Capital Availability for High-Technology Businesses in Maine

FAME
Finance Authority of Maine

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CONTENTS

EXECUTIVE SUMMARY

The Maine Legislature directed the Finance Authority of Maine ("FAME") to examine the availability of capital for high-technology ("high-tech") businesses in Maine. "The Act to Implement the Recommendations of the Commission to Study the Restructuring of the State's Fiscal Policies to Promote the Development of High-Technology Industry in Maine" sets the mandate as follows (L.D. 2216, Section 3):

> "...The Finance Authority of Maine shall analyze the availability of capital for business start-up and development to determine if sufficient capital is available for all levels of high-technology business needs and identify what barriers may exist to accessing capital. The FAME shall develop strategies for increasing capital, if necessary, and for assisting fledgling businesses in locating and obtaining capital and for removing barriers to access..."

The financing needs of high-technology businesses and the likely sources of capital for these companies are reviewed. The report also discusses when certain kinds of capital are inappropriate for high-technology companies and reasons for this.

A working definition of high-tech businesses is provided in order to clarify what kinds of companies are considered in this report. They are defined as companies that base their business model on the application of sophisticated technologies or processes that are proprietary or patented and which provide a strategic advantage in the marketplace.

The relationship of risk to the stages of a company's life is discussed using a "Risk Continuum" model to provide the platform on which sources of capital can be logically presented and compared to one another. The Risk Continuum is used to describe the life stages of a company, sources and amounts of capital used to fund growth, and the relative risk of loss to investors at each stage of growth.

In general, very young businesses with no earnings and little, if any, sales cannot afford debt. They are funded by high-risk, "patient" equity capital from friends, family, or private investors ("angels") who purchase stock or the rights to stock and seek an adequate risk-adjusted return. When a business achieves sales and positive cash flow, it becomes a candidate for high to moderate-risk capital from angels, professional venture capital funds or specialized debt instruments. When a business becomes profitable it is a candidate for low-risk commercial debt financing.

State-sponsored programs are reviewed and compared along the Risk Continuum. The review found that the programs that target high-risk, early-stage businesses are more likely to support high-technology companies than other State-sponsored programs. The higher use rate for State-sponsored programs that target early-stage businesses is partly due to specific program criteria and partly due to the fact that high-technology companies often offer growth and public benefit potential that induce program managers to choose these types of companies as investment targets.

Private sources of funding are also reviewed along the Risk Continuum, but are very hard to quantify because of their private nature. Private sources of capital for high-technology businesses come into play at all risk levels. Private investors can include the founder, friends and family, business angels (private third party investors), venture capital funds, banks, strategic business partners, public equity markets, and other sources. The likely investor and amount of money depend on the type of business and what stage of development it is in. Families, friends and angels are important sources of funds for early stage companies. As these companies mature and grow larger, venture funds, and banks play a more important role. Several for-profit venture funds that now operate in Maine are identified and their activity is summarized.

Based on the work done for this report, and earlier work that is cited and reviewed in the current report, the following recommendations are provided as a strategy to assure adequate sources of funding for high-technology companies and to minimize barriers to access of capital for these companies:

- Increase availability of funds for State-sponsored programs that address risk capital needs, including increased funding for the Small Enterprise Growth Fund. Raise the funds available through this program from $5,000,000 to $10,000,000.

- Assure availability of continued "angel" funding via the Seed Capital Tax Credit Program. This program will become more attractive to investors if the tax credit is increased from 30% of the investment amount to 40% or even 50%. Additional private funding could be leveraged through this program if it becomes more user friendly for institutional venture capital funds.

- More creativity in management of State-sponsored, specialized debt programs could be used to provide more availability of capital to high-technology companies. This will slide these programs further towards the high-risk end of the Risk Continuum. We recommend using the Economic Recovery Loan Program as a pilot program for this activity by allocating $5,000,000 of existing available funds from that program for higher-risk investments in the form of patient debt with stock warrants or other tools to create secondary sources of returns to the fund.

- Maximize leverage of State-sponsored funding and remove barrier to investment with mentoring and training for start-up high-technology management teams by supporting private sector sources of risk capital and sponsoring training seminars and classes for investors and entrepreneurs:

    1) Support and encourage angel investors using networking forums like the Maine Investment Exchange (MIX).

2) Sponsor training programs for angels like the "Seed Investing as a Team Sport" Seminar recently hosted in Maine by FAME. Similar seminars and forums can be supported for entrepreneurs. The Kaufman Foundation's FASTRAC Business Training Program should be supported and expanded in Maine.

3) Support of private venture funds that are willing to invest in early-stage, Maine companies via tax credits, coinvestments, networking and other support.

4) Support and encourage direct communication between managers of the Maine Technology Institute ("MTI"), the Small Enterprise Growth Fund, FAME and managers of other State-sponsored finance programs to be prepared to support the commercialization efforts that will ultimately occur from the Maine Technology Institute's R&D investments.

5) Further remove barriers to capital with support of business incubator facilities to lower initial capital requirements for young companies.

I) INTRODUCTION

High-technology businesses are important to Maine because they represent the opportunity to diversify and add vitality to the local economy. Successful high-technology ("high-tech") companies add jobs to a local economy on a net basis and often provide higher paying jobs than more traditional industries. They require an educated population with skills in various fields of science, often including computer, biology, physics, and other disciplines. They also need marketing, finance, and operations specialists to execute their business strategy in what is frequently a national or global marketplace. Companies that add value either by manufacturing products or providing significant enhancement to services, bring new capital into the local economy. The secondary benefits from this mix of quality jobs and new capital are shared by the local community as payrolls are spent to support families, the tax base is increased, and in the best cases, a good corporate citizen puts down roots.

This report looks at the financing needs of high-tech businesses and what the likely sources of capital are for these types of companies. It also discusses when certain kinds of capital are inappropriate for high-tech companies and reasons why this is so.

In the Methods and Definitions Section, the process of determining answers to the legislative document is described. First, a working definition of high-tech businesses is provided in order to clarify what kinds of companies are considered in this study. Then the relationship of risk to the stages of a company's life is discussed using the Risk Continuum model shown in Figure 1 (page 7). This is a very important component of the report because it provides the platform on which sources of capital can be presented logically and compared to one another. The Risk Continuum is then used to describe the life stages of a company, sources and amounts of capital used to fund each stage of growth, and the relative risk of loss to investors at each stage of growth.

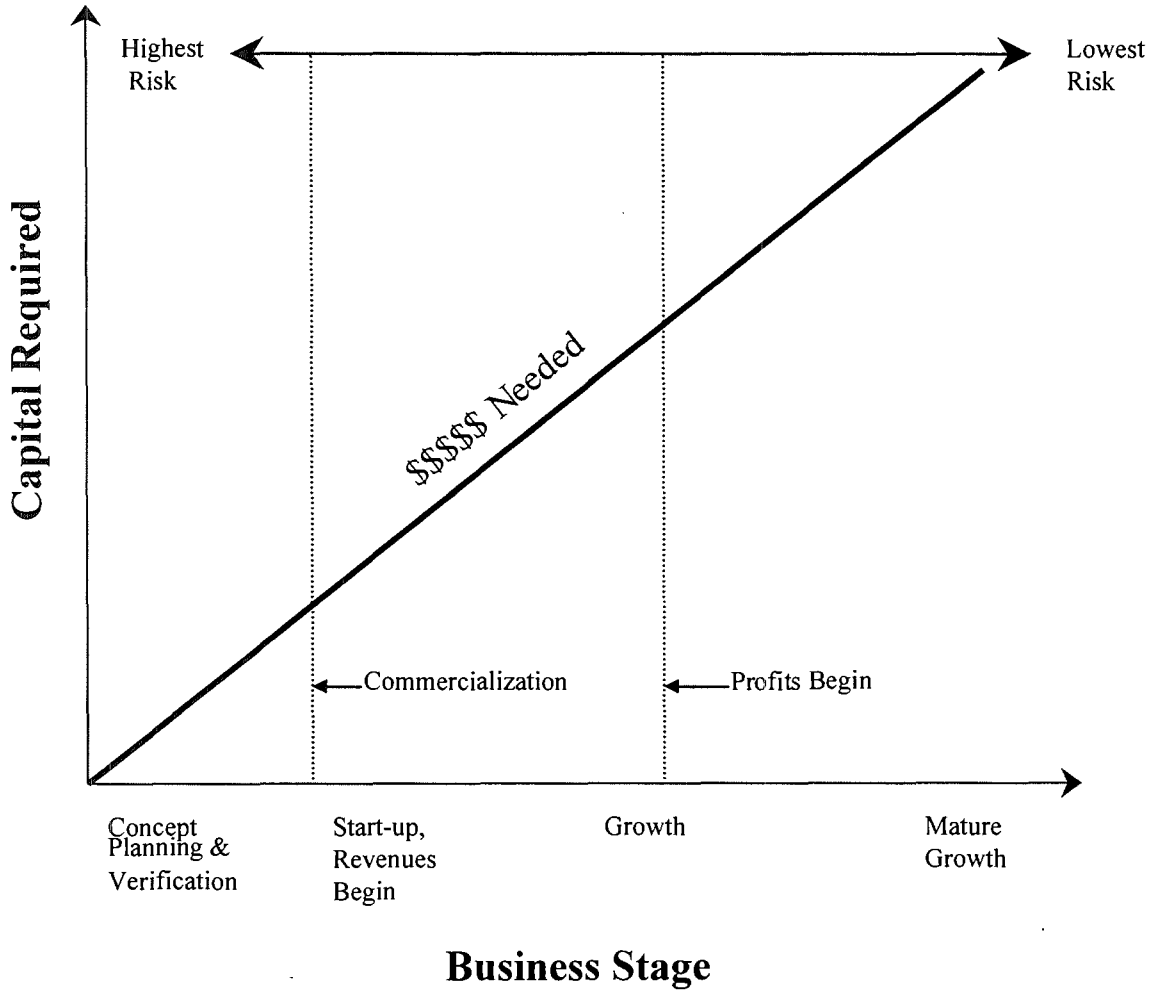
Following the Methods and Definitions Section is a discussion of two recent State-sponsored efforts to review capital availability and business development incentives in Maine and the outcomes of those two studies.

