoing restrictions on ownership and transfer will not apply if our board of directors determines that it is no longer in our best interests to continue to qualify, or to attempt to qualify, as a REIT.

If any transfer of shares of our stock or other event occurs that would result in any person beneficially or constructively becoming the owner of shares of our stock in excess or in violation of the above ownership or transfer limitations, or becoming a prohibited owner, then that number of shares of our stock (rounded up to the nearest whole share) the beneficial or constructive ownership of which otherwise would cause such person to violate such limitations shall be automatically exchanged for an equal number of shares of excess stock. Those shares of excess stock will be automatically transferred to a trust for the exclusive benefit of one or more charitable beneficiaries, and the prohibited owner will generally not acquire any rights in such shares. This automatic exchange will be deemed to be effective as of the close of business on the business day prior to the date of such violative transfer. Shares of excess stock held in the trust will be issued and outstanding shares of our stock. The prohibited owner will not:

benefit economically from ownership of any shares of excess stock held in the trust;

have any rights to distributions thereon; or

possess any rights to vote or other rights attributable to the shares of excess stock held in the trust.

The trustee of the trust will have all voting rights and rights to dividends or other distributions with respect to shares of stock held in the trust, which rights shall be exercised for the exclusive benefit of the charitable beneficiary. Any dividend or other distribution paid prior to the discovery by us that shares of stock have been transferred to the trustee will be paid by the recipient of such dividend or distribution to us upon demand, or, at our sole election, will be offset against any future dividends or distributions payable to the purported transferee or holder, and any dividend or distribution authorized but unpaid will be rescinded as void *ab initio* with respect to such shares of stock and promptly thereafter paid over to the trustee with respect to such shares of excess stock, as trustee of the trust for the exclusive benefit of the charitable beneficiary. The prohibited owner will have no voting rights with respect to shares of excess stock held in the trust and, subject to Maryland law, effective as of the date that such shares of stock have been transferred to the trustee, the trustee will have the authority (at the trustee's sole discretion) to:

rescind as void any vote cast by a prohibited owner prior to the discovery by us that such shares have been transferred to the trustee, and

recast such vote in accordance with the desires of the trustee acting for the benefit of the charitable beneficiary.

However, if we have already taken irreversible corporate action, then the trustee will not have the authority to rescind and recast such vote.

Within 180 days after the date of the event that resulted in shares of our excess stock being transferred to the trust (or as soon as possible thereafter if the trustee did not learn of such event within such period), the trustee shall sell the shares of stock held in the trust to a person, designated by the trustee, whose ownership of the shares will not violate the ownership and transfer limitations set

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forth in our charter. Upon such sale, the interest of the charitable beneficiary in the shares sold will terminate and those shares of excess stock will be automatically exchanged for an equal number of shares of the same class or series of stock that originally were exchanged for the excess stock.

The trustee shall distribute to the prohibited owner, as appropriate:

- the price paid by the prohibited owner for the shares;
- if the prohibited owner did not give value for the shares in connection with the event causing the shares to be held in the trust (*e.g.*, a gift, devise or other such transaction), the "market price" (as defined in our charter) of such shares on the day of the event causing the shares to be held in the trust; or
- if the exchange for excess stock did not arise as a result of a purported transfer, the market price of such shares on the day of the other event causing the shares to be held in the trust.

If such shares are sold by a prohibited owner, then to the extent that the prohibited owner received an amount for such shares that exceeds the amount that such prohibited owner was entitled to receive pursuant to the aforementioned requirement, such excess shall be paid to the trustee.

All certificates representing shares of common stock and preferred stock will bear a legend referring to the restrictions described above.

Every owner of more than 5% (or such lower percentage as may be required by our charter, the Code or the Treasury regulations promulgated thereunder) of all classes or series of our stock, including shares of common stock, within 30 days after the end of each taxable year, is required to give written notice to us stating the name and address of such owner, the number of shares of each class and series of our stock which the owner beneficially owns and a description of the manner in which such shares are held. Each such owner must provide us such additional information as we may reasonably request in order to determine the effect, if any, of such beneficial ownership on our status as a REIT. In addition, each stockholder will be required upon demand to provide us such information as we may reasonably request in order to determine our status as a REIT, to comply with the requirements of any taxing authority or governmental authority or to determine such compliance, or to comply with the REIT provisions of the Code.

These ownership limits could delay, defer or prevent a transaction or a change in control that might involve a premium price for the holders of our common stock or might otherwise be desired by such holders.

DESCRIPTION OF RIGHTS

We may issue rights to purchase our common stock, preferred stock or other offered security independently or together with any other offered security. Any rights that we may issue may or may not be transferable by the person purchasing or receiving the rights. In connection with any rights offering to our stockholders, we may enter into a standby underwriting or other arrangement with one or more underwriters or other persons pursuant to which such underwriters or other person would purchase any offered securities remaining unsubscribed for after such rights offering. Each series of rights will be issued under a separate rights agent agreement to be entered into between us and a bank or trust company, as rights agent, that we will name in the applicable prospectus supplement. The rights agent will act solely as our agent in connection with the certificates relating to the rights and will not assume any obligation or relationship of agency or trust for or with any holders of rights certificates or beneficial owners of rights.

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The applicable prospectus supplement or other offering material will describe the specific terms of any offering of rights for which this prospectus is being delivered, including the following to the extent applicable:

- the number of rights issued or to be issued to each stockholder;
- the exercise price payable for each share of common stock, preferred stock or other offered security upon the exercise of the rights;
- the number and terms of the shares of common stock, preferred stock or other offered security which may be purchased per each right;
- the extent to which the rights are transferable;
- the date on which the holder's ability to exercise the rights shall commence, and the date on which the rights shall expire;
- the extent to which the rights may include an over-subscription privilege with respect to unsubscribed securities;
- if applicable, the material terms of any standby underwriting or other arrangement entered into by us in connection with the offering of such rights; and
- any other terms of the rights, including the terms, procedures, conditions and limitations relating to the exchange and exercise of the rights.

The description in the applicable prospectus supplement or other offering material of any rights that we may offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable rights certificate, which will be filed with the SEC.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase shares of our preferred stock, common stock or our debt securities. Warrants may be issued independently or together with any other securities offered by any prospectus supplement or other offering material and may be attached to or separate from such securities. Each series of warrants may be issued under a separate warrant agreement to be entered into between us and a warrant agent specified in the applicable prospectus supplement or other offering material. The warrant agent will act solely as our agent in connection with the warrants of such series and will not assume any obligation or relationship of agency or trust for or with any provisions of the warrants offered hereby.

The applicable prospectus supplement or other offering material will describe the terms of the warrants in respect of which this prospectus is being delivered, including, where applicable, the following:

- the title of the warrants;
- the aggregate number of the warrants;
- the price or prices at which the warrants will be issued;

the designation, terms and amount of securities purchasable upon exercise of the warrants;

the designation and terms of the securities, if any, with which the warrants are issued and the number of the warrants issued with each such security;

the date, if any, on and after which the warrants and securities issuable upon exercise of the warrants will be separately transferable, including any limitations on ownership and transfer of the warrants that may be appropriate to preserve our status as a REIT;

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the price or prices at which securities issuable upon exercise of the warrants may be purchased;

the date on which the right to exercise the warrants will commence and the date on which such right relating to the warrants expires;

the minimum or maximum amount of the warrants that may be exercised at any one time;

information with respect to book-entry procedures applicable to the warrants, if any;

a description of material federal income tax considerations; and

any other terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

DESCRIPTION OF DEBT SECURITIES AND RELATED GUARANTEES

This prospectus describes certain general terms and provisions of our debt securities. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a prospectus supplement, a pricing supplement or other offering materials. We will also indicate in the prospectus supplement or other offering materials whether the general terms and provisions described in this prospectus apply to a particular series of debt securities. We may issue our debt securities under one or more indentures. Each indenture and the instruments evidencing the debt securities of each series will be in the form filed or incorporated by reference as an exhibit to the registration statement containing this prospectus, a post-effective amendment to the registration statement or a document incorporated by reference herein and, in each case, may be obtained as described below under "Where You Can Find More Information." The form of indenture is subject to any amendments or supplements that may be adopted from time to time.

We will enter into each indenture with a trustee and the trustee for each indenture may be the same. Each indenture will be subject to, and governed by, the Trust Indenture Act of 1939, as amended. Unless otherwise expressly stated in the applicable prospectus supplement, the debt securities will be issued under an indenture among us, Alexandria Real Estate, L.P., as guarantor, and Branch Banking and Trust Company, as trustee. A copy of the form of indenture has been filed as an exhibit to the registration statement containing this prospectus. Because this description of debt securities is a summary, it does not contain all the information that may be important to you and this description is subject to, and qualified in its entirety by reference to, the form of the applicable indenture and the instrument evidencing the debt securities of the applicable series. You should read the applicable indenture and the instrument evidencing the applicable debt securities in their entirety to assure that you have all the important information you need to make any required decisions.

General

We may issue debt securities from time to time in one or more series without limitation as to aggregate principal amount. The debt securities will be our direct obligations and they may be secured or unsecured, senior or subordinated indebtedness.

Unless otherwise indicated in the prospectus supplement or other offering material, principal of, premium, if any, and interest on the debt securities will be payable, and the transfer of debt securities will be registrable, at any office or agency maintained by us for that purpose. The debt securities will be issued only in fully registered form without coupons and, unless otherwise indicated in the applicable prospectus supplement or other offering material, in denominations of $1,000 or integral multiples thereof. No service charge will be made for any registration of transfer or exchange of the debt securities, but we may require you to pay a sum sufficient to cover any tax or other governmental charge imposed in connection with the transfer or exchange.