The report then reviews State-supported programs that make capital available to businesses and how well they support high-tech businesses. It then discusses what information is available about the activity of private sources of funds in Maine that target high-tech businesses and how private funding sources are changing.

Based on the analysis provided for the Risk Continuum and the review of public and private activity along that Continuum, the report concludes with recommendations for action by the State that will further support public and private sources of capital for high-tech companies in Maine.

Figure 1. The Risk Continuum:

Risk & Capital vs. Business Stage



II) METHODS AND DEFINITIONS

A) Working Definition of High-Technology Business:

The term "high-technology" or "high-tech" can be interpreted in many ways and does not specifically define a line of business. For example, some would include only computer hardware and telecommunications companies. Others would add biotechnology, software, precision machining and more to a list of high-tech companies. For the purposes of this report, it is appropriate to accept a broad working definition of a high-technology business. This broader view helps us capture the changing face of businesses in Maine that employ sophisticated new technologies. These businesses are diverse, but face very similar challenges when seeking capital. The fact that the challenges are similar among these businesses makes the need for a specific list of "high-technology" business categories unnecessary. **In this report, we define high-technology businesses as companies that base their business model on the application of sophisticated technologies or processes that are proprietary or patented and which provide a strategic advantage in the marketplace.**

This definition of high-technology business can be applied to the growing list of Maine industries that develop and employ sophisticated technologies, both as products and as delivery systems for other products and services. We explain how capital is used to fund these businesses at various stages in their life cycles. Then, we match the available sources of capital to the delivery systems.

Quantifying the demand for capital by high-technology businesses versus the amount of capital actually available is very difficult. The reasons for this difficulty include the confidential nature of most private investments and the lack of precise data from public programs that serve a broad clientele of businesses, including both high-tech companies and others. Therefore, we are not able to provide a "perfect picture" of supply and demand for capital by high-tech businesses; rather we report the broad investment trends exhibited by the various programs that serve these businesses.

This report focuses on capital used to support commercialization and sales of products. We did not explore the area of research and development (R&D) capital. R&D capital is vitally important, but is used to support pre-commercialization efforts that may or may not lead to product modifications or new product sales. The R&D area of capital investment is too far removed from the task assigned, which was to look at capital used for operating high-tech

businesses with commercial product lines. The life stages of companies and sources of capital are further described in Figure 1 (page 7) and Figure 2 (page 10). It should be noted that with the recent approval and funding of the Maine Technology Institute, $9,600,000 in critically important R&D funding will be provided by the State over the next two years.

B) An Explanation and Discussion of the Risk Continuum and Sources of Funding

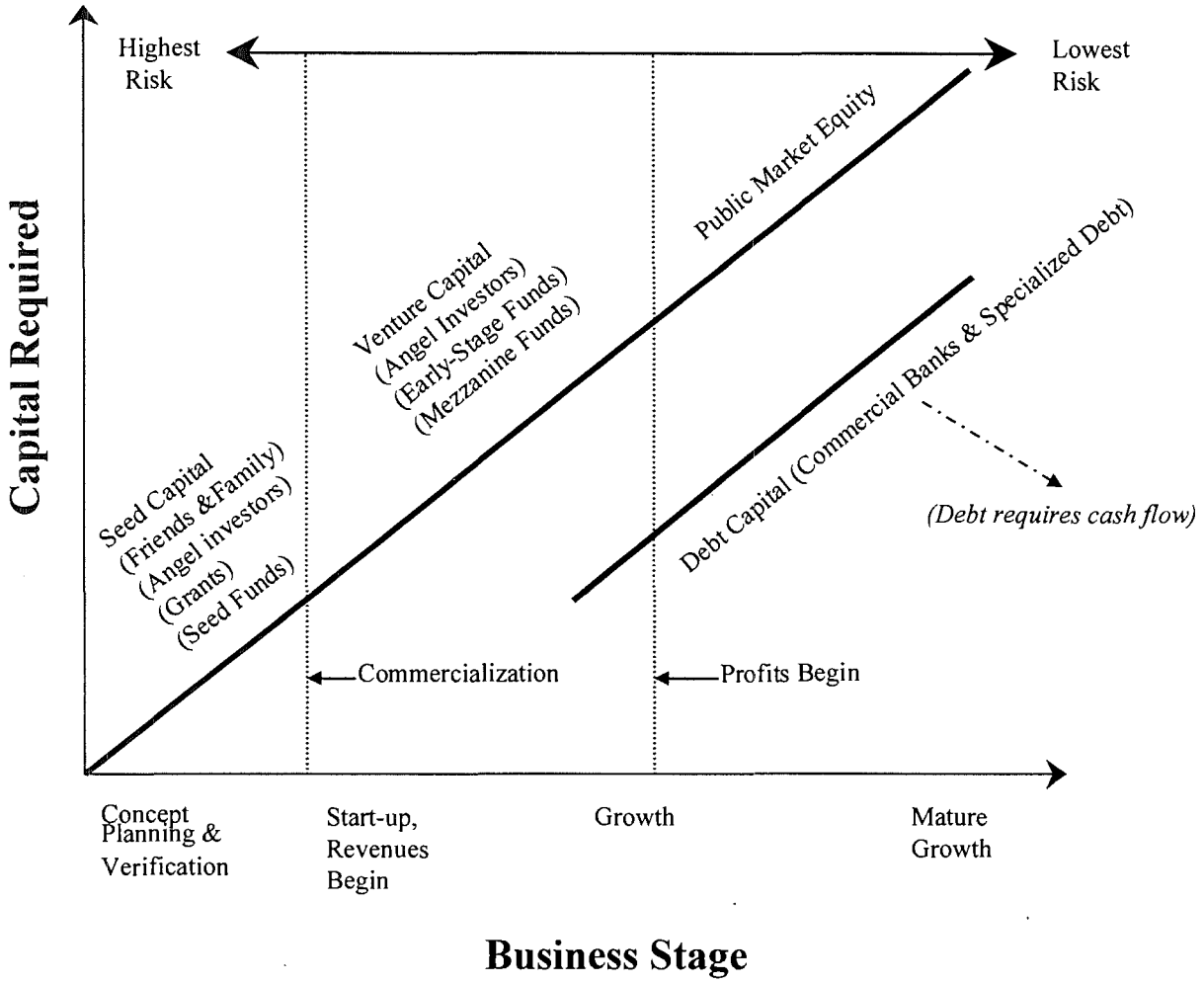
It is important to take the Risk Continuum model into account when considering the capital needs of any kind of business because an understanding of the Risk Continuum is the basis for pragmatic capital investment decisions. The basic concept for this model is shown in Figure 1. The model used in this report is not a new concept. It is based on generally accepted principals and practices used across the investment/lending industry. The Risk Continuum model used in this report is generic in nature and simplified for ease of explanation. Many variations on this theme appear elsewhere, but the core concept of risk, as it relates to the life stage of a company, is the same for all. As a result of risk, different types of capital sources have evolved to meet the capital needs of businesses at each point on the Risk Continuum.

For example, most people think of commercial banks when thinking about funding business needs. However, while it is true, commercial banks provide an important source of capital to relatively mature, low-risk businesses, they rarely invest in early-stage, high-risk businesses such as start-ups. Instead, high-risk companies are typically funded by private individuals and venture capitalists willing to invest "risk capital".

In a simplified format, Figure 1 illustrates the Risk Continuum and the capital needs of companies at each stage in a typical business life cycle. The life cycle, associated risks, and usual funding sources, are discussed below:

i) Concept Planning and Verification Stage. At the earliest stages, when the business plan is being developed and products are being researched and prototyped, the risk of failure is highest. Types of risks at this stage include: failure to develop a saleable product; lack of management depth; flawed market research; capital shortfalls before the next stage can be reached; and lost opportunity as competitors launch similar products. For example, it may prove impossible to create a commercially viable product from technology that worked well in a research lab because the cost of mass production is too high or the prototype fails to operate properly once placed in a harsh commercial environment.

Figure 2. Risk Continuum
Sources of Funds



Capital requirements are low at this stage and are funded by what is often called seed capital. Seed capital starts growth. For the small start-ups that most often occur in Maine, seed capital is usually provided by the founders, their family and sometimes their friends.

A critical issue to recognize at this point is that the company has little or no sales and therefore little or no cash income to pay back money it has borrowed. Money that is invested at this time must be "patient capital" that does not seek immediate returns. Friends and family sometimes gift money to entrepreneurs. Non-family seed investors (angels or venture capitalists) usually seek an investment agreement that provides long term returns through stock sales or royalties if the company eventually becomes successful. **Commercial, debt-based financing provided by banks is not a viable option at this point because cash is not available to make loan payments.**

ii) Start-up with Revenue Generation: Once a company has developed a product and identified a market, it can emerge on the scene as a start-up in its industry and begin generating sales through the commercialization of its product. Significant risk still exists at this stage as management must successfully control the cost of production, capture market share, survive competitive threats, fund rapid sales growth, and manage through other factors that can destroy a young company.