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The prospectus supplement or other offering material will describe the following terms of the debt securities we are offering:

- the title of the debt securities;
- any limit on the aggregate principal amount of the debt securities;
- the date or dates on which the principal of the debt securities is payable;
- the rate or rates, which may be fixed or variable, at which the debt securities will bear interest, if any, or the method by which the rate or rates will be determined, the date or dates from which any interest will accrue, the interest payment dates on which any interest will be payable and the regular record date for the interest payable on any interest payment date;
- the place or places where the principal of and any premium and interest on the debt securities will be payable;
- the person who is entitled to receive any interest on the debt securities, if other than the record holder on the record date;
- the period or periods within which, the price or prices at which and the terms and conditions upon which the debt securities may be redeemed, in whole or in part, at our option;
- our obligation, if any, to redeem, purchase or repay the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder and the period or periods within which, the price or prices at which and the terms and conditions upon which we will redeem, purchase or repay, in whole or in part, the debt securities pursuant to such obligation;
- the currency, currencies or currency units in which we will pay the principal of and any premium and interest on any debt securities, if other than the currency of the United States of America and the manner of determining the equivalent in United States currency;
- if the amount of payments of principal of or any premium or interest on any debt securities may be determined with reference to an index or formula, the manner in which such amounts will be determined;
- if the principal of or any premium or interest on any debt securities is to be payable, at our election or at the election of the holder, in one or more currencies or currency units other than that or those in which the debt securities are stated to be payable, the currency, currencies or currency units in which payment of the principal of and any premium and interest on the debt securities as to which such election is made will be payable and the periods within which and the terms and conditions upon which such election is to be made;
- if other than the debt securities' principal amount, the portion of the principal amount of the debt securities that will be payable upon declaration of acceleration of the maturity;
- the applicability of the provisions described in the section of this prospectus captioned "Defeasance and Covenant Defeasance;"

if the debt securities will be issued in whole or in part in the form of a book-entry security as described in this prospectus, the depository we appointed or its nominee with respect to the debt securities and the circumstances under which the book-entry security may be registered for transfer or exchange or authenticated and delivered in the name of a person other than the depository or its nominee;

any provisions related to the conversion or exchange of the debt securities into our common stock, other debt securities or any other securities;

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whether the debt securities are entitled to the benefits of the guarantee of any guarantor, and whether any such guarantee is made on a senior or subordinated basis and, if applicable, a description of the subordination terms of any such guarantee;

any provisions regarding the status and ranking of the debt securities;

a description of material federal income tax consequences; and

any other terms of the debt securities.

We may offer and sell the debt securities as original issue discount securities at a substantial discount below their stated principal amount. The prospectus supplement or other offering material will describe the federal income tax consequences and other special considerations applicable to original issue discount securities and any debt securities the federal tax laws treat as having been issued with original issue discount. "Original issue discount securities" means any debt security that provides for an amount less than its principal amount to be due and payable upon the declaration of acceleration of the maturity of the debt security upon the occurrence and continuation of an "Event of Default."

The indenture does not contain covenants or other provisions designed to afford holders of the debt securities protection in the event of a highly leveraged transaction, change in credit rating or similar occurrence. However, no assurances can be provided that the applicable indenture for any particular series of debt securities will not contain such covenants.

Guarantees of the Debt Securities

Alexandria Real Estate Equities, L.P. may fully and unconditionally guarantee the due and punctual payment of the principal of, premium, if any, and interest on one or more series of such debt securities, whether at maturity, by acceleration, redemption or repayment or otherwise, in accordance with the terms of the applicable guarantee and the applicable indenture.

Covenants

The prospectus supplement or other offering material will describe any material covenants of a series of debt securities.

Events of Default

With respect to a series of debt securities, any one of the following events will constitute an event of default under the indenture:

failure to pay any interest on any debt security of that series when due, continued for 30 days;

failure to pay principal of or any premium on any debt security of that series when due;

failure to deposit any sinking fund payment, when due, in respect of any debt security of that series;

our failure to perform, or breach of, any other covenant or warranty in the indenture, other than a covenant included in the indenture solely for the benefit of a series of debt securities other than that series, continued for 90 days after written notice as provided in the indenture;

certain events involving our bankruptcy, insolvency or reorganization; or

any other event of default provided with respect to debt securities of that series.

If any event of default occurs and continues, either the trustee by written notice to us or the holders of at least 25 percent in principal amount of the outstanding debt securities of that series by written notice to us may declare the principal amount or, if the debt securities of that series are

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original issue discount securities, the portion of the principal amount as may be specified in the terms of those debt securities, of all the debt securities of that series to be due and payable immediately by a notice in writing to us, and to the trustee if given by holders. The principal amount (or specified amount) will then be immediately due and payable. After acceleration, but before a judgment or decree for payment based on acceleration has been obtained, the holders of a majority in principal amount of outstanding debt securities of that series may by written notice to us and the trustee, under specified circumstances, rescind and annul the acceleration.

Additional or different events of default applicable to a series of debt securities may be described in a prospectus supplement or other offering material. An event of default of one series of debt securities is not necessarily an event of default for any other series of debt securities. The prospectus supplement or other offering material relating to any series of debt securities that are original issue discount securities will contain the particular provisions relating to acceleration of the stated maturity of a portion of the principal amount of that series of original issue discount securities upon the occurrence and continuation of an event of default.

The indenture in part provides that, subject to the duty of the trustee during default to act with the required standard of care, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request or direction of any of the holders, unless the holders offer the trustee security or indemnity satisfactory to it. Generally, the holders of a majority in aggregate principal amount of the debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee.

A holder of any series of debt securities will not have any right to institute any proceeding with respect to the indenture, or for the appointment of a receiver or trustee, or for any other remedy, unless:

- the holder has previously given to the trustee written notice of a continuing event of default;
- the holders of at least 25 percent in principal amount of the outstanding debt securities of that series have made written request to the trustee to institute such proceeding as trustee;
- such holder or holders have offered to the trustee reasonable indemnity against the costs, expenses and liabilities to be incurred in compliance with such request;
- the trustee has not instituted proceedings within 60 days after receipt of such notice; and
- the trustee shall not have received from the holders of at least 25% in principal amount of the outstanding debt securities of that series a direction inconsistent with such request during the 60 day period.

However, these limitations do not apply to a suit instituted by a holder for enforcement of payment of the principal of and premium, if any, or interest on its debt securities on or after the respective due dates.

We are required to furnish to the trustee annually a statement as to our performance of certain obligations under the indenture and as to any default.

Modification and Waiver

We and the trustee may modify and amend the indenture with the consent of the holders of not less than the majority in aggregate principal amount of the outstanding debt securities of each series

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which is affected. Neither we nor the trustee may, however, modify or amend the indenture without the consent of the holders of all debt securities affected if such action would:

- change the stated maturity of the principal of, or any installment of principal of or interest on, any debt security;
- reduce the principal amount of, or the premium payable upon redemption, if any, or, except as otherwise provided in the prospectus supplement or other offering material, interest on, any debt security, including in the case of an original issue discount security the amount payable upon acceleration of the maturity;
- change the place or currency of payment of principal of, premium, if any, or interest on any debt security;
- impair the right to institute suit for the enforcement of any payment on any debt security on or after the stated maturity thereof, or in the case of redemption, on or after the redemption date;
- modify the conversion or exchange provisions, if any, of any debt security in a manner adverse to the holder of the debt security;
- reduce the percentage in principal amount of outstanding debt securities of any series, the consent of whose holders is required for modification or amendment of the indenture or for waiver of compliance with certain provisions of the indenture or for waiver of certain defaults; or
- modify certain provisions of the indenture, except to increase any percentage of principal amount whose holders are required to approve any change to such provision or to provide that certain other provisions of the indenture cannot be modified or waived without the consent of each holder affected.

The holders of at least a majority in principal amount of the outstanding debt securities of any series may, on behalf of all holders of that series, waive compliance by us with certain restrictive provisions of the indenture. The holders of not less than a majority in principal amount of the outstanding debt securities of any series may, on behalf of all holders of that series, waive any past default under the indenture, except a default:

- in the payment of principal, premium or interest and
- in respect of a covenant or provision of the indenture that cannot be modified or amended without the consent of those holders of each outstanding debt security of that series who were affected.

Consolidation, Merger and Sale of Assets

We, and any guarantor, may not consolidate with or merge into any other company or entity or convey, transfer or lease its properties and assets substantially as an entirety and may not permit any company or entity to merge into or consolidate with us or any guarantor or convey, transfer or lease its properties and assets substantially as an entirety to us or any guarantor, unless:

- in the case we, or the applicable guarantor, consolidate with or merge into another person or convey, transfer or lease our properties and assets substantially as an entirety to any person, the person formed by that consolidation or into which we are, or the applicable guarantor is, merged or the person which acquires by conveyance or transfer, or which leases, our properties and assets substantially as an entirety is a corporation, partnership or trust organized under the laws of the United States of America, any State or the District of Columbia, and expressly assumes our or the guarantor's obligations on the debt securities under a supplemental indenture or guarantee, as applicable;

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immediately after giving effect to the transaction no event of default, and no event which, after notice or lapse of time or both, would become an event of default, has occurred and is continuing; and

we have delivered to the trustee an officers' certificate and an opinion of counsel, each stating compliance with these provisions.

Defeasance and Covenant Defeasance

The indenture provides that if the provisions described below are made applicable to a particular series of debt securities, then, at our option, we:

will be discharged from any and all obligations in respect of the debt securities of that series, except for certain obligations to register the transfer of or exchange of debt securities of that series, replace stolen, lost or mutilated debt securities of that series, maintain paying agencies and hold moneys for payment in trust; or

need not comply with certain restrictive covenants of the indenture and the occurrence of an event described in the fourth bullet point in the section of the prospectus captioned "Events of Default" will no longer be an event of default,

in each case, if we deposit, in trust, with the trustee, money or United States Government obligations, which through the payment of interest and principal in accordance with their terms will provide money, in an amount sufficient to pay all the principal of and premium, if any, and interest on the debt securities of that series on the dates such payments are due, which may include one or more redemption dates that we designate, in accordance with the terms of the debt securities of that series.

We may establish this trust only if, among other things:

no event of default or event which with the giving of notice or lapse of time, or both, would become an event of default under the indenture shall have occurred and is continuing on the date of the deposit or insofar as an event of default resulting from certain events involving our bankruptcy or insolvency at any time during the period ending on the 121st day after the date of the deposit or, if longer, ending on the day following the expiration of the longest preference period applicable to us in respect of the deposit;

the defeasance will not cause the trustee to have any conflicting interest with respect to any other of our securities or result in the trust arising from the deposit to constitute, unless it is qualified as, a "regulated investment company;"

the defeasance will not result, in a breach or violation of, or constitute a default under, the indenture or any other agreement or instrument to which we are a party or by which we are bound; and

we have delivered an opinion of counsel to the effect that the holders will not recognize income, gain or loss for federal income tax purposes as a result of the defeasance and will be subject to federal income tax in the same manner as if the defeasance had not occurred, which opinion of counsel, in the case of the first item above, must refer to and be based upon a published ruling of the IRS, a private ruling of the IRS addressed to us, or otherwise a change in applicable federal income tax law occurring after the date of the indenture.

If we fail to comply with remaining obligations under the indenture after a defeasance of the indenture with respect to the debt securities of any series as described under the second item of the first sentence of this section and the debt securities of such series are declared due and payable because of the occurrence of any event of default, the amount of money and United States Government obligations on deposit with the trustee may be insufficient to pay amounts due on the debt

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securities of that series at the time of the acceleration resulting from the event of default. We will, however, remain liable for those payments.

DESCRIPTION OF GLOBAL SECURITIES

Book-Entry, Delivery and Form

The common stock, preferred stock, rights, warrants or debt securities may be issued in book-entry form and represented by one or more global notes or global securities. The global securities are expected to be deposited with, or on behalf of, The Depository Trust Company ("DTC"), New York, New York, as depositary, and registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred except as a whole by the depositary to its nominee or by the nominee to the depositary, or by the depositary or its nominee to a successor depositary or to a nominee of the successor depositary.

DTC, the world's largest securities depository, is:

a limited-purpose trust company organized under the New York Banking Law;

a "banking organization" within the meaning of the New York Banking Law;

a member of the Federal Reserve System;

a "clearing corporation" within the meaning of the New York Uniform Commercial Code; and

a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934.

DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues and money market instruments (from over 100 countries) that DTC's participants ("direct participants") deposit with DTC. DTC also facilitates the post-trade settlement among its direct participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between direct participants' accounts, which eliminates the need for physical movement of securities certificates. Direct participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as "indirect participants," such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies and clearing corporations that clear transactions through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC. More information about DTC can be found at www.dtcc.com. Information contained in this website is not incorporated by reference in, and should not be considered a part of, this prospectus.

Purchases of securities within the DTC system must be made by or through direct participants, which will receive a credit for those securities on DTC's records. The ownership interest of the actual purchaser of a security, which is sometimes referred to as a "beneficial owner," is in turn recorded on the direct and indirect participants' records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they entered into the transactions. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of

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participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual beneficial owners of the securities. DTC's records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants will remain responsible for keeping account of their holdings on behalf of their customers.

So long as the securities are in book-entry form, you will receive any payments and may transfer securities only through the facilities of the depositary and its direct and indirect participants.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Redemption notices will be sent to DTC. If less than all of the securities within an issue are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in such issue to be redeemed in accordance with DTC's procedures.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to securities unless authorized by a direct participant in accordance with DTC's applicable procedures. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date (identified in a listing attached to the omnibus proxy).

So long as securities are in book-entry form, we will make payments on securities to the depositary or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. Unless otherwise specified in our prospectus supplement, if securities are issued in definitive certificated form under the limited circumstances described below, we will have the option of paying interest by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee at least 15 days before the applicable payment date by the persons entitled to payment.

Principal and interest payments, redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us or our agent, if any, on the payable date in accordance with their respective holdings shown on DTC's records. Payments by direct and indirect participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in "street name." Those payments will be the responsibility of participants and not of DTC, our agent, if any, or us, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal and interest, redemption proceeds, distributions and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) will be our responsibility or the responsibility of our agent, if any, disbursement of such payments to direct participants will be the responsibility of DTC and disbursement of such payments to the beneficial owners will be the responsibility of direct and indirect participants.

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Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each purchaser of securities must rely on the procedures of DTC and its participants to exercise any rights under the securities and the applicable indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC is under no obligation to provide its services as depositary for the securities and may discontinue providing its services at any time by giving reasonable notice to us or our agent, if any. Neither we nor the trustee will have any responsibility for the performance by DTC or its direct participants or indirect participants under the rules and procedures governing DTC.

As noted above, each purchaser of securities generally will not receive certificates representing those securities. However, we will prepare and deliver certificates for such securities in exchange for the securities evidenced by the global securities if:

DTC notifies us that it is unwilling or unable to continue as a depositary for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Securities Exchange Act at a time when it is required to be registered and a successor depositary is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;

we determine, in our sole discretion, not to have such securities represented by one or more global securities; or

an event of default under the indenture has occurred and is continuing with respect to such series of securities.

Any interest in a global security that is exchangeable under the circumstances described above will be exchangeable for securities in definitive certificated form registered in the names that the depositary directs. It is expected that these directions will be based upon directions received by the depositary from its participants with respect to ownership of securities evidenced by the global securities.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that we believe to be reliable, but we take no responsibility for the accuracy thereof.

PROVISIONS OF MARYLAND LAW AND OF OUR CHARTER AND BYLAWS

The following summary of certain provisions of Maryland General Corporation Law and of our charter and bylaws does not purport to be complete and is subject to and qualified in its entirety by reference to Maryland General Corporation Law and our charter and bylaws.

Board of Directors

Our bylaws provide that the number of our directors may be established by our board of directors, but may not be fewer than the minimum number required by the Maryland General Corporation Law, which is one, nor more than 15. All directors are elected to serve until the next annual meeting of our stockholders and until their successors are duly elected and qualify.

Our charter and bylaws provide that our stockholders may remove any director by a vote of not less than two-thirds of all the votes entitled to be cast on the matter. Our charter and bylaws further provide that our board of directors may fill board vacancies and that any director elected to fill a vacancy may hold office for the remainder of the full term of the class of directors in which the vacancy occurred. Holders of shares of common stock will have no right to cumulative voting in the

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election of directors. Consequently, at each annual meeting of stockholders, the holders of a majority of the shares of common stock will be able to elect all of the directors then standing for election.

Business Combinations

Under the Maryland General Corporation Law, specified "business combinations" (including a merger, consolidation, share exchange or, in specified circumstances, an asset transfer or issuance or reclassification of equity securities) between a Maryland corporation and an interested stockholder or an affiliate of an interested stockholder are prohibited for five years after the most recent date on which the 10% or more beneficial owner acquires such status. An interested stockholder is defined as:

- any person who beneficially owns 10% or more of the voting power of the corporation's outstanding voting stock; or
- an affiliate of the corporation who, at any time within the two-year period prior to the date in question, was the beneficial owner of 10% or more of the voting power of the then-outstanding voting stock of the corporation.

A person is not an interested stockholder under the statute if the board of directors approved in advance the transaction by which he otherwise would have become an interested stockholder. In approving a transaction, the board of directors may provide that its approval is subject to compliance, at or after the time of approval, with any terms and conditions determined by the board.

After the five year period, any such business combination between the Maryland corporation and an interested stockholder must be recommended by the board of directors of such corporation and approved by the affirmative vote of at least:

- 80% of the votes entitled to be cast by holders of outstanding shares of voting stock of the corporation; and
- two-thirds of the votes entitled to be cast by holders of voting stock of the corporation other than shares held by the interested stockholder with whom, or with whose affiliate, the business combination is to be effected, or held by an affiliate or associate of the interested stockholder.

These super-majority vote requirements do not apply if the corporation's common stockholders receive "a minimum price" (as defined in the Maryland General Corporation Law) for their shares; and the consideration is received in cash or in the same form as previously paid by the 10% or more beneficial owner for its shares.

These provisions of the Maryland General Corporation Law do not apply, however, to business combinations that are approved or exempted by the board of directors of the corporation prior to the time before the interested stockholder becomes an interested stockholder. Our board of directors has adopted a resolution providing that the "business combination" provisions of the Maryland General Corporation Law shall not apply to us generally and that such resolution is irrevocable unless revocation, in whole or in part, is approved by the holders of a majority of the outstanding shares of common stock, but revocation will not affect any business combination consummated, or any business combination contemplated by any agreement entered into, prior to the revocation. As a result of the foregoing, any person who becomes a 10% or more beneficial owner may be able to enter into business combinations with us that may not be in the best interest of the stockholders, without our compliance with the business combination provisions of the Maryland General Corporation Law.

Control Share Acquisitions

The Maryland General Corporation Law provides that control shares of a Maryland corporation acquired in a control share acquisition have no voting rights except to the extent approved by the affirmative vote of holders of two-thirds of the votes entitled to be cast on the matter, excluding shares

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of stock owned by the acquiror, by officers or by directors who are employees of the corporation. Control shares are voting shares of stock which, if aggregated with all other such shares of stock previously acquired by the acquiror or in respect of which the acquiror is able to exercise or direct the exercise of voting power (except solely by virtue of a revocable proxy), would entitle the acquiror to exercise voting power in electing directors within one of the following ranges of voting power:

one-tenth or more but less than one-third;

one-third or more but less than a majority; or

a majority or more of all voting power.

Control shares do not include shares the acquiring person is then entitled to vote as a result of having previously obtained stockholder approval. A control share acquisition means the acquisition of control shares, subject to specified exceptions.

Under Maryland law, a person who has made or proposes to make a control share acquisition, upon satisfaction of specified conditions (including an undertaking to pay expenses of the meeting), may compel the board of directors of the corporation to call a special meeting of stockholders to be held within 50 days of demand to consider the voting rights of the shares. If no request for a meeting is made, the corporation may itself present the question at any meeting of the stockholders.

If voting rights are not approved at the meeting or if the acquiring person does not deliver an acquiring person statement as required by the statute, then, subject to specified conditions and limitations, the corporation may redeem any or all of the control shares (except those for which voting rights have previously been approved) for fair value determined, without regard to the absence of voting rights for the control shares, as of the date of the last control share acquisition by the acquiror or of any meeting of stockholders at which the voting rights of such shares are considered and not approved. If voting rights for control shares are approved at a meeting of the stockholders and the acquiror becomes entitled to vote a majority of the shares entitled to vote, all other stockholders may exercise appraisal rights. The fair value of the shares as determined for purposes of such appraisal rights may not be less than the highest price per share paid by the acquiror in the control share acquisition.

The control share acquisition statute does not apply (a) to shares acquired in a merger, consolidation or share exchange if the corporation is a party to the transaction, or (b) to acquisitions approved or exempted by the charter or bylaws of the corporation.

Our bylaws contain a provision exempting from the control share acquisition statute any acquisition by any person of shares of our stock. Our board of directors has resolved that, subject to Maryland law, this provision may not be amended or repealed without the approval of holders of at least a majority of the outstanding shares of common stock. There can be no assurance, however, that the provision will not be amended or eliminated in the future or that the resolution is enforceable under Maryland law.

Advance Notice of Director Nominations and New Business

Our bylaws provide that:

with respect to an annual meeting of stockholders, nominations of individuals for election to our board of directors and the proposal of business to be considered by stockholders may be made only:

pursuant to our notice of the meeting;

by or at the direction of our board of directors; or

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by a stockholder who is entitled to vote at the meeting and has complied with the advance notice procedures set forth in the bylaws; and

with respect to special meetings of stockholders, only the business specified in our notice of meeting may be brought before the special meeting of stockholders. Nominations of persons for election to our board of directors may be made at a special meeting of stockholders at which directors are to be elected only:

by or at the direction of our board of directors; or

provided that our board of directors has determined that directors shall be elected at such meeting, by a stockholder who is entitled to vote at the meeting and has complied with the advance notice provisions set forth in the bylaws.