As it "commercializes" its product, the company enters a period where sales occur, but are not usually great enough to provide positive cash flow. In other words, the expenses to make the product and run the company, such as inventory purchases, assembly, rent, utilities, wages, marketing, and others, are still greater than the cash received from sales. During this period, the company incurs losses and needs additional cash to pay for ongoing operations. Depending on the volume of sales and the profit margin on its products, the company's losses can continue for months and sometimes years. In 1999, a well-publicized example of a company at this stage is Amazon.com, an internet company which achieved $1 billion in revenues in 1998, but has yet to make a profit.

During this start-up stage, capital is needed to cover the gap between sales revenue and expenses, as well as other needs such as new product rollout, expanded marketing efforts and product upgrades. Sources of capital at this stage are still considered risk capital and include private individuals, venture capital funds, and "specialized debt" sources.

Venture funds are legally organized entities, usually in the form of a limited partnership, that invest in companies of all sizes with the goal of achieving a significant return on the investment. Funds investing at this early-stage usually provide patient capital in return for some sort of stock ownership. Their goal is to increase the value of the stock and take advantage of the gain through the sale of that stock within 5 to 7 years. A venture fund in the form of a limited

partnership is managed by the general partner, which is made up of a group of professional venture investors. The general partner makes the investment decisions. Venture fund limited partnerships are capitalized by investors who become limited partners and put their money into a specific pool that is managed by the general partner. Typical limited partner investors include: wealthy individuals, corporations, pension funds and banks. The goal of nearly all venture funds is to diversify by investing in several different companies and maximize return to the partners on a "risk-adjusted" basis. The higher the risk, the greater the return that is sought. The risk adjustment must occur to allow an adequate return after netting out loses from companies that fail. Fund managers typically operate using a rule-of-thumb assumption that for every nine companies they invest in, three will fail, three will break even, and three will be very successful.

Another source of early-stage capital is specialized debt, sometimes referred to as "near equity", which can also come into play as a source of capital at the commercialization stage. Specialized debt sources of risk capital include various types of hybrid-investments that are debt-based, but exhibit some level of patience under repayment terms. For example, a public agency, such as FAME, may offer debt with deferred payments to allow the company time to generate positive cash flow prior to repaying the debt. The risk of failure and loss to FAME is high, but as a public entity, it may be willing to take that risk to support the potential public benefit if the company succeeds. Specialized debt can come into play at any dollar amount, but usually it only makes sense if the company is cash flow positive or approaching that state.

The source of capital depends on the amount needed and the projected time until cash flow becomes positive. If the amount needed is relatively small (less than $100,000), then the likely investors will be private individuals. This may include second round investments from the original seed investors, including money from the entrepreneur, their family or new investors. Private individuals that make arms-length investments in companies are often referred to as "business angels". These are usually individuals who have been successful in their own right and enjoy the challenge and potential returns from working with a young company.

If the amount needed is greater than $100,000, then the most likely source is still private individuals. This remains true until the need exceeds $500,000. At that point, some venture funds will start to consider investments if they see opportunities for further follow-on investments. In today's capital markets, it is unusual to see a private venture fund invest less than $500,000, and the typical floor is usually $1,000,000. Exceptions to this rule usually only include State-sponsored funds or "socially responsible" private funds described later in this report. In some cases, "boutique venture funds", formed by a group of angels, may consider pooling resources and targeting smaller investments in their local area in industries that the group are familiar with and willing to invest in.

These types of venture investor partnerships are usually very quiet about their activities, but do exist in Maine.

iii) The Growth Stage: If a company can develop adequate sales volume and profit margins, it enters a stage where cash flow becomes positive and eventually net profits begin to accrue. The risks at this stage are somewhat less than the earlier stages because the company has shown it can generate sales and may be profitable. However, management of rapid growth, competitive factors, and changing markets, still pose significant threats to survival.

If the company is profitable, then it is able to strengthen its balance sheet and income statement. It can then show real value on paper, rather than the projected values that earlier investors had to rely upon. The positive cash flow position allows the company to consider capital sources that include traditional forms of debt, because it now has the means to make loan payments. At the beginning of this stage, the company may seek further risk capital in the form of venture capital, specialized debt, or private angel investments.

As the company continues to grow and show profits, it may become eligible for low-risk capital like commercial bank debt. If the company is relatively large (greater than $10,000,000 in sales), it may also consider selling stock through an initial public offering ("IPO"). Or, it may become a target for a buyout by a larger company that wants to incorporate the product line of the smaller company. The IPO and buyout options give existing private investors and venture funds an opportunity to exit the relationship through the sale of their stock, hopefully at a significant gain.

iv) Mature Growth: At the mature growth stage, the company has stabilized with a defined market share, moderating annual rates of growth, and, hopefully, consistent profits. This is when most companies seek commercial bank financing or other forms of low-risk capital in the form of debt to fund operations. Commercial lenders will be interested in funding these kinds of companies because the investment risk can be quantified though analysis of the financial statements. The company has cash flow to service debt, and there is collateral available as a secondary source of repayment to the bank. Venture capitalists will have less interest in stock purchases from a company at this stage because expected returns are relatively modest.

Figure 1 (page 7) summarizes the relationship of the business life cycle to risk. This relationship determines the most likely sources of capital for a company. As a general rule, the business concept stage and the start-up stage cannot afford debt. They are funded by risk capital that comes from friends, family, or private investors ("angels") who purchase stock or the rights to stock and seek an adequate risk-adjusted return. Once a business achieves sales and positive cash

flow, it becomes a candidate for risk capital from larger venture capital investments or specialized debt instruments. When a business becomes profitable, it is a candidate for low-risk commercial debt financing.

To further describe the function of banks and high-risk investors on the Risk Continuum, we provide the following "question and answer" explanation for why commercial lenders target certain companies. It describes how the mathematics behind typical commercial lending models do not allow investments in high-risk companies.

Q. Why can't banks afford to lend to high-risk businesses and why can angels and venture capitalists make investments in high-risk businesses?

A. An industry rule of thumb is that banks earn 4% on the money they loan to businesses. This is roughly the difference between the money they pay depositors and the amount they receive on loan repayments when they lend depositor's money. This amount may vary at times and many lenders also earn income from up-front closing fees. To be conservative in this illustration, we adjust the estimated earnings per loan up to 7%.

Assuming a bank earns 7% per year on every business loan it makes, the failure rate on loans cannot exceed 1 out of every 14 loans per year before the lender loses all of the income from its commercial loan portfolio (100% divided by 7% equals 14.3). If you factor in the bank's overhead costs, the failure rate must be even lower.

Venture capitalists invest in companies that are in the highest-risk section of the Risk Continuum. These companies are just getting started and usually have not yet generated a profit. A rule of thumb for this industry group is that one-third of the companies will fail, one-third will survive, but not grow significantly, and one third will be very successful. Obviously, this failure rate is too high for a bank to remain profitable. The venture capitalist, or business angel, offsets the high loss rate by making investments as direct stock purchases or some type of structure that allows for future stock purchases or royalties from the company. This stock purchase has no value if the company fails, but it has significant value when, and if, a company is successful. The venture capitalist is able to offset losses from the failed companies by the large increase in the value of its investment in a few successful companies.

For banks to make the same rate of return as venture capitalists and to offset expected failures of companies in the pre-profit section of the Risk Continuum, they would need to charge interest rates on debt of 33% or more on average. A rate that few companies could afford to pay from regular earnings.

C) Recent Efforts to Review Capital Availability in Maine

In 1995, the Finance Authority of Maine (FAME) published "A Study of the Availability and Sources of Venture Capital in Maine" (the "venture capital report"). The venture capital report went beyond identifying sources of venture capital in Maine to defining all common types of capital available and when it is appropriate to use them to fund business growth.

In 1997, the Department of Economic and Community Development (DECD) and FAME published a report entitled "Business Development Incentives in Maine" (the "business incentives report"). The business incentives report inventoried and assessed performance of financial incentive programs sponsored by the State of Maine and provides a good source list for State-sponsored programs that can be used to address the capital needs of high-technology businesses. Both reports provide foundation material for this report. A bibliography is provided herein with full titles and sources of these reports. Their specific findings are discussed further in this report.

D) Capital Allocation to High-Technology Businesses by State-Sponsored Programs

Programs in Maine, which are partially or wholly supported by the State and provide direct capital to commercial businesses for support of operations, were reviewed and compared to determine their relative contribution to funding of high-tech companies.

As a way of organizing State-sponsored programs along the Risk Continuum, they are sorted by risk category ranging from high, to moderate, to low. The high-risk programs tend to be equity or hybrid-debt with equity rights, the moderate-risk programs fall in the specialized debt group of debt programs that are designed to take higher-risk than traditional loan programs, the low-risk programs fall into a traditional debt category.

Table 1 (page 21) and Figure 3 (page 22) list these programs by risk category. Table 1 summarizes program activity over the last three and one-half years and shows capital allocation by program for high-technology companies. Figure 3 attempts to line up the programs with the life-stages for which they are most likely to be used.

Appendix A (page 34) contains detailed program descriptions for each program reviewed. Most of these were excerpted from the 1997 Report on Business Development Incentives. The findings of this survey are discussed in Section IV) A Review of State-Sponsored Programs Funding High-Technology Businesses.

Grant programs for research and development like the recently created Maine Technology Institute, and most tax credit programs were not included in the review. As noted earlier, research and development (R&D) is an important part of any technology business, but usually occurs prior to product definition and commercialization of new products or prior to product upgrades. R&D grants often occur outside of the operating business in places like universities, research hospitals, government research laboratories or private laboratories. Most State-sponsored tax credit programs, other than the Seed Capital Tax Credit Program, which is included here, do not provide additional capital to a company, rather they encourage investment of internal funds in targeted areas by subsidizing the cost of that investment.

III) Findings and Subsequent Outcomes from the 1995 Venture Capital Report

In 1994, the 116th Maine State Legislature directed FAME to prepare a study of the availability and sources of venture capital in Maine. The Legislature requested FAME to consider existing sources of venture capital available in Maine and review venture capital programs in other states. The Authority was then asked to make recommendations for increasing in-state access to venture capital based on its findings. The report was published in 1995 (the "1995 study").

To conduct the study, FAME reviewed information on activity inside and outside of Maine. It determined what was happening in Maine and looked at models from other states to see what did or did not work when tried elsewhere.

The study concluded that whether or not companies have the attributes sought by venture investors, they are usually funded in the very early stages by self-financing, friends, family and angel investors. Venture capital from institutional sources and business angels, is ultimately a likely resource for companies that have certain attributes including: high growth potential, a proprietary market niche, and the ability to provide an exit strategy for the investor (a typical scenario for many successful high-tech companies). Companies that lack the attributes sought by venture capitalists, are usually funded by self-financing, friends, and family until they become profitable. As they mature, all types of companies become candidates for specialized debt and eventually bank debt becomes a likely source of funding.

As their capital needs increase, and as they move from the concept to the start-up and growth stages, these companies can be considered for investment by institutional venture capitalists. The 1995 study found a lack of institutional venture capital available for companies seeking less than $1,000,000 in Maine. This situation was similar to virtually all other states, except in states where some form of public-sponsorship was used to help fill that gap. If you assume that high-technology businesses are logical candidates for venture financing, the 1995 study pointed to the need to support sources of patient risk-capital for high-tech companies in the $100,000 to $1,000,000 range with amounts between $100,000 and $500,000 being most needed.

At the time the report was produced, two venture funds were being raised in Maine that had the potential to provide significant venture capital to Maine businesses. North Atlantic Capital Corporation, an experienced institutional venture firm located in Portland, Maine, planned to target growth stage businesses with investments of $500,000 to $10,000,000 using equity and debt instruments. North Atlantic launched a $60,000,000 fund in 1996.

At the same time, CEI Ventures, Inc., a for-profit subsidiary of Coastal Enterprises, Inc., was raising a $5,000,000 fund to make "socially responsible" investments of $50,000 to $500,000 in the form of equity or debt. The return on investment target for CEI Ventures would be tempered by the social benefits anticipated from its investments such as quality job creation and socially beneficial products. However, it is important to note that CEI Ventures still sought a

return on investment ("ROI") that exceeded comparable investments in publicly traded stocks. CEI Ventures launched its fund in 1996.

The 1995 study also looked at business angel activity in Maine. Although this investment activity is very hard to quantify because most investments are not made public, it was determined that it was an important component of early stage capitalization in Maine and should be encouraged through networking, public forums and other avenues that allow companies to meet with potential investors without violating the privacy of those investors.

After reviewing activity in Maine and elsewhere, FAME made the following recommendations in the 1995 study:

1) Enhance and expand the Maine Seed Capital Tax Credit Program. This program provides a 30% tax credit to individuals (business angels) investing in manufacturers or companies that bring capital into Maine from out-of-state sales.

2) If direct appropriations are made available for venture capital investments, the money should be invested in one or more privately managed funds with agreement to have fund managers reinvest in Maine companies.

3) Support private efforts for establishing business angel networks.

4) Encourage a seed-stage venture fund to locate in Maine as a means of attracting new companies to the State.

5) Support near equity programs that assist "non-venture capital" target companies.

6) Continue to vigorously cultivate a "business friendly" reputation.

7) Sponsor venture capital forums to allow entrepreneurs to present their ideas to large audiences in Maine.

Since the report was published, several recommendations have been followed and other outcomes have occurred to enhance the availability of high-risk capital in Maine:

1) The Maine Seed Capital Tax Credit Program was expanded to increase eligible investment size per investor from $100,000 to $200,000; a structure was devised to allow credits for investors in qualified, early-stage venture funds; the cap on the program was increased from $2,000,000 to $7,000,000 in total tax credits.

2) A voter approved bond issue for $5,000,000 was used to fund the Small Enterprise Growth Fund. This is a State-sponsored fund designed to act like a seed/early-stage venture fund. It is overseen by a board of experienced investors and entrepreneurs appointed by the Governor. It targets matching investments of up to $500,000 in companies that are at the commercialization stage. The fund makes its investments as patient capital using convertible preferred stock or hybrid-debt structures with warrants for stock.

3) The Maine Investment Exchange ("MIX") began operating in 1997. This is a forum that allows entrepreneurs to present their business plan to potential investors, usually business angels. The forums are held three to four times a year and feature Maine businesses or companies willing to relocate to Maine. The effort is sponsored by public and private sources.

4) Zero-Stage Capital Corporation, Inc. a Massachusetts-based venture firm with significant experience in investing in seed-stage companies, raised $5,000,000 in Maine in 1998 as part of a $75,000,000 fund and has opened a branch office in Portland, Maine. It will be looking for opportunities to invest $500,000 to $2,000,000 in technology companies.

5) The State continues to sponsor and support specialized debt programs as discussed further in this report.

6) The cultivation of a business-friendly reputation is an ongoing effort.

7) The Finance Authority of Maine has coordinated four annual venture capital forums since 1995. These have focussed on capital sources and availability, protection of intellectual capital, business plan development, seed investing techniques for angels and other areas of importance to new businesses.

IV) A Review of State-Sponsored Programs Funding High-Technology Businesses

When preparing Table 1 (page 21), the total investment activity by program was reviewed to determine the proportion of capital invested by these programs in high-tech businesses. Both the number of investments and the dollar amount invested in high-technology companies are shown as a percentage of the total number of investments and the total dollars invested for each program over a three and one-half year period running from 7/1/96 to 12/15/99. These data show the broad trends in these programs for the period studied. The relative percentages for any given year vary to some degree from the average. Figure 3 (page 22) shows how the State-sponsored programs fit on the Risk Continuum.

It is clear from Table 1 that programs in the "high-risk" category are the ones that tend to target most of their resources at high-tech companies. On average the number of investments in high-technology companies was 83.0% for the high-risk group versus 6.1% and 16.7% for the moderate-risk and low-risk groups. When we looked at the percentage of dollars invested in high-technology companies by program we found similar trends. The high-risk group invested 74.3% of its funds in high-technology businesses versus 9.1% and 10.8% for the moderate-risk and low-risk groups.

Note, that as suggested in the Risk Continuum model shown in Figures 1 (page 7), we can use the data in Table 1 to show that the average dollar amount of the investment increased as capital was invested in later stage, lower-risk companies. The average investment size for the high-risk group was $29,482 ($6,604,000/224 investments). This increased to $203,975 and $5,266,667, respectively, for the moderate-risk and low-risk groups. Therefore, while the high-risk group allocated the highest percentage of its resources to high-technology companies, the moderate-risk and low-risk groups actually invested significantly more money during the same period to meet the greater capital needs of later stage companies.

The high percentage of investment in high-technology businesses from the high-risk group is not surprising for two reasons. The first is that two of these programs, the Small Enterprise Growth Fund and the Technology Investment Fund have guidelines that target investments to high-tech companies. The second reason is that investors will gravitate to high-technology companies at this risk level to attain an adequate risk-adjusted return. This can be seen by the fact that 81.8% of the number of Seed Capital Tax Credit investments made by private angels are targeted at high-technology businesses. A high-technology business as defined in this report should provide the investor with a perceived business opportunity that will provide strong returns if it is successful.

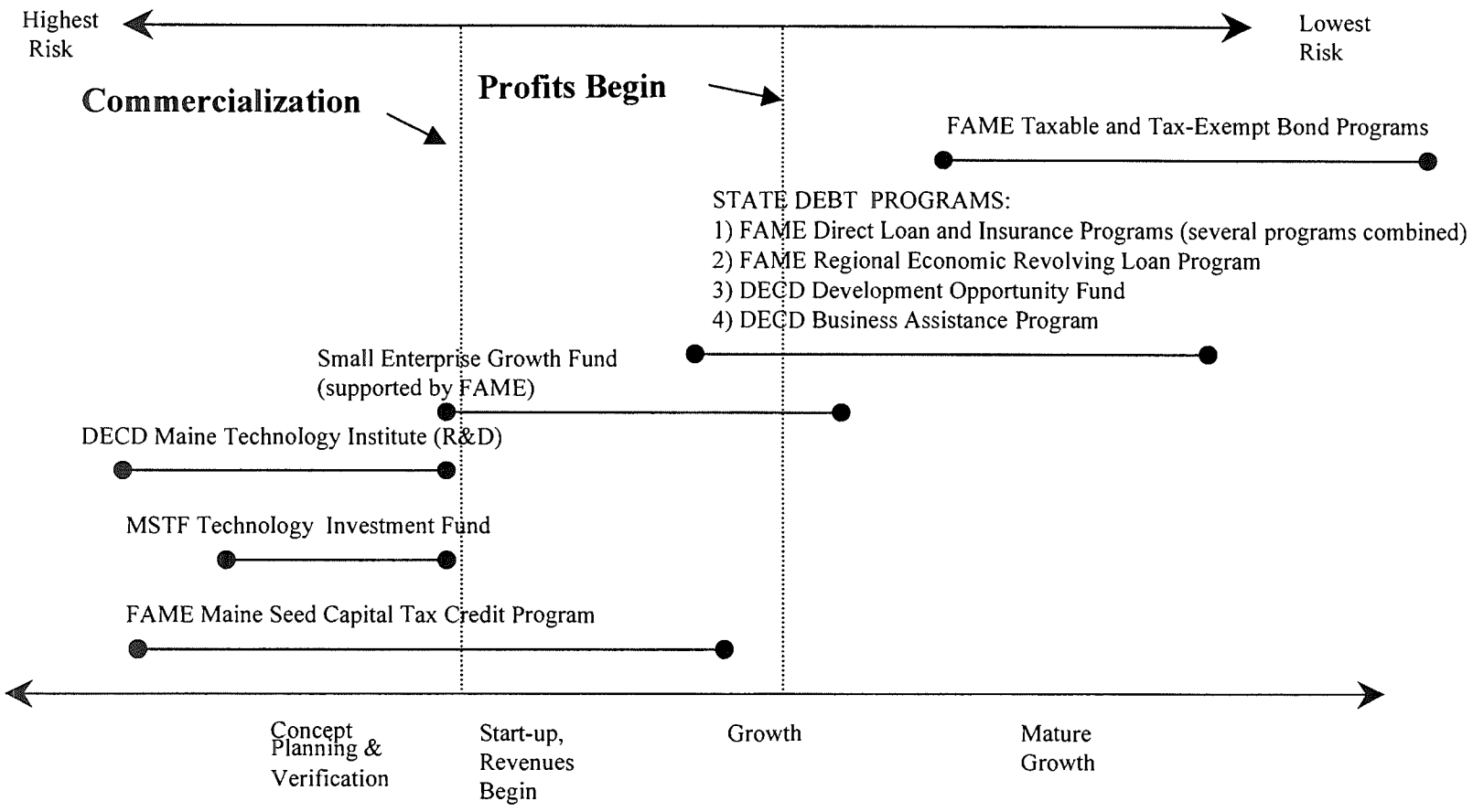
Unlike the reasons given for the high-risk group, the much lower allocation of moderate-risk resources (6.1% of investments and 9.1% of dollars) to high-technology companies is more likely driven by the relative number of high-technology businesses in our economy compared to all other business types seeking funds from these programs. This assumption is based on the fact that this group of programs does not have specific directives to support high-technology businesses and is not as driven by return on investment goals. Rather, these programs are