Amendment to Our Bylaws

The board of directors has the exclusive power to adopt, alter, repeal or amend our bylaws.

Extraordinary Actions

Under the Maryland General Corporation Law, a Maryland corporation generally cannot dissolve, amend its charter, merge, sell all or substantially all of its assets, engage in a share exchange, convert or engage in similar transactions outside the ordinary course of business unless advised by the board of directors and approved by the affirmative vote of stockholders holding at least two-thirds of the shares entitled to vote on the matter unless a lesser percentage (but not less than a majority of all of the votes entitled to be cast on the matter) is set forth in the corporation's charter. Our charter provides for approval of such matters by the affirmative vote of a majority of all of the votes entitled to be cast thereon. Maryland law permits a corporation to transfer all or substantially all of its assets without the approval of the stockholders of the corporation to one or more persons if all of the equity interests of the person or persons are owned, directly or indirectly, by the corporation. Maryland law also does not require approval of the stockholders of a parent corporation to merge or sell all or substantially all of the assets of a subsidiary entity. Because operating assets may be held by a corporation's subsidiaries, as in our situation, this may mean that a subsidiary may be able to merge or to sell all or substantially all of its assets without a vote of the corporation's stockholders.

Subtitle 8

Subtitle 8 of Title 3 of the Maryland General Corporation Law permits a Maryland corporation with a class of equity securities registered under the Exchange Act and at least three independent directors to elect to be subject, by provision in its charter or bylaws or a resolution of its board of directors and notwithstanding any contrary provision in the charter or bylaws, to any or all of five provisions:

a classified board;

a two-thirds vote requirement for removing a director;

a requirement that the number of directors be fixed only by vote of the directors;

a requirement that a vacancy on the board be filled only by the remaining directors and for the remainder of the full term of the class of directors in which the vacancy occurred; and

a majority vote requirement for the calling by stockholders of a special meeting of stockholders.

Through provisions in our charter and bylaws unrelated to Subtitle 8, we already:

vest in the board the exclusive power to fix the number of directorships and

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require, unless called by our chairman of the board, our president, our chief executive officer or the board, the request of holders of a majority of outstanding shares to call a special meeting.

We have also elected to be subject to the provisions of Subtitle 8 relating to:

a two-thirds vote requirement for the removal of any director from the board and

the filling of vacancies on the board.

Anti-Takeover Effect of Certain Provisions of Maryland Law, Our Charter and Our Bylaws

The possible future application of the business combination, the control share acquisition and Subtitle 8 provisions of the Maryland General Corporation Law and the current Subtitle 8 elections and advance notice provisions of our bylaws may delay, defer or prevent a transaction or a change in control that might involve a premium price for holders of common stock or for other reasons be desired by them.

FEDERAL INCOME TAX CONSIDERATIONS

The following discussion summarizes the material U.S. federal income tax considerations relevant to our qualification as a REIT and the ownership and disposition of shares of our common stock. Supplemental U.S. federal income tax considerations relevant to holders of the securities offered by this prospectus may be provided in the prospectus supplement that relates to those securities. This discussion is based on current provisions of the Code, current and proposed Treasury regulations, administrative decisions and rulings of the IRS and court decisions as of the date hereof, all of which are subject to change (possibly with retroactive effect) and all of which are subject to differing interpretation. This discussion does not address all aspects of U.S. federal income taxation that may be relevant to you in light of your particular circumstances or to persons subject to special treatment under the U.S. federal income tax laws. In particular, this discussion deals only with stockholders that hold our common stock as capital assets within the meaning of the Code. Except as expressly provided below, this discussion does not address the tax treatment of special classes of stockholders, including, without limitation, banks, insurance companies, tax-exempt organizations, financial institutions, broker-dealers, persons holding our stock as part of a hedge, straddle or other risk reduction, constructive sale or conversion transaction, U.S. expatriates, persons subject to the alternative minimum tax, foreign corporations, foreign estates or trusts and persons who are not citizens or residents of the United States. This discussion may not be applicable to stockholders who acquired our stock pursuant to the exercise of options or warrants or otherwise as compensation. Furthermore, this discussion does not address any state, local, foreign or non-income tax considerations.

If a partnership (including, for this purpose, any entity treated as a partnership for U.S. federal income tax purposes) is a beneficial owner of our common stock, the U.S. federal income tax consequences to a partner in the partnership generally will depend on the status of the partner and the activities of the partnership. A stockholder that is a partnership, and the partners in such partnership, should consult their own tax advisors regarding the U.S. federal income tax considerations of an investment in our shares.

THE DISCUSSION SET FORTH BELOW IS NOT INTENDED TO BE, NOR SHOULD IT BE CONSTRUED TO BE, LEGAL OR TAX ADVICE TO ANY PARTICULAR STOCKHOLDER. ACCORDINGLY, YOU SHOULD CONSULT YOUR TAX ADVISORS ABOUT THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO YOUR PARTICULAR SITUATION AS WELL AS APPLICABLE STATE, LOCAL, FOREIGN AND NON-INCOME TAX LAWS.

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Taxation of Our Company

General

We have elected to be taxed as a REIT under Sections 856 through 860 of the Code, commencing with our taxable year ended December 31, 1996, and intend to continue to operate in a manner consistent with such election and all rules with which a REIT must comply. Although we believe we are organized and operate in such a manner, we cannot assure you we qualify or will continue to qualify as a REIT. Qualification as a REIT involves the application of highly technical and complex Code provisions for which there are only limited judicial and administrative interpretations. The determination of various factual matters and circumstances not entirely within our control may affect our ability to qualify. If we fail to qualify as a REIT (and we do not qualify for relief under certain provisions of the Code), we will be subject to federal income tax (including any applicable alternative minimum tax) on taxable income at regular corporate rates. In addition, unless entitled to relief under certain statutory provisions, we will be disqualified from treatment as a REIT for the four taxable years following the year during which qualification is lost. The additional tax would significantly reduce the cash flow available for distributions to stockholders. In addition, we would not be obligated to make distributions to stockholders.

We have received from Morrison & Foerster LLP its opinion to the effect that, commencing with our taxable year ended December 31, 2004, we were organized and have operated in conformity with the requirements for qualification and taxation as a REIT under the Code, and that our proposed method of operation will enable us to continue to meet the requirements for qualification and taxation as a REIT under the Code. It must be emphasized that this opinion is based and conditioned upon certain assumptions and representations made by us as to factual matters (including representations concerning, among other things, our business and properties, the amount of rents attributable to personal property and other items regarding our ability to meet the various requirements for qualification as a REIT). The opinion is expressed as of its date, and Morrison & Foerster LLP has undertaken no obligation to advise holders of our securities of any subsequent change in the matters stated, represented or assumed or any subsequent change in the applicable law. Moreover, qualification and taxation as a REIT depends on our having met and continuing to meet, through actual annual operating results, distribution levels and diversity of stock ownership, the various qualification tests imposed under the Code discussed below, the results of which will not be reviewed by Morrison & Foerster LLP.

In any year in which we qualify as a REIT, we will not be subject to federal income tax on that portion of our REIT taxable income or capital gain that is distributed to our stockholders, thereby substantially eliminating the "double taxation" of such income or gain (*i.e.*, the taxation of such income or gain at the corporate level and the taxation of any distribution of such income or gain at the stockholder level).

Notwithstanding our qualification as a REIT, we may be subject to tax under the following circumstances:

We will be subject to tax at normal corporate tax rates upon any undistributed taxable income or capital gain. If we elect to retain and pay income tax on our net long-term capital gain, stockholders would be required to include their proportionate share of such undistributed gain in income but would receive a credit for their share of any taxes paid on such gain by us. A stockholder would increase his tax basis in his or her shares by the amount of income included less his or her credit or refund. Any undistributed net long-term capital gain would be designated in a notice mailed to stockholders. Through December 31, 2016, we have never made such a designation.

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If we fail to satisfy either the 75% or the 95% gross income test discussed below, and nonetheless maintain our qualification as a REIT because certain other requirements are met, we will be subject to a 100% tax on (i) the greater of the amount by which we fail to satisfy either the 75% or the 95% gross income test (ii) multiplied by a fraction intended to reflect our profitability.

If we fail to satisfy the 5% asset test or the 10% vote and value test (and we do not qualify for a *de minimis* safe harbor) or we fail to satisfy the other asset tests, each of which are discussed below, and nonetheless maintain our qualification as a REIT because certain other requirements are met, we will be subject to a tax equal to the greater of $50,000 or an amount determined by multiplying the highest corporate tax rate by the net income generated by the assets that caused the failure for the period during which we failed to satisfy the tests.

If we fail to satisfy one or more REIT requirements other than the gross income or asset tests, but nonetheless maintain our qualification as a REIT because certain other requirements are met, we will be subject to a penalty of $50,000 for each such failure.

We will be subject to a tax of 100% on net income from any "prohibited transaction," as described below.

We will be subject to tax at the highest corporate tax rate on net income from the sale or other disposition of certain foreclosure properties held primarily for sale to customers in the ordinary course of business or other non-qualifying income from foreclosure property.

If we acquire any asset from a "C" corporation in a carry-over basis transaction and we subsequently recognize gain on the disposition of such asset during the five-year period beginning on the date of acquisition, such gain will be subject to tax at the highest regular corporate tax rate to the extent of any built-in gain. Built-in gain means the excess of (i) the fair market value of the asset over (ii) the adjusted basis in such asset on the date of acquisition.

We will be subject to a tax of 100% on the amount of any rents from real property, deductions, excess interest or services income that would be reapportioned between us and any of our "taxable REIT subsidiaries" in order to more clearly reflect the income of such subsidiaries. A taxable REIT subsidiary is any corporation (or an entity treated as a corporation under the Code) for which a joint election has been made by a REIT and such corporation to treat such corporation as a taxable REIT subsidiary with respect to such REIT.

If we fail to distribute during each calendar year at least the sum of (i) 85% of our REIT ordinary income for such year, (ii) 95% of our REIT capital gain net income for such year, other than capital gains we elect to retain and pay tax on and (iii) any undistributed taxable income from prior years, we will be subject to a 4% nondeductible excise tax on the excess of such sum over the amounts actually distributed. To the extent we elect to retain and pay income tax on our net long-term capital gain, such retained amounts will be treated as having been distributed for purposes of the 4% excise tax.

We may also be subject to the corporate "alternative minimum tax" as well as tax in various situations and on some types of transactions not presently contemplated.