Table 1. Summary of State-Sponsored Program Activity in Maine from 7/01/96 - 12/15/99

Program	Total Number of Investments	Total Number of High-Technology Investments	Percentage Investments in High-Technology Companies	Total Program Dollars Invested ($000s)	Dollars Invested in High Technology Companies ($000s)	Percentage of Program Dollars Invested in High Technology Companies
HIGH-RISK CAPITAL: EQUITY PROGRAMS OR DEFERRED DEBT WITH RIGHTS TO EQUITY						
Maine Seed Capital Tax Credit Program	209	171	81.8%	$ 4,714	$3,018	85.5%
Small Enterprise Growth Fund	10	10	100.0%	$ 1,550	$1,550	100.0%
Technology Investment Fund (as of 6/30/99)	5	5	100.0%	$ 340	$ 340	100.0%
Sub-Total for Risk Category	**224**	**186**	**83.0% (wtd. mean)**	**$ 6,604**	**$4,908**	**74.3% (weighted mean)**
MODERATE-RISK CAPITAL: SPECIALIZED DEBT PROGRAMS						
Economic Recovery Loan Program	55	5	9.1%	$ 4,647	$ 646	13.9%
Regional Economic Revolving Loan Program	200	12	6.0%	$ 8,720	$ 1,206	13.8%
Development Fund	19	3	15.8%	$ 2,290	$ 350	15.3%
Business Assistance Program	20	3	15.0%	$ 5,984	$ 579	9.7%
FAME Commercial Loan Insurance	53	11	20.8%	$ 62,062	$ 10,813	17.4%
FAME Small Business Loan Insurance	492	17	3.5%	$ 90,275	$ 2,196	2.4%
Occupational Safety Loan Fund	10	0	0.0%	$ 0	$ 0	0.0%
Waste Reduction and Recycling Program	6	1	16.6%	$ 421	$ 100	23.8%
Sub-Total for Risk Category	**855**	**52**	**6.1% (wtd. mean)**	**$174,399**	**$ 15,890**	**9.1% (weighted mean)**
LOW-RISK CAPITAL: TRADITONAL DEBT PROGRAMS						
Municipal Securities Approval Program	14	3	21.4%	$ 57,435	$ 8,965	15.6%
Revenue Obligation Securities Program	4	0	0	$ 37,365	$ 0	0.0%
Sub-Total for Risk Category	**18**	**3**	**16.7% (wtd. mean)**	**$ 94,800**	**$ 8,965**	**9.5%**
Total for All Categories and Programs	**1,097**	**241**	**22.0% (wtd. mean)**	**$275,803**	**$ 29,763**	**10.8% (weighted mean)**

Figure 3: State-Sponsored Programs

Where they fit on the Risk Continuum



directed to help the general population of businesses in Maine based on business viability and public benefit.

As with the moderate-risk group, the fact that the low-risk group invested only 16.7% of its investments and 9.5% of its funds in high-technology companies, during this period, is probably due more to random chance than any disinclination to fund high-technology companies. Because of its lower-risk profile on the Risk Continuum, a mature high-technology company is eligible to seek funds from this group, but will also have many other opportunities for capital from private sources.

The review of Table 1 indicates that the high-risk group of programs is more likely to support high-technology companies than the two lower-risk categories. However, there are no prohibitions against supporting high-technology companies in the lower-risk categories.

V) A Review of Private Sources of Funds for High-Technology Businesses

As shown in Figure 2 (page 10) (Risk Continuum), private sources of capital for high-technology businesses come into play at all risk levels. Private investors can include the founder, friends and family, business angels (private, third party investors), venture capital funds, banks, strategic business partners, public equity markets, and other sources. The likely investor and amount of money depend on the type of business and what stage of development it is in. Since the Risk Continuum and investment types have been discussed above, this section will be limited to specific sources in Maine. These are overlaid on the Risk Continuum in Figure 4.

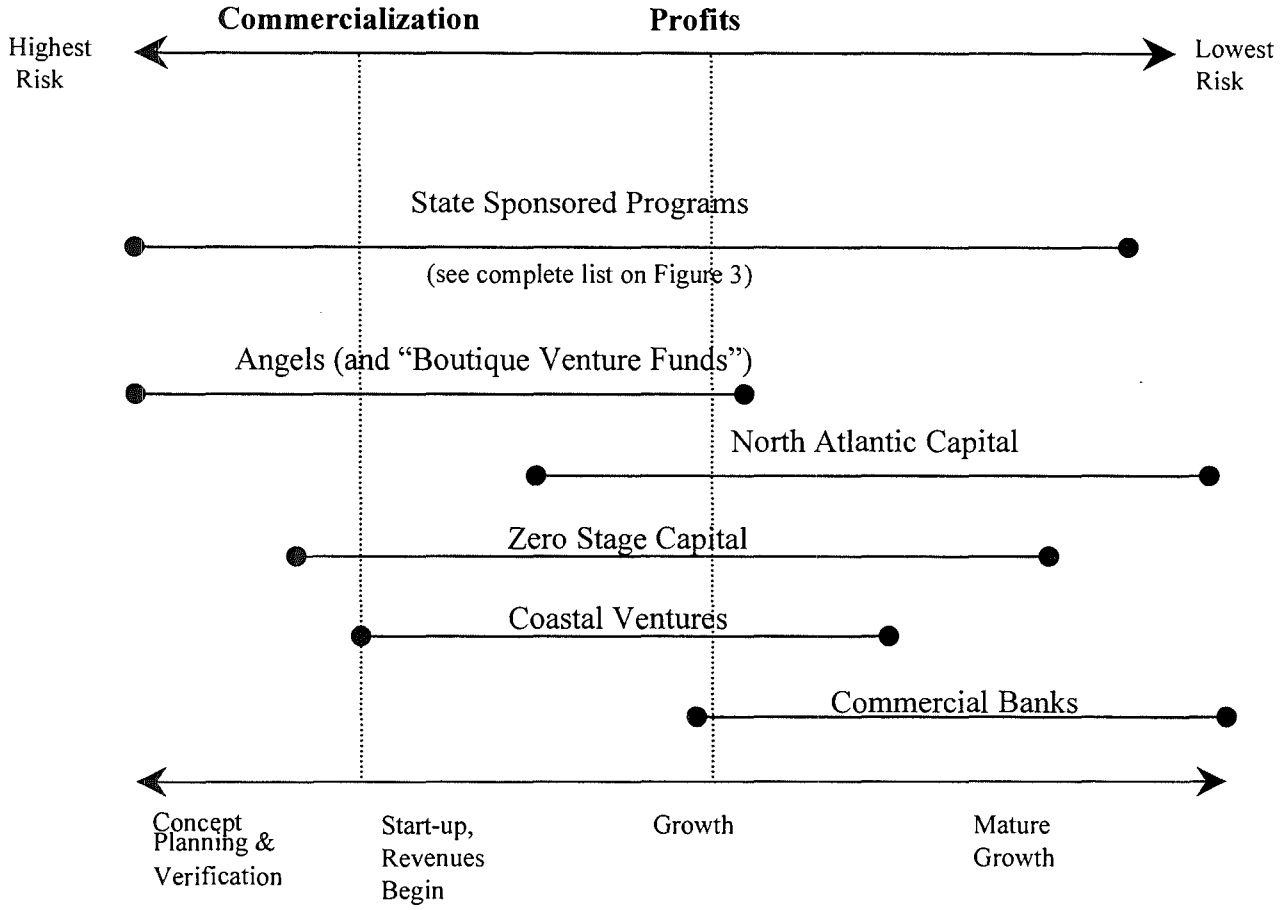
A) High-Risk Capital

Angels: The Maine Investment Exchange ("MIX") began operating in 1997. It is an excellent example of public and private partnering. It is hosted by the Maine Chamber and Business Alliance with sponsorship from several public and private business groups including Maine & Company, New England Realty Resources, Inc., Zero Stage Capital, FAME, CEI Ventures, Burns & Delano, Time Warner Cable, Peabody & Arnold, LLP, MEDEX Management Corporation, and WCBACHFM106.3. As noted in Section II, MIX is a forum that allows entrepreneurs to present their business plan to potential investors, usually business angels. The forums are held three to four times a year and feature Maine businesses or companies willing to relocate to Maine. As of December 1999, 47 presenters had used the MIX forum. Over 50% of these presenters are considered high-technology businesses, as defined in this report. Based on follow-up inquires, the MIX Advisory Board estimates that nearly 20% of the presenters have successfully raised funds as a result of the forum. This is considered a good investment rate for this type of forum.