We will use the calendar year both for federal income tax purposes and for financial reporting purposes. The requirements for our qualification as a REIT and certain additional matters are discussed in greater detail in the subsections that follow.

Share Ownership Test

Our shares must be held by a minimum of 100 persons for at least 335 days in each taxable year of 12 months or a proportionate number of days in any shorter taxable year. In addition, at all times

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during the second half of each taxable year, no more than 50% in value of our shares may be owned, directly or indirectly, including via application of constructive ownership rules, by five or fewer individuals, including certain tax-exempt entities. Any shares held by a qualified domestic pension or other retirement trust will be treated as held directly by its beneficiaries in proportion to their actuarial interest in such trust. If we comply with applicable Treasury regulations for ascertaining our actual ownership and did not know, or exercising reasonable diligence would not have reason to know, that more than 50% in value of our outstanding shares were held, actually or constructively, by five or fewer individuals, then we will be treated as meeting this share ownership requirement.

To ensure compliance with the 50% share ownership test, we have placed restrictions on the transfer of our shares to prevent concentration of ownership. Moreover, to evidence compliance with these requirements, under applicable Treasury regulations we must maintain records that disclose the actual ownership of our outstanding shares. Such regulations impose penalties for failing to do so. In fulfilling our obligation to maintain records, we must and will demand written statements each year from the record holders of designated percentages of our shares disclosing the actual owners of such shares as prescribed by Treasury regulations. A list of those persons failing or refusing to comply with such demand must be maintained as a part of our records. A stockholder failing or refusing to comply with our written demand must submit with his or her tax returns a similar statement disclosing the actual ownership of our shares and other information. In addition, our charter provides restrictions regarding the transfer of shares that are intended to assist us in continuing to satisfy the share ownership requirements. We intend to enforce the percentage limitations on ownership of shares of our stock to ensure that our qualification as a REIT will not be compromised.

Asset Tests

At the close of each quarter of our taxable year, we must satisfy certain tests relating to the nature of our assets:

At least 75% of the value of our total assets must be represented by interests in real property, interests in mortgages on real property, shares in other REITs, cash (generally including the functional currency of any of our "qualified business units" when used in the normal course of activities that produce income qualifying under the 95% or 75% gross income test discussed below), cash items, government securities, qualified temporary investments and, for taxable years beginning after December 31, 2015, interests in mortgages secured by both real property and personal property if the fair market value of such personal property does not exceed 15% of the total fair market value of all such property, personal property leased in connection with real property for which the rent attributable to personal property is not greater than 15% of the total rent received under the lease, and debt instruments issued by "publicly offered REITs."

No more than 25% of the value of our total assets may be represented by securities other than those in the 75% asset class described above.

Excluding securities of a qualified REIT subsidiary, another REIT, a taxable REIT subsidiary or other securities that qualify for the 75% asset test, we are prohibited from owning securities representing more than 10% of either the vote or the value of the outstanding securities of any one issuer and no more than 5% of the value of our total assets may be represented by securities of any one issuer. For purposes of the 10% value test, certain additional securities are excluded, including certain "straight debt," loans to individuals or estates and obligations to pay rents from real property.

No more than 25% (20% for taxable years beginning after December 31, 2017) of the value of our total assets may be represented by securities of one or more taxable REIT subsidiaries.

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For taxable years beginning after December 31, 2015, not more than 25% of the value of our total assets may be represented by debt instruments of "publicly offered REITs" to the extent those debt instruments would not be real estate assets but for the inclusion of debt instruments of "publicly offered REITs" in the meaning of real estate assets for taxable years beginning after December 31, 2015.

For purposes of the 10% value test described above:

our interest as a partner in a partnership is not considered a security;

any debt instrument issued by a partnership (other than "straight debt" or other excluded securities) will not be considered a security issued by the partnership if at least 75% of the partnership's gross income is derived from sources that would qualify for the 75% REIT gross income test; and

any debt instrument issued by a partnership (other than "straight debt" or other excluded securities) will not be considered a security issued by the partnership to the extent of our interest as a partner in the partnership.

We currently hold, and expect to hold in the future, securities of various issuers. While we do not anticipate our securities holdings would result in a violation of the REIT asset tests, fluctuations in value and other circumstances existing from time to time may increase our risk under the asset tests.

If we meet the asset tests at the close of a quarter, we will not lose our status as a REIT if we fail to satisfy such tests at the end of a subsequent quarter solely by reason of changes in the relative values of our assets (including changes caused solely by the change in the foreign currency exchange rate used to value a foreign asset). If we would fail these tests, in whole or in part, due to an acquisition of securities or other property during a quarter, we can avoid such failure by disposing of sufficient non-qualifying assets within 30 days after the close of such quarter. If we fail the 5% or 10% asset tests at the end of any quarter and do not cure within 30 days, we may still cure such failure or otherwise satisfy the requirements of such tests within six months after the last day of the quarter in which our identification of the failure occurred, provided the non-qualifying assets do not exceed the lesser of 1% of the total value of our assets at the end of the relevant quarter or $10,000,000. If our failure of the 5% and 10% asset tests exceeds this amount or we fail any of the other asset tests and do not cure within 30 days, we may avoid disqualification as a REIT provided (i) the failure was due to reasonable cause and not willful neglect, (ii) we file certain reports with the IRS, (iii) we take steps to satisfy the requirements of the applicable asset test within six months after the last day of the quarter in which our identification of the failure occurred, including the disposition of sufficient assets to meet the asset tests, and (iv) we pay a tax equal to the greater of $50,000 or the product of (x) the net income generated by the non-qualifying assets during the period in which we failed to satisfy the relevant asset test and (y) the highest U.S. federal income tax rate then applicable to U.S. corporations.

Gross Income Tests

Two separate percentage tests related to the sources of our gross income must be satisfied each taxable year.

First, at least 75% of our gross income (excluding gross income from "prohibited transactions," discussed below) for the taxable year generally must be:

"rents from real property";

interest on obligations secured by mortgages on, or interests in, real property, and, for taxable years beginning after December 31, 2015, interest on debt secured by mortgages on both real and personal property if the fair market value of such personal property does not exceed 15% of the total fair market value of all such property;

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gains from the disposition of interests in real estate assets (excluding gain from the sale of a nonqualified "publicly offered REIT" debt instrument) and real estate mortgages, other than gain from property held primarily for sale to customers ("dealer property");

distributions on shares in other REITs, as well as gain from the sale of such shares;

abatements and refunds of real property taxes;

income from the operation, and gain from the sale, of "foreclosure property";

commitment fees received for agreeing to make loans secured by mortgages on real property or to purchase or lease real property; and

certain qualified temporary investment income.

Second, in general, at least 95% of our gross income (excluding gross income from "prohibited transactions," discussed below) for the taxable year must be derived from the above-described qualifying income and dividends, interest or gains from the sale or other disposition of stock or other securities that are not dealer property.

Rents we receive will qualify as "rents from real property" only under the following conditions:

Rent will not qualify if we, or a direct or constructive owner of 10% or more of our shares, directly or constructively own 10% or more of a tenant unless the tenant is a taxable REIT subsidiary of ours and certain other requirements are met with respect to the real property being rented.

If rent attributable to personal property leased in connection with a lease of real property is greater than 15% of the total rent received under the lease, then the portion of rent attributable to such personal property will not qualify as rent from real property. The determination of whether an item of property constitutes real property or personal property under the REIT provisions of the Code is subject to both legal and factual considerations and, as such, is subject to differing interpretations. Our accountants and counsel have advised us with respect to applicable considerations underlying such determination. After consulting with our accountants and counsel and considering such advice, we have reviewed our properties and have determined that rents attributable to personal property do not exceed 15% of the total rent with respect to any particular lease. Due to the specialized nature of our properties, however, there can be no assurance that the IRS will not assert the rent attributable to personal property with respect to a particular lease is greater than 15% of the total rent with respect to such lease. If the IRS were successful, and the amount of such non-qualifying income, together with other non-qualifying income, exceeds 5% of our taxable income, we may fail to qualify as a REIT.

An amount received or accrued will not qualify as rent from real property if it is based in whole or in part on the income or profits of any person, although an amount received or accrued generally will not be excluded from "rents from real property" solely by reason of being based on a fixed percentage or percentages of receipts or sales.

For rents received to qualify as rents from real property, generally we must not furnish or render services to tenants, other than through a taxable REIT subsidiary or an "independent contractor" from whom we derive no income, unless such services are "usually or customarily rendered" in connection with the rental of property and are not otherwise considered "rendered to the occupant." A REIT is permitted to render a *de minimis* amount of impermissible services and still treat amounts otherwise received with respect to a property as rents from real property. The amount received or accrued by the REIT during the taxable year for impermissible services with respect to a property may not exceed 1% of all amounts

received or accrued by the REIT directly or indirectly from the property. For this purpose, the amount received for any service or

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management operation will be deemed not less than 150% of the direct cost of the REIT in furnishing or rendering the service.

Foreign currency gain with respect to income that otherwise qualifies for purposes of the 75% or 95% income test will not constitute gross income for purposes of the 75% or 95% income test, respectively.

Income from a hedging transaction made (i) to hedge indebtedness incurred or to be incurred by us to acquire or own real estate assets, (ii) primarily to manage the risk of currency fluctuations with respect to any item of income or gain that would qualify under the 75% or 95% income tests (or any property which generates such income or gain), or (iii) for taxable years beginning after December 31, 2015, to hedge the income or loss from prior hedging transactions, where the property or indebtedness which was the subject of the prior hedging transaction was extinguished or disposed of, in each case generally will not constitute gross income for purposes of the 75% and 95% gross income tests. Any such hedging transactions must be properly identified.

For purposes of determining whether we comply with the 75% and 95% gross income tests, gross income also does not include income from "prohibited transactions." A "prohibited transaction" is a sale of property held primarily for sale to customers in the ordinary course of a trade or business, excluding foreclosure property, unless we hold such property for at least two years and other requirements relating to the number of properties sold in a year, their tax bases, and the cost of improvements made to the property are satisfied. See " Taxation of Our Company General" for certain tax consequences of prohibited transactions.

Even if we fail to satisfy one or both of the 75% or 95% gross income tests for any taxable year, we may still qualify as a REIT for such year if we are entitled to relief under certain relief provisions of the Code. These relief provisions generally will be available if:

following our identification of the failure, we file a schedule with a description of each item of gross income subject to these gross income tests in accordance with regulations prescribed by the Treasury; and

our failure to comply was due to reasonable cause and not due to willful neglect.

If these relief provisions apply, nonetheless we will be subject to a special tax upon the greater of the amount by which we fail either the 75% or 95% gross income test for that year. See " Taxation of Our Company General" for a discussion of such tax.

Annual Distribution Requirements

In order to qualify as a REIT, we are required to make distributions, other than capital gain dividends, to our stockholders each year in an amount at least equal to (i) 90% of our REIT taxable income, computed without regard to the dividends paid deduction and REIT net capital gain, plus (ii) 90% of our net income after tax, if any, from foreclosure property, minus (iii) the sum of certain items of excess non-cash income. Such distributions must be made in the taxable year to which they relate, or in the following taxable year if declared before we timely file our tax return for such year and if paid on or before the first regular dividend payment after such declaration.

To the extent we do not distribute all of our net capital gain or distribute at least 90%, but less than 100%, of our REIT taxable income, as adjusted, we will be subject to tax on the undistributed amount at regular capital gains or ordinary corporate tax rates, as the case may be. We may elect to retain, rather than distribute, our net capital gain and pay tax on such gain. If we make this election, our stockholders would include in their income as long-term capital gains their proportionate share of the undistributed net capital gains as designated by us, and we would have to pay the tax on such gains within 30 days of the close of our taxable year. Each of our stockholders would be deemed to have

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paid such stockholder's share of the tax paid by us on such gains, which tax would be credited or refunded to the stockholder. Each stockholder would increase his tax basis in our shares by the amount of income to the holder resulting from the designation less the holder's credit or refund for the tax paid by us.

We intend to make timely distributions sufficient to satisfy the annual distribution requirements. It is possible that we may not have sufficient cash or other liquid assets to meet the 90% distribution requirement, due to timing differences between the actual receipt of income and actual payment of expenses on the one hand, and the inclusion of such income and deduction of such expenses in computing our REIT taxable income on the other hand. To avoid any problem with the 90% distribution requirement, we will closely monitor the relationship between our REIT taxable income and cash flow and, if necessary, borrow funds or distribute property in-kind to satisfy the distribution requirements. In addition, from time to time, we may determine to declare dividends payable in cash or stock at the election of each stockholder, subject to a limit on the aggregate cash that could be paid. Any such dividend would be distributed in a manner intended to be treated in full as a taxable dividend that counts toward satisfaction of our annual distribution requirements. While the IRS privately has ruled a distribution of stock pursuant to such an election will be considered a taxable dividend if certain requirements are met, no assurances can be provided that the IRS will not assert a contrary position and that such a distribution will be considered a taxable dividend that qualifies for the dividends paid deduction.

In order for distributions to count toward the annual distribution requirement applicable to REITs and to provide us with a REIT-level tax deduction, the distributions must not be "preferential dividends" unless such distributions are made in taxable years beginning after December 31, 2014 and we qualify as a "publicly offered REIT." Generally, a distribution is not a preferential dividend if the distribution is (1) pro rata among all outstanding shares within a particular class, and (2) in accordance with the preferences among different classes of stock as set forth in our organizational documents. We believe that we are, and expect we will continue to be, a "publicly offered REIT."

If we fail to meet the 90% distribution requirement as a result of an adjustment to our tax return by the IRS, or if we determine that we have failed to meet the 90% distribution requirement in a prior taxable year, we may retroactively cure the failure by paying a "deficiency dividend," plus applicable penalties and interest, within a specified period.

If we fail to distribute during each calendar year at least the sum of (i) 85% of our REIT ordinary income for such year, (ii) 95% of our REIT capital gain net income for such year, other than capital gains we elect to retain and pay tax on and (iii) any undistributed taxable income from prior years, we would be subject to a 4% nondeductible excise tax on the excess of such sum over the amounts actually distributed. To the extent we elect to retain and pay income tax on our long-term capital gain, such retained amounts will be treated as having been distributed for purposes of the 4% excise tax.

Absence of Earnings and Profits from Non-REIT Years

In order to qualify as a REIT, we must not have accumulated earnings and profits attributable to any non-REIT years. A REIT has until the close of its first taxable year in which it has non-REIT earnings and profits to distribute any such accumulated earnings and profits. Unless the "deficiency dividend" procedures described above apply and we comply with those procedures, failure to distribute such accumulated earnings and profits would result in our disqualification as a REIT. We believe that we had no accumulated earnings and profits as of December 31, 1995.

Tax Aspects of Our Investments in Partnerships and Qualified REIT Subsidiaries

Certain of our investments are held through partnerships or entities treated as partnerships for federal income tax purposes. In general, partnerships are "pass-through" entities that are not subject to

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federal income tax. Rather, partners are allocated their proportionate share of the items of income, gain, loss, deduction and credit of the partnership and are subject to tax thereon without regard to whether the partners receive a distribution from the partnership. We will include our proportionate share of the foregoing partnership items for purposes of the various REIT gross income tests and in the computation of our REIT taxable income, and we will include our proportionate share of the assets held by each partnership for purposes of the REIT asset tests.

Certain of our investments are held through wholly-owned subsidiaries that are treated as "qualified REIT subsidiaries." Generally, a qualified REIT subsidiary is a corporation, other than a taxable REIT subsidiary, all of the capital stock of which is owned by the REIT. If a REIT owns a subsidiary that is a qualified REIT subsidiary, the separate existence of that subsidiary is disregarded for federal income tax purposes. All assets, liabilities and items of income, deduction and credit of the qualified REIT subsidiary are treated as assets, liabilities and items of income, deduction and credit of the REIT itself. Our qualified REIT subsidiaries are not subject to federal income tax, and our ownership of the stock of a qualified REIT subsidiary will not violate the restrictions on ownership of securities, as described above under " Taxation of Our Company Asset Tests."

Investments in Taxable REIT Subsidiaries

We and any entity treated as a corporation for federal income tax purposes in which we own an interest may jointly elect to treat such entity as a "taxable REIT subsidiary." In addition, if a taxable REIT subsidiary of ours owns, directly or indirectly, securities representing 35% or more of the vote or value of an entity treated as a corporation for federal income tax purposes, that subsidiary also will be treated as a taxable REIT subsidiary of ours. Taxable REIT subsidiaries are permitted to engage in certain types of activities that cannot be performed directly by REITs without jeopardizing their REIT status.

Certain of our subsidiaries have elected to be treated as taxable REIT subsidiaries of ours and additional elections may be made in the future. As taxable REIT subsidiaries, these entities will pay federal and state income taxes at the full applicable corporate tax rates on their income prior to the payment of any dividends to us. Our taxable REIT subsidiaries will attempt to minimize the amount of such taxes, but there can be no assurance whether or the extent to which measures taken to minimize taxes will be successful. To the extent a taxable REIT subsidiary is required to pay federal, state or local income taxes, the cash available for distribution by such taxable REIT subsidiary to its stockholders will be reduced accordingly. Taxable REIT subsidiaries are subject to limitations on the deductibility of payments made to the associated REIT, which could materially increase the taxable income of the taxable REIT subsidiary. Further, we will be subject to a tax of 100% on the amount of any rents from real property, deductions, excess interest or services income that is reapportioned between us and any of our taxable REIT subsidiaries to more clearly reflect the income of the taxable REIT subsidiary.

Failure to Qualify

In the event we fail to satisfy one or more requirements for qualification as a REIT, other than the REIT asset and gross income tests, each of which is subject to the cure provisions described above, we will retain our REIT qualification if (i) the violation is due to reasonable cause and not willful neglect and (ii) we pay a penalty of $50,000 for each failure to satisfy the provision.

If we fail to qualify for taxation as a REIT in any taxable year and relief provisions do not apply, we will be subject to tax, including applicable alternative minimum tax, on our taxable income at regular corporate tax rates. Distributions to stockholders in any year in which we fail to qualify as a REIT will not be deductible by us, nor generally will they be required to be made under the Code. In such event, to the extent of current and accumulated earnings and profits, all distributions to our

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stockholders will be taxable as dividends and, subject to the limitations set forth in the Code, corporate distributees may be eligible for the dividends-received deduction. Unless entitled to relief under specific statutory provisions, we also will be disqualified from re-electing taxation as a REIT for the four taxable years following the year during which qualification was lost.

Taxation of Our Stockholders

For purposes of the following discussions, a "domestic stockholder" generally refers to (i) a citizen or resident of the United States; (ii) a corporation (including an entity treated as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States or of a political subdivision of the United States; (iii) an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or (iv) any trust if (1) a U.S. court is able to exercise primary supervision over the administration of such trust and one or more U.S. persons have the authority to control all substantial decisions of the trust or (2) it has a valid election in place to be treated as a U.S. person. A "foreign stockholder" generally refers to a person that is not a domestic stockholder.

If a partnership or an entity treated as a partnership for federal income tax purposes holds our stock, the federal income tax treatment of a partner in the partnership generally will depend on the status of the partner and the activities of the partnership. If you are a partner in a partnership holding our common stock, you should consult your own tax advisor regarding the consequences of the ownership and disposition of shares of our stock by the partnership.

Taxation of Taxable Domestic Stockholders

As long as we qualify as a REIT, distributions made to our taxable domestic stockholders out of current or accumulated earnings and profits, and not designated as capital gain dividends, will be taken into account by them as ordinary dividends and will not be eligible for the dividends-received deduction for corporations. Generally our ordinary dividends will be taxable to our domestic stockholders as ordinary income. However, such dividends will be taxable to individuals at the rate applicable to long-term capital gains to the extent such dividends are attributable to dividends received by us from non-REIT corporations (*e.g.*, taxable REIT subsidiaries) or are attributable to income upon which we have paid corporate income tax (*e.g.*, to the extent we distribute less than 100% of our taxable income). We do not expect a significant portion of our ordinary dividends to be eligible for taxation at long-term capital gain rates.

We may designate portions of our distributions as capital gain dividends. Alternatively, we may elect to retain and pay income taxes on capital gains rather than distribute them, in which case stockholders include their proportionate share of such undistributed gain in income, receive a credit for their share of the taxes paid by us and increase their basis in their shares by the amount of income included less the credit or refund. Distributions designated as capital gain dividends and retained net capital gain will be taxed as long-term capital gains to the extent they do not exceed our actual net capital gain for the taxable year, without regard to the period for which a stockholder has held its shares. For taxable years beginning after December 31, 2015, dividends designated as capital gain dividends may not exceed our dividends paid for the taxable year, including dividends paid the following year that are treated as paid in the current year. Corporate stockholders may be required to treat up to 20% of certain capital gain dividends as ordinary income. In addition, net capital gains attributable to the sale by us of depreciable real property held for more than 12 months are taxable to individuals at a 25% maximum federal income tax rate to the extent of previously claimed real property depreciation.