Other angel activity occurs in Maine, however, quantifying that activity is virtually impossible due to the private nature of the investments. If one uses the activity in the Seed Capital Tax Credit Program as a proxy, the indication is that angel activity in Maine is increasing. In fiscal year 1999, this program achieved a new high number for both investors and dollars invested at 60 and $1,299,000, respectively.

This important source of seed and early-stage capital should be supported through the continued efforts of groups like MIX and through other means that engage the angel population, but at the same time do not alienate angels by violating their privacy.

Figure 4. State and Private Sources
Where they fit on the Risk Continuum



Seed and Early-Stage Venture Funds: As noted in Section III and shown in Figures 4, CEI Ventures, Inc. and Zero Stage Capital are two private, for-profit, institutional, venture funds that will invest in start-up and growth companies in Maine.

CEI Ventures is a self-described "socially responsible" venture capital fund seeking social as well as financial return by targeting small closely held companies with excellent growth potential. This growth potential will support profits and investor return, but also create jobs in low-wage areas, improve environmental conditions, or have other attributes that improve the social fabric of the community in which the business operates. CEI Ventures seeks risk-adjusted returns that exceed the average for publicly traded stocks. The fund has approximately $5,000,000 to invest. As of December 30, 1999, it had invested $2,300,000 in a total of 12 Maine companies. Of these 6, or 50%, were classified as high-tech using the definition in this report. The per company investment range is targeted between $50,000 and $500,000. Most investments are made as equity using a preferred stock structure.

Zero Stage Capital Company, Inc. is a general partner in several institutional venture funds. Senior management is headquartered in Cambridge Massachusetts, but the group has recently entered Maine as a serious investor. In 1998, it launched its $75,000,000 Zero Stage Capital VI Fund to invest throughout New England. As part of this effort, it raised $5,000,000 from private sources in Maine, which it then leveraged to $15,000,000 using funds from the Small Business Investment Corporation ("SBIC") Program sponsored by the U.S. Small Business Administration. Zero Stage has told its Maine investors that it will make best efforts to reinvest the $15,000,000 back into promising Maine companies. It made a similar best efforts promise to the New Hampshire Business Development Corporation in 1994, based on a $4,000,000 investment by that group, which was leveraged to $12,000,000. So far Zero Stage has invested $18,000,000 back into New Hampshire companies. It is hoped they will be as successful in finding good businesses in Maine that offer adequate risk-adjusted returns. Zero Stage now has an office in Portland, Maine, staffed by an Investment Officer who reviews opportunities throughout the State. It is currently focussing on opportunities to invest in internet companies, but does not exclude other types of technology companies if expectations for adequate return on investment are exhibited. To date, no investments have been made in Maine. It will invest from $250,000 to more than $1,000,000 in promising businesses.

There are a few other privately held venture investment firms (sometimes referred to as "boutique firms") in Maine that are run by a single individual or as a partnership. These are funded privately and often join with other angels or fund investors to put together "deals". As with business angels, tracking actual amounts invested is not possible. However, like the angels, it is safe to say that they are important behind the scene players that support seed and growth companies in Maine.

B) Moderate-Risk Capital

In the area of moderate-risk capital, one primary source stands out in Maine. As mentioned in Section III, North Atlantic Capital Corporation, an experienced institutional venture firm located in Portland, Maine, launched a $60,000,000 fund in 1996, targeted at companies falling in the "growth-stage" on the Risk Continuum. It makes what are often referred to as "mezzanine investments". The fund will make investments ranging from $500,000 to $3,000,000 using equity or debt instruments. It will co-invest with others on projects as large as $10,000,000. It prefers companies with positive cash flow that enables some level of debt service. At the same time, these companies must be poised for significant growth and provide a risk-adjusted return. North Atlantic will often step in with companies that are beyond the start-up stage and have some level of cash-flow, but are not attractive to banks because their track record is too short or some other aspect makes the risk too high to fit a bank profile. Investments are made throughout New England, but having the headquarters in Maine has benefited the State. Using the current fund and prior funds, North Atlantic has invested in several Maine businesses including: Schiavi Leasing Corporation in Oxford, Brunswick Technologies, Inc. in Brunswick, The Hinckley Company in Southwest Harbor, IDEXX Laboratories, Inc. in Westbrook, and Diamond Phoenix Corporation in Lewiston.

Other private investment firms operating in Maine can be included in the moderate-risk category. These companies may specialize in what is known as factoring or asset-based lending, where they use specific assets of the business as collateral and only advance funds against a known amount of eligible assets. These companies may monitor asset positions on a daily basis and make changes in funds accordingly. They reduce risk by taking these specific positions and watching them closely. They are most often used to provide short-term working capital, or lines of credit for companies that do not exhibit the stable trends sought by commercial banks.

Commercial banks, including savings banks, savings and loans, trust companies, and other traditional community business lenders, will enter the moderate-risk area of the Risk Continuum when supported by loan insurance such as FAME's Small Business Loan Insurance Program or the U.S. Small Business Administration's Loan Insurance Programs. However, as shown in Figure 2 (page 10) and Figure 3 (page 22), the participation is at the lower-risk end of this portion of the Continuum and usually only with companies that exhibit positive cash flow and adequate assets to provide a secondary source of repayment via liquidation if necessary.

C) Low-Risk Capital

Private sources of low-risk capital are the most commonly recognized sources of business capital in Maine and elsewhere in the United States. These are banks, credit unions, mortgage companies and others, all referred to here as "banks". They advertise heavily and compete vigorously for the accounts of large and small businesses in Maine. Maine has both local lenders and national companies serving its market.

VI) CONCLUSIONS AND RECOMMENDATIONS

Per its legislative directive, the Finance Authority of Maine was asked do the following:

1) Analyze the availability of capital for business start-up and development, and to determine if sufficient capital is available for all levels of high-technology business needs and identify what barriers may exist to accessing capital.

2) Develop strategies for increasing capital, if necessary, and for assisting fledgling businesses in locating and obtaining capital and for removing barriers to access.

Conclusions on Availability of Capital and Barriers to Entry:

The private nature of many investments precludes a complete analysis of all available capital for high-tech businesses. Because of this, it is difficult to say whether the availability of capital for business start-up and development of high-tech companies in Maine is adequate at all levels. However, because of the number of private companies competing in the low-risk end of the Continuum, it is safe to say that viable high-technology companies can access adequate funds once they are mature and showing profitable performance. This cannot be said for early-stage companies at the high-risk end of the Continuum. The companies have fewer sources of funds and are considered to be much higher-risk investments.

The need for capital for start-up and early-stage companies is a function of the number of these companies at any given time and the sources of capital to fund these companies. If we use the application rate for the Small Enterprise Growth Fund ("the SEGF") as a proxy for demand, we make an argument that demand over the last two years has exceeded capital supply in Maine. The SEGF has had 77 applications since it began accepting them in mid-1997 and has invested or committed to invest $2,200,000 in 11 companies. All of the companies invested in are high-technology companies. Many of the companies denied for investment were also high-technology companies. As of December 15, 1999, the Fund was reviewing new applications with requests for a total of $1,050,000. If the latest applications are approved, this will leave approximately $1,750,000 available for further investments. At the current average approval rate of 3 to 4 companies a year, the Small Enterprise Growth Board now expects to run out of funds in late 2000 or the first half of 2001.

As shown in Table 1 (page 21), the SEGF is one of the few State-sponsored programs that can easily target start-up high-technology companies, because it is designed to operate in the high-risk area of the Risk Continuum. Assuming, demand for investments by high-technology companies continues at its current rate, there will be a shortfall in availability over the next year from the Small Enterprise Growth Fund.

The presence of private venture funds for start-up, high-technology companies is good for Maine businesses. But, as of this writing, Zero Stage Capital has not yet made any investments in Maine. It has been actively looking at companies, but has chosen to invest elsewhere thus far. CEI Ventures has invested in Maine companies, but is also looking outside

of Maine to diversify risk and increase its selection of investment choices. The Maine Investment Exchange (MIX) has had 47 companies present at its forums over the last two years. It estimates that about 20% have received some funding as a result. Based on the application rate for SEGF and the investment behavior of other funds in the State, it can be concluded that more capital for high-tech start-ups will be needed in Maine as current funds are depleted prior to the existing funds recouping returns on their investments. This is because it typically takes five to seven years for these types of investments to return income, if they are successful. The State should also expect an increase in demand for funds as new companies try to locate in Maine, and the seeds planted by the Maine Technology Institute and other R&D efforts create demand for commercialization dollars.

It was noted above that 85% of the applications made to the Small Enterprise Growth Fund were denied. This denial rate is lower than typically seen for private-sector funds because of the public mission of the SEGF. Private funds typically report denial rates of higher than 99%. The SEGF tempers its return on investment expectations with the offsetting public benefit offered by high growth companies. At the same time, the Fund must consider the viability of the business plan and the strength of the management team to assess the likelihood of success. The investment rate by the various sources of early-stage funds and the Risk Continuum Model help to define capital access barriers for high-technology companies in several ways:

1) Capital investments must be structured properly to allow for successful investments in early-stage companies. Simple debt structures used by most State programs and traditional commercial lenders are not usually appropriate for early-stage companies that have little or no positive cash flow. These companies require "patient capital" in the form of equity investments or hybrid debt (deferred debt with "equity kickers") for the purchase of stock or royalty rights.

2) Management teams of the start-up companies must show a viable business plan to potential investors. Experience with the Small Enterprise Growth Fund and MIX, as well as discussions with multiple private fund managers, lead to this conclusion. Virtually all fund managers will tell you that because there is no company history, faith in the management of the new company and its business plan is the primary reason for approving an investment. Start-up companies must do thorough research, understand their markets, show proven technological advantages, have patent protection or proprietary rights, and present their ideas well in order to be considered for an investment. The 85% denial rate seen for the Small Enterprise Growth Fund is evidence of this, even though the SEGF tempers its return on investment demands in favor of public benefit. Training for start-up management teams and mentoring programs would help overcome some barriers and improve the investment rate in Maine companies from both public and private sources.

The data reviewed on public programs and information available from private sources indicate that adequate capital does exist for later stage, lower-risk companies that are in positive cash flow and profit positions. These are the profitable companies in the Growth Stage on the Risk Continuum Model. They have access to traditional forms of commercial bank debt and mezzanine-stage venture funds. However, an analysis of State-sponsored programs shows that

relatively few of the investment dollars (10% or less on average) from moderate-risk and low-risk debt programs target high-tech companies. This is likely a function of the relative number of these companies in Maine's economy when compared to all of the other types of companies in the economy, and the availability of private alternative sources of funds for mature high-technology companies.

Strategies for Increasing Capital for Fledgling High-Technology Businesses and for Removing Barriers to Access:

It is fair to say that the ultimate public policy goal should be to increase funds available for high-technology companies at the stages when sources of funding for viable ideas may be insufficient. In Maine, as in most places in the country, risk capital for start-up and early-stage companies is difficult to attain. Debt financing via commercial banks and economic development groups is more readily available and makes more sense for companies with established cash flow and an asset-base that can be used for collateral. Funds for early-stage companies can be made available through both the public and private sectors. In all cases, the structure of the funding must match the needs of the company and allow for a risk-adjusted return to the investor. Public sector sources can accept a lower return on investment than private sources assuming they receive an indirect return in the form of public benefit. However, if public sector sources are to be self-funding and provide ongoing benefits, they too must demand a monetary return that recognizes the high probability of failure among portfolio companies and, at a minimum, offsets that risk. Based on the findings of this report, the following recommendations are provided as a strategy to assure adequate sources of funding for high-technology companies and to minimize barriers to access of capital:

- Increase availability of funds for State-sponsored programs that address risk capital needs, including increased funding for the Small Enterprise Growth Fund. Raise the funds available through this program from $5,000,000 to $10,000,000.

- Assure availability of continued "angel" funding via the Seed Capital Tax Credit Program. This program will become more attractive to investors if the tax credit is increased from 30% of the investment amount to 40% or even 50%. Additional private funding could be leveraged through this program if it becomes more user friendly for institutional venture capital funds. The current participation cap for institutional venture funds is $1,000,000 in eligible investments, which translates to only $300,000 in tax credits per fund. This is a low amount on a per fund basis. If each fund could qualify for $5,000,000 in eligible investments, the per fund tax credit cap would increase to $1,500,000 which is more meaningful to an investor pool. If the above changes are approved by the Legislature, they would warrant an increase in the overall tax credit cap for the program from its current level of $7,000,000 to $10,000,000 to allow for the increased activity that can be expected from these changes.

- More creativity in management of high-risk, specialized debt programs could be used to create more availability of "hybrid programs". This would slide these programs further towards the high-risk end of the Risk Continuum. These changes in investment structuring would allow for longer debt payment deferral periods, but

also add equity kickers like warrants for stock options or future royalty payments to offset the higher-risk these programs would be accepting. In any case, the managers of these programs, the Legislature, and the Executive Branch must recognize and accept the higher loss rates that will inevitably occur if these programs start investing money at the higher-risk end of the Risk Continuum. The justification for this risk would be the public benefit derived from successful investments in technology companies that create new jobs and other economic benefits for Maine. This change in investment style will also require cultural changes in the underwriting process that will force program managers and staff to think more like venture capitalists than like commercial lenders. For example, one focus of the investment analysis will be shifted away from tangible collateral coverage as a primary component and move to less tangible aspects of the company profile such as the strength of the management team and the viability of the technology supporting the business plan. Cash flow will remain important, but willingness to defer payments will make immediate positive cash flow less important. We recommend using the Economic Recovery Loan Program as a pilot program for this activity by allocating $5,000,000 of existing available funds from that program for higher-risk investments that can become patient, hybrid debt with equity kickers to create secondary sources of returns.

- Maximize leverage of State-sponsored funding and remove barrier to investment with mentoring and training for start-up high-technology management teams by supporting private sector sources of risk capital and sponsoring training seminars and classes for investors and entrepreneurs:

  1) Support and encourage angel investors using networking forums like the Maine Investment Exchange (MIX).

  2) Sponsor training programs for angels like the "Seed Investing as a Team Sport" Seminar recently hosted in Maine by FAME. Similar seminars and forums can be supported for entrepreneurs. The Kaufman Foundation's FASTRAC Business Training Program should be supported and expanded in Maine.

  3) Support of private venture funds that are willing to invest in early-stage, Maine companies via tax credits, coinvestments, networking and other support.

  4) Support and encourage direct communication between managers of the Maine Technology Institute ("MTI"), the Small Enterprise Growth Fund, FAME and managers of other State-sponsored finance programs to be prepared to support the commercialization efforts that will ultimately occur from the Maine Technology Institute's R&D investments.

  5) Further remove barriers to capital with support of business incubator facilities to lower initial capital requirements for young companies.

VII) Bibliography

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APPENDIX A

Summaries of State-Sponsored Programs

(Most Descriptions Are Excerpted From the 1997 Business Development Incentives Report)

A) HIGH-RISK CAPITAL PROGRAMS (Equity/Deferred Debt With Rights to Equity):

Maine Seed Capital Tax Credit Program

Administering Agency: Bureau of Taxation/Finance Authority of Maine
Statutory Authority: 10 MRSA §1100-T

Program Description: Provides 30% tax credit for private investments of up to $200,000 per investor per eligible company. Eligible companies may receive up to $1,000,000 in investments; recent changes allow second round and venture fund investments in the same amounts.

Goals: To encourage the increased availability of risk equity capital to enterprises that bring capital into the State.

Operating Parameters: Tax credit certificates limited to no more than 30% of the amount of cash actually invested in the Maine business or eligible venture fund in a calendar year; business must be a manufacturer or providing a product or service that is sold, rendered or projected to be sold and rendered predominantly outside the State or must bring capital into the State. For a venture fund to be eligible it must invest in eligible businesses; aggregate investment eligible for tax credits may not be more than $1,000,000 for any one business or venture fund; the investment must be no more than $200,000 per investor in any one business or venture fund per three year period; the business receiving the investment must have annual gross sales of $3,000,000 or less, and the principal must be involved in the business on a full-time basis; the investment must be expended on plant, equipment, research and development or working capital; investors qualifying for the credit must collectively own less than one half of the business or venture fund; FAME may revoke the tax certificate, in full or in part, if any representation of applicant proves false or if applicant violates condition of issuance. No more than 50% of the tax credit may be taken in any one-year and the credit cannot exceed 50% of the applicant's tax liability in any one-year. Tax credits must be fully exercised within 15 years of investment.

Small Enterprise Growth Program

Administering Agency: Finance Authority of Maine/Department of Economic and Community Development.

Statutory Authority: 10 MRSA §381 et. seq.

Program Description: Provides loans that are convertible to equity to certain small business enterprises on flexible terms with other rights to be required based on relative risk.

Goals: To provide financing to certain small businesses which may involve higher-risk than conventional (including Government Agency) financing, but allow for potentially high growth and return on investment.

Operating Parameters: Available only to businesses with 25 or fewer employees or with sales less than $2,000,000/year; Eligible business must be involved in marine science, biotechnology, manufacturing, exports, software development, environmental service development, financial/insurance product or service development, and other worthy enterprises; business must demonstrate potential for high growth and public benefit, commit all available resources, show need for assistance to achieve goals and inability to access financing elsewhere; business plan must be submitted with application, including adequate mechanisms to monitor accomplishment of plan; business must provide evidence of matching funds from other sources and enter into agreement to repay loan, and if risk sufficient, to pay other amounts (such as through equity). Business required to report annually on performance, including job creation.

Technology Investment Fund

Administering Agency: Maine Science and Technology Foundation
Statutory Authority: 5 MRSA §13131
(will be rolled into the Maine Technology Institute)

Program Description: Current total funding is $450,000. Provides capital to companies with technology that provides a competitive advantage. Funds are used to bring the technology from the prototype stage to a commercially viable product.

Goals: To provide pre-commercialization funding to companies with technology that can lead to product or process innovation. Investments target funding for the next step to bring promising ideas from "the bench" to commercialization.

Operating Parameters: Company must employ 50 of fewer people; must have gross sales of less than $5,000,000 in the last 12 months; fall within the following industries: marine science; biotechnology, precision manufacturing, software development, composite materials, environmental science or technology, or other industries falling within the Maine Science and Technology Plan. Company must have matching funds at least equal to the investment, company must demonstrate potential for high growth and provide economic benefit to the State. Company must show potential to repay the investment.