To the extent we make distributions in excess of current and accumulated earnings and profits, these distributions are treated as a return of capital to the stockholder, reducing the tax basis of a

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stockholder's shares by the amount of such distribution, with distributions in excess of the stockholder's tax basis taxable as capital gains.

Any dividend declared by us in October, November or December of any year and payable to a stockholder of record on a specific date in any such month may be treated as both paid by us and received by the stockholder on December 31 of such year, provided the dividend is actually paid by us during January of the following calendar year. Stockholders may not include in their individual income tax returns any of our net operating losses or capital losses.

A stockholder will realize capital gain or loss upon the sale or other taxable disposition of our stock equal to the difference between the sum of the fair market value of any property and cash received in such disposition and the stockholder's adjusted tax basis. Such gain or loss will be long-term capital gain or loss if the stockholder has held its shares for more than one year. Capital losses generally are available only to offset capital gains of the stockholder except in the case of individuals, who may offset up to $3,000 of ordinary income each year. In general, any loss upon a sale or exchange of shares by a stockholder who has held such shares for six months or less, after applying certain holding period rules, will be treated as a long-term capital loss to the extent of distributions from us required to be treated by such stockholder as long-term capital gains.

See "Taxation of Our Stockholders Tax Rates Applicable to Individual Stockholders" below for a discussion of applicable capital gains rates. Stockholders should consult their own tax advisors with respect to the taxation of capital gains and capital gain dividends and with regard to state, local and foreign taxes on capital gains and other income.

Distributions by us and gain from the sale or other disposition of our stock will not be treated as passive activity income. As a result, stockholders will not be able to apply any "passive losses" against this income or gain. Dividends from us (to the extent they do not constitute a return of capital) generally will be treated as investment income for purposes of the investment interest limitation. Net capital gain from the disposition of our stock or capital gain dividends generally will be excluded from investment income unless the stockholder elects to have the gain taxed at ordinary income rates.

Taxation of Foreign Stockholders

As background to this discussion, under the Foreign Investment in Real Property Tax Act of 1980 ("FIRPTA"), a "United States real property interest" ("USRPI") generally refers to interests in U.S. real property and shares of corporations at least 50% of whose assets consist of such interests. However, shares of certain "domestically controlled qualified investment entities" are excluded from USRPI treatment. We will qualify as a domestically controlled qualified investment entity so long as we qualify as a REIT and less than 50% in value of our shares are held by foreign stockholders. We currently anticipate that we will qualify as a domestically controlled qualified investment entity, although no assurance can be given that we will continue to qualify at all times.

Distributions to foreign stockholders out of our current and accumulated earnings and profits and not attributable to capital gains generally will be a dividend subject to U.S. withholding tax at a rate of 30% unless (i) an applicable tax treaty reduces such rate or (ii) such dividend is effectively connected to a U.S. trade or business conducted by such stockholder. Dividends effectively connected to a U.S. trade or business will be subject to federal income tax in the same manner and at the same rates applicable to domestic stockholders and, with respect to corporate foreign stockholders, may be subject to a 30% branch profits tax. We plan to withhold at the 30% rate unless (i) the foreign stockholder files an IRS Form W-8BEN or, in the case of a foreign entity stockholder, an IRS Form W-8BEN-E with us evidencing the application of a lower treaty rate or (ii) the foreign stockholder files an IRS Form W-8ECI with us claiming the distribution is effectively connected.

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To the extent distributions not attributable to capital gains exceed current and accumulated earnings and profits, such distributions would not be subject to federal income taxation. If we cannot determine at the time we make a distribution whether or not the distribution will exceed our current and accumulated earnings and profits, we normally will withhold tax on the entire amount of any distribution at the same rate as we would withhold on a dividend. However, a stockholder may obtain a refund of amounts that we withhold if we later determine that a distribution in fact exceeded our current and accumulated earnings and profits.

Under FIRPTA, distributions attributable to capital gains from the sale or exchange by us of USRPIs are treated as income effectively connected to a U.S. trade or business, are subject to federal income taxation in the same manner and at the same rates applicable to domestic stockholders and, with respect to corporate foreign stockholders, may be subject to a 30% branch profits tax. However, these distributions will not be subject to tax under FIRPTA, and will instead be taxed in the same manner as distributions described above, if:

- the distribution is made with respect to a class of shares regularly traded on an established securities market in the United States; and
- the foreign stockholder does not own more than 10% of such class at any time during the year within which the distribution is received.

Unless you are a "qualified shareholder" or a "qualified foreign pension fund" (both as defined below), we are required by applicable Treasury regulations to withhold 35% of any distribution to a foreign stockholder owning more than 10% of the relevant class of shares that could be designated by us as a capital gain dividend. Any amount so withheld is creditable against the foreign stockholder's FIRPTA tax liability.

In addition, distributions to certain non-U.S. publicly traded shareholders that meet certain record-keeping and other requirements ("qualified shareholders") are exempt from FIRPTA, except to the extent owners of such qualified shareholders that are not also qualified shareholders own, actually or constructively, more than 10% of our capital stock. Furthermore, distributions to "qualified foreign pension funds" or entities all of the interests of which are held by "qualified foreign pension funds" are exempt from FIRPTA. Non-U.S. holders should consult their tax advisors regarding the application of these rules.

Distributions attributable to capital gains from the sale or exchange of non-USRPIs are not subject to federal income taxation.

Gains from the sale or exchange of our stock by a foreign stockholder will not be subject to federal income taxation, provided we qualify as a domestically controlled qualified investment entity or the stockholder does not own more than 10% of the class of stock sold. For purposes of determining whether a REIT is a "domestically controlled qualified investment entity," a person who at all applicable times holds less than 5% of a class of stock that is "regularly traded" is treated as a U.S. person unless the REIT has actual knowledge that such person is not a U.S. person.

In addition, dispositions of our capital stock by qualified shareholders are exempt from FIRPTA, except to the extent owners of such qualified shareholders that are not also qualified shareholders own, actually or constructively, more than 10% of our capital stock. An actual or deemed disposition of our capital stock by such qualified shareholders or owners of such qualified shareholders who own 10% or less of our capital stock may also be treated as a dividend. Furthermore, dispositions of our capital stock by "qualified foreign pension funds" or entities all of the interests of which are held by "qualified foreign pension funds" are exempt from FIRPTA. Non-U.S. holders should consult their tax advisors regarding the application of these rules.

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Distributions and gains otherwise not subject to taxation under the foregoing rules may be subject to tax to the extent such distributions or gains were effectively connected to the conduct of a foreign stockholder's U.S. trade or business or were made to a nonresident alien individual present in the United States for 183 days or more during the taxable year.

Common stock owned or treated as owned by an individual who is not a citizen or resident of the United States (as specially defined for U.S. federal estate tax purposes) at the time of death will be includible in the individual's gross estate for U.S. federal estate tax purposes unless an applicable estate tax treaty provides otherwise.

THE FEDERAL INCOME TAXATION OF FOREIGN STOCKHOLDERS IS A HIGHLY COMPLEX MATTER THAT MAY BE AFFECTED BY MANY OTHER CONSIDERATIONS. ACCORDINGLY, FOREIGN STOCKHOLDERS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE INCOME AND WITHHOLDING TAX CONSIDERATIONS WITH RESPECT TO THEIR INVESTMENT IN US.

Taxation of Tax-Exempt Stockholders

While generally exempt from federal income taxation, tax-exempt entities, including qualified employee pension and profit sharing trusts and individual retirement accounts, are subject to tax on their unrelated business taxable income ("UBTI"). The IRS has issued a revenue ruling in which it held that amounts distributed by a REIT to a tax-exempt employees' pension trust do not constitute UBTI. Subject to the following paragraph, based upon the ruling, the analysis in the ruling and the statutory framework of the Code, distributions by us to a stockholder that is a tax-exempt entity also should not constitute UBTI, provided the tax-exempt entity has not financed the acquisition of its shares with "acquisition indebtedness" (within the meaning of the Code), the shares are not otherwise used in an unrelated trade or business of the tax-exempt entity and, consistent with our present intent, we do not hold a residual interest in a real estate mortgage investment conduit.

Certain social clubs, voluntary employee benefit associations, supplemental unemployment benefit trusts, and qualified group legal services plans that are exempt from taxation under special provisions of the federal income tax laws are subject to different UBTI rules, which generally will require them to characterize distributions received from us as UBTI. Furthermore, if any pension or other retirement trust that qualifies under Section 401(a) of the Code holds more than 10% by value of the interests in a "pension-held REIT" at any time during a taxable year, a portion of the dividends paid to the qualified pension trust by such REIT may constitute UBTI. For these purposes, a "pension-held REIT" is defined as a REIT that would not have qualified as a REIT but for the provisions of the Code that look through such a qualified pension trust in determining ownership of stock of the REIT and at least one qualified pension trust holds more than 25% by value of the interests of such REIT or one or more qualified pension trusts, each owning more than a 10% interest by value in the REIT, hold in the aggregate more than 50% by value of the interests in such REIT. We do not believe that we are, and we do not expect to become, a pension-held REIT.

Tax Rates Applicable to Individual Stockholders

Long-term capital gains (*i.e.*, capital gains with respect to assets held for more than one year) and "qualified dividends" received by an individual generally are subject to federal income tax at a maximum rate of 20%. Short-term capital gains (*i.e.*, capital gains with respect to assets held for one year or less) generally are subject to federal income tax at ordinary income rates. Because we are not generally subject to federal income tax on the portion of our REIT taxable income or capital gains distributed to our stockholders, our dividends generally are not eligible for the 20% maximum tax rate on qualified dividends. As a result, our ordinary dividends generally are taxed at the higher tax rates

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applicable to ordinary income. However, the 20% maximum tax rate for long-term capital gains and qualified dividends generally applies to:

- your long-term capital gains, if any, recognized on the disposition of our shares;
- our distributions designated as long-term capital gain dividends (except to the extent attributable to real estate depreciation, in which case such distributions are subject to a 25% tax rate to such extent);
- our dividends attributable to dividends received by us from non-REIT corporations, such as taxable REIT subsidiaries; and
- our dividends to the extent attributable to income upon which we have paid corporate income tax (*e.g.*, to the extent that we distribute less than 100% of our taxable income).

Information Reporting and Back-up Withholding

We will report to our domestic stockholders and to the IRS the amount of distributions paid during each calendar year, and the amount of tax withheld, if any, with respect to such distributions. Under the back-up withholding rules, a domestic stockholder may be subject to back-up withholding at applicable rates on distributions paid unless the stockholder (i) is a corporation or is otherwise specifically exempt from back-up withholding and, when required, demonstrates this fact or (ii) provides a taxpayer identification number, certifies as to no loss of exemption from back-up withholding, and complies with applicable requirements of the back-up withholding rules. A stockholder that does not provide us with his or her correct taxpayer identification number may also be subject to penalties imposed by the IRS.

Payments of dividends or of proceeds from the disposition of stock made to a foreign stockholder may be subject to information reporting and back-up withholding unless such holder establishes an exemption, for example, by properly certifying its foreign status on an IRS Form W-8BEN or, in the case of a foreign entity stockholder, an IRS Form W-8BEN-E, or another appropriate version of IRS Form W-8. Notwithstanding the foregoing, back-up withholding may apply if either we or our paying agent has actual knowledge, or reason to know, that a stockholder is a U.S. person.

Any amount paid as back-up withholding will be credited against the stockholder's income tax liability. In addition, we may be required to withhold a portion of any capital gain distributions made to any stockholders who fail to certify their non-foreign status to us. Currently, the back-up withholding rate is 28%.

Additional Healthcare Tax

Certain U.S. persons, including individuals, estates and trusts, will be subject to an additional 3.8% tax, which, for individuals, applies to the lesser of (i) "net investment income" or (ii) the excess of "modified adjusted gross income" over $200,000 ($250,000 if married and filing jointly or $125,000 if married and filing separately). "Net investment income" generally equals the taxpayer's gross investment income reduced by the deductions that are allocable to such income. Investment income generally includes passive income such as interest, dividends, annuities, royalties, rents and capital gains.

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Foreign Account Tax Compliance Act

The Foreign Account Tax Compliance Act ("FATCA") imposes a U.S. federal withholding tax on certain types of payments made to "foreign financial institutions" and certain other non-U.S. entities unless certain due diligence, reporting, withholding, and certification obligation requirements are satisfied. FATCA generally imposes a U.S. federal withholding tax at a rate of 30% on dividends on, and gross proceeds from the sale or other disposition of, our stock if paid to a foreign entity unless either (i) the foreign entity is a "foreign financial institution" that undertakes certain due diligence, reporting, withholding, and certification obligations, or in the case of a foreign financial institution that is a resident in a jurisdiction that has entered into an intergovernmental agreement to implement FATCA, the entity complies with the diligence and reporting requirements of such agreement, (ii) the foreign entity is not a "foreign financial institution" and identifies certain of its U.S. investors, or (iii) the foreign entity otherwise is excepted under FATCA. If we determine withholding is appropriate in respect of our common stock, we may withhold tax at the applicable statutory rate, and we will not pay any additional amounts in respect of such withholding. However, under delayed effective dates provided for in the Treasury regulations and other IRS guidance, such required withholding will not begin until January 1, 2019 with respect to gross proceeds from a sale or other disposition of our common stock.

If withholding is required under FATCA on a payment related to our common stock, holders of our common stock that otherwise would not be subject to withholding (or that otherwise would be entitled to a reduced rate of withholding) generally will be required to seek a refund or credit from the IRS to obtain the benefit of such exemption or reduction (provided that such benefit is available). You should consult your own tax advisor regarding the effect of FATCA on an investment in our common stock.

Possible Legislative or Other Actions Affecting Tax Consequences

Prospective stockholders should recognize that the present federal income tax treatment of an investment in us may be modified by legislative, judicial or administrative action at any time and that any such action may affect investments and commitments previously made. The rules dealing with federal income taxation are constantly under review by persons involved in the legislative process, the IRS and the Treasury, resulting in revisions of regulations and revised interpretations of established concepts as well as statutory changes. Revisions in federal tax laws and interpretations of these laws could adversely affect the tax consequences of your investment.

State, Local and Foreign Taxes

We and our stockholders may be subject to state, local or foreign taxation in various jurisdictions, including those in which we or they transact business or reside. The state, local and foreign tax treatment of us and our stockholders may not conform to the federal income tax consequences discussed above. Consequently, prospective stockholders should consult their own tax advisors regarding the effects of state, local and foreign tax laws on an investment in us.

Pending Tax Reform Legislation

On November 16, 2017, the U.S. House of Representatives passed the Tax Cuts and Jobs Act (H.R. 1). On December 2, 2017, the Senate passed a different version of the Tax Cuts and Jobs Act. A conference committee made up of members of the House and Senate reconciled the two versions of the Tax Cuts and Jobs Act and released a conference report on December 15, 2017. The reconciled version of the Tax Cuts and Jobs Act (the "Tax Reform Bill") must be passed in both the House and the Senate and signed by the President before becoming law. The Tax Reform Bill would make significant changes to the United States income tax rules applicable to both individuals and

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corporations. In particular, the Tax Reform Bill would reduce the corporate tax rate and may reduce the effective tax rate for individuals on the receipt of ordinary REIT dividends. It is not possible to state with certainty whether the Tax Reform Bill will pass, when it will pass, and the effect of the legislation on us and on an investment in our capital stock.

In general, the rules dealing with U.S. federal income taxation are continually under review by Congress, the IRS and the Treasury, and statutory changes as well as promulgation of new regulations, revisions to existing statutes, and revised interpretations of established concepts occur frequently. You are urged to consult with your tax advisor with respect to the status of the Tax Reform Bill and any other legislative, regulatory or administrative developments and proposals and their potential effect on your investment in our capital stock.

PLAN OF DISTRIBUTION

We may sell the securities to one or more underwriters for public offering and sale by them or we may sell the securities to investors directly or through agents or through a combination of any of these methods of sale. Our common stock or preferred stock, as applicable, may be issued by us upon conversion of our preferred stock or debt securities or upon exercise of rights or warrants. The securities that we distribute by any of these methods may be sold to the public, in one or more transactions, at a fixed price or prices that may be changed, at market prices prevailing at the time of sale, at prices related to prevailing market prices, or at negotiated prices.

Any underwriter or agent involved in the offer and sale of the securities will be named in the related prospectus supplement. We reserve the right to sell the securities directly to investors on our own behalf in those jurisdictions where we are authorized to do so.

Underwriters may offer and sell the securities at a fixed price or prices that may be changed at market prices prevailing at the time of sale, at prices related to prevailing market prices, or at negotiated prices. We also may, from time to time, authorize dealers, acting as our agents, to offer and sell the securities upon the terms and conditions described in the related prospectus supplement. Underwriters may receive compensation from us in the form of underwriting discounts or commissions and may also receive commissions from purchasers of the securities for whom they may act as an agent. Underwriters may sell the securities to or through dealers, and the dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions, which may be changed from time to time, from the purchasers for whom they may act as agents.

In addition, we may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with such a transaction, the third parties may sell securities covered by and pursuant to this prospectus and an applicable prospectus supplement or pricing supplement, as the case may be. If so, the third party may use securities borrowed from us or others to settle such sales and may use securities received from us to close out any related short positions. We may also loan or pledge securities covered by this prospectus and an applicable prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement or pricing supplement, as the case may be.

Any underwriting compensation paid by us to underwriters or agents in connection with the offering of the securities, and discounts, concessions or commissions allowed by underwriters to participating dealers, will be stated in the related prospectus supplement. Dealers and agents participating in the distribution of the securities may be deemed to be underwriters, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions under the applicable securities laws. Underwriters, dealers and agents may be entitled, under agreements entered into with us, to

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indemnification against and contribution towards certain civil liabilities, including any liabilities under the applicable securities laws.

Some or all of the securities we may sell may be new issues of securities with no established trading market. We cannot give any assurances as to the liquidity of the trading market for any of our securities.

In connection with an offering of securities, the underwriters may purchase and sell securities in the open market. These transactions may include over-allotment, syndicate covering transactions and stabilizing transactions. Over-allotment involves sales of securities in excess of the principal amount of securities to be purchased by the underwriters in an offering, which creates a short position for the underwriters. Covering transactions involve purchase of the securities in the open market after the distribution has been completed in order to cover short positions. Stabilizing transactions consist of certain bids or purchases of securities made for the purpose of preventing or slowing a decline in the market price of the securities while the offering is in progress. Any of these activities may have the effect of preventing or slowing a decline in the market price of the securities being offered. They may also cause the price of the securities being offered to be higher than the price that otherwise would exist in the open market in the absence of these transactions. The underwriters may conduct these transactions in the over-the-counter market or otherwise. If the underwriters commence any of these transactions, they may discontinue them at any time.

Certain of the underwriters, dealers or agents and their associates may engage in transactions with, and perform services for us and our affiliates in the ordinary course of business for which they may receive customary fees and expenses.

LEGAL MATTERS

Certain legal matters with respect to the guarantees and federal income tax will be passed upon for us by Morrison & Foerster LLP, Los Angeles, California. The validity of the securities will be passed upon for us by Venable LLP, Baltimore, Maryland. If legal matters in connection with any offering of any of the securities described in this prospectus and the applicable prospectus supplement or other offering material are passed on by counsel for any underwriters of such offering, that counsel will be named in the applicable prospectus supplement or other offering material.

EXPERTS

The consolidated financial statements of Alexandria Real Estate Equities, Inc. appearing in Alexandria Real Estate Equities, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2016 (including the schedule appearing therein), and the effectiveness of Alexandria Real Estate Equities, Inc.'s internal control over financial reporting as of December 31, 2016 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

FORWARD-LOOKING STATEMENTS

This prospectus and the documents we have incorporated by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. You can identify the forward-looking statements by their use of forward-looking words such as "believes," "expects," "may," "will," "should," "seeks," "intends," "plans," "estimates," "forecast," "guidance," "projects" or "anticipates," or the negative of these words or similar words. Forward-looking statements involve inherent risks and uncertainties regarding events, conditions and financial trends that may affect our future plans of

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operation, business strategy, results of operations and financial position. A number of important factors could cause actual results to differ materially from those included within or contemplated by the forward-looking statements, including, but not limited to, those described in our most recently filed Annual Report on Form 10-K and our most recently filed Quarterly Report on Form 10-Q as incorporated herein by reference. See "Where You Can Find More Information." Other than as may be required by law, we do not undertake any responsibility to update any of these factors or to announce publicly any revisions to forward-looking statements, whether as a result of new information, future events or otherwise.

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Alexandria Real Estate Equities, Inc.

$ % Senior Notes due 20
$ % Senior Notes due 20
Fully and Unconditionally Guaranteed by Alexandria Real Estate Equities, L.P.

PROSPECTUS SUPPLEMENT

J.P. Morgan

Green Structuring Agent

BofA Merrill Lynch
Citigroup
Goldman Sachs & Co. LLC

June , 2018