B) MODERATE-RISK CAPITAL PROGRAMS (Specialized Debt):

Economic Recovery Loan Program

Administering Agency: Finance Authority of Maine
Statutory Authority: 10 MRSA §1023-I, 1026-J

Program Description: Provides direct loans to financially troubled businesses attempting to regain access to conventional sources of capital.

Goals: To provide loans to businesses that do not have sufficient access to credit, but demonstrate the ability to survive, preserve and create jobs, and repay loans.

Operating Parameters: Eligible projects are limited to manufacturing, recreational, industrial and natural resource enterprises, located in the State, which provide significant public benefit in relation to the amount of the loan, including benefits in the form of preservation of jobs, increased opportunities for employment, increased capital flow, particularly capital flowing in from outside the State, and increased state/municipal tax revenues. The program is limited to commercial entities which are creditworthy and reasonably likely to repay the loan. The borrower must have insufficient access to other funds and the loan must be necessary for public benefit to be realized. A determination is required that the borrower has exhausted all other available sources of capital in order to minimize the amount of the loan from the fund. Loans are limited to $1,000,000 per project, maximum of 20 years to repayment (for real estate) 10 years for (machinery and equipment), and 7 years (for other loans).

Regional Economic Development
Revolving Loan Program

Administering Agency: Finance Authority of Maine
Statutory Authority: 10 MRSA §1026-M

Program Description: Created in 1994 and funded with a $10,000,000 bond issued in 1995. It provides loans to eligible small businesses through 28 statewide, regional and local economic development agencies. Businesses may qualify for loans of up to $200,000 from the fund.

Goals: To provide financial assistance to eligible businesses that need access to capital in order to create or retain jobs.

Control Mechanisms: The Finance Authority of Maine approves funding to eligible economic development corporations including regional and statewide non-profit or governmental entities, which in turn loan funds to eligible businesses. The Authority selected 28 participating lending entities based on their demonstrated ability to underwrite and service loans and assist borrowers on a statewide basis. Loans may not exceed $200,000 to any particular borrower (loans over $100,000 require Authority approval) and, must be matched on a ratio of $2.00 of outside capital for each $1.00 from the program. Business borrowers must have 50 or fewer employees or annual sales of $5,000,000 or less and the business must consist of advanced manufacturing technologies, advanced information system technologies; advanced biological and natural resource technologies, be converting from defense dependency, be significantly engaged in the export of goods or services to locations outside the state, dedicate significant resources to research and development activities, have 5 or fewer employees. The borrower must show it was unable to obtain funding needed for the project from other public and private sources including the personal resources of the owners; must commit all available resources for the project, must obtain financing commitments from other sources of financing, and must demonstrate a reasonable likelihood that the loan can be repaid.

Development Fund

Administering Agency: Department of Economic and Community Development

Statutory Authority: 5 MRSA 13073

Program Description: Funded by federal money channeled through the State of Maine's Community Development Block Grant Program, the Development Fund provides funding to communities to in turn loan to businesses for the purpose of acquisition, relocation, demolition, clearance, construction, reconstruction, installation, rehabilitation and working capital. County governments may apply on behalf of unorganized territories.

Goal: To assist projects which represent new economic initiatives and development opportunities which will create or retain jobs. At least 51% of the total jobs created or retained must be taken by or made available to persons from low to moderate-income households. The cost per job created or retained with the Development Fund shall not exceed $35,000.

Operating Parameters: Loans to a business represent gap financing and must be for projects that are necessary and appropriate. The application must describe the need for assistance, reasonableness of the amount requested, and the repayment plan. The business must demonstrate that a market exists for its product or service, the cost of the product or service is competitive in current market conditions, the cash flow projections are adequate to support operating expenses and indebtedness, and management has the capacity to carry out the business or development plan. The project must demonstrate that there are no unidentified costs necessary for implementation. Documentation must be provided that the project cannot proceed without Development Fund assistance. The program cap is set at the lesser of $200,000 or 40% of the proposed project. The financing necessary to support the total project cost must be in place and evidenced by legally binding commitment letters. The applicant must make an equity commitment to the project, preferably through a cash injection. Other substantial participation may substitute for a cash equity injection with appropriate explanation regarding equity participation. The recipient must present collateral appropriate to secure the Development Fund loan and indicate a willingness to enter into security agreements. Terms are based on the business's maximum capacity for principle and interest payments as documented in the pro forma and will be reviewed by either DECD or its designee as appropriate to remain profitable. Funds cannot be used to pay down existing debt. The Development Fund Committee will review staff reports, credit analysis and make recommendations to the Director of the Office of Business Development for awards. The Committee will recommend one of four options: Approval of requested amount and terms; approval or requested amount but under different terms; rejection with staff recommendation for resubmission; or, rejection.

Business Assistance Program

Administering Agency: Department of Economic and Community Development

Statutory Authority: 5 MRSA 13073

Program Description: Funded by federal money channeled through the State of Maine's Community Development Block Grant Program ("CDBG"). The Business Assistance Program ("BAP") provides funding to communities or counties acting on behalf of a collaboration of communities, to loan, grant, or a combination of each, to business entities to meet the infrastructure, capital equipment and real property needs of businesses.

Goal: To assist those economic initiatives and development opportunities that are of sufficient magnitude to have a significant impact on a local or regional economy while at the same time creating or retaining jobs. At least 51% of the total jobs created or retained must be taken by or made available to persons from low to moderate-income households.

Operating Parameters: Loans and/or grants to a business represent gap financing and must be for projects that are necessary and appropriate. The application must describe the need for assistance, reasonableness of the amount requested, and the repayment plan. Documentation must be provided that the project cannot proceed without BAP assistance. The program cap is set at the lesser of $400,000 or 40% of the proposed project. The financing necessary to support the total project cost must be in place and evidenced by legally binding commitment letters. The proposal must demonstrate an appropriate leverage ratio of private and public dollars. The applicant must make an equity commitment to the project, preferably through a cash injection. The community must also demonstrate a vested financial interest in the proposed project ranging up to 33% of CDBG funds. BAP funds cannot be used to pay down existing debt. The recipient must present collateral appropriate to secure the BAP loan and indicate a willingness to enter into security agreements. Terms are based on the business's maximum capacity for principle and interest payments as documented in the pro forma and will be reviewed by either DECD or its designee as appropriate to remain profitable.

Commercial Loan Insurance Program
(a/k/a Mortgage Insurance Program)

Administering Agency: Finance Authority of Maine
Statutory Authority: 10 MRSA §962(1), 1026-D

Program Description: Provides loan insurance for up to 90% of commercial loans to Maine businesses.

Goals: To encourage private commercial lenders to make business loans to finance the planning, development, acquisition, construction, improvement, expansion and placing in operation of industrial, manufacturing, recreational, fishing, agricultural and other business and natural resource enterprises.

Operating Parameters: Maximum loan insurance limited to $2,500,000 for recreational enterprises, $7,000,000 for other; most loan guarantees of $1,000,000 or less fall under Small Business Loan Insurance Program; maximum insurance is 90% of the loan amount. Eligibility criteria require that project/applicant: a) will increase or retain income and employment in the State; b) be capable of achieving revenue/employment goals; c) be economically feasible; be financially capable; show evidence of management and planning capability and support of locality; offer collateral as meeting loan-to-value criteria; loans may not be made to projects which are primarily for retail sales to projects where more than 35% will be professional office space, or to most housing projects.

Small Business Mortgage Insurance and Veterans Small Business Mortgage Insurance

Administering Agency: Finance Authority of Maine
Statutory Authority: 10 MRSA §1026-B and 10 MRSA §1026-C

Program Description: Provides loan insurance for up to 90% of the total amount of a loan up to $1,000,000 to eligible small businesses (1026-B) with insurance of up to 100% of the total amount of qualifying loans of up to $75,000 under the Veterans Small Business Insurance Program (1026-C).

Goals: To encourage the making of mortgage loans to small businesses and veteran-owned small businesses.

Operating Parameters:

Small Business Mortgage Insurance (1026-B): Maximum loan is $1,000,000 (90% maximum guarantee); authorized to accept collateral inadequacy if borrowers are of good character and have a good credit record; limited to business employing less than 50 people having gross sales less than $5,000,000; limited to eligible enterprises (agricultural, fishing, industrial, manufacturing, or recreational); limited to eligible projects, such as real estate and/or personal property or related projects; retail store projects limited to $200,000, professional office space may not exceed 35% of project.

Additional operating parameters for Veterans Small Businesses Mortgage Insurance (1026-C): Maximum loan is $250,000 in addition to small businesses mortgage insurance, up to $1,100,000 on a combined basis; 100% guarantee up to $75,000; limited to veterans and businesses the majority of which are owned by veterans.

Occupational Safety Loan Fund

Administering Agency: Maine Department of Labor/Finance Authority of Maine

Statutory Authority: 26 MRSA §62

Program Description: The Finance Authority of Maine administers this program for the Maine Department of Labor. It provides low-interest loans directly to businesses seeking to make workplace safety improvements.

Goals: To provide low interest loans to improve safety and promote healthful working conditions in workplaces in the State of Maine.

Control Mechanisms: Projects must be designed to improve, install or erect equipment which reduces hazards to, and promotes the health and safety of workers; it limits loans to no more than $50,000 to any single applicant, at no more than 3% interest. Loan applications are reviewed by the Commission on Safety and Health in the Maine Workplace and the Department of Labor for feasibility, general reasonableness, safety need and sufficiency of capital, collateral or safety analysis, and credit worthiness of the applicant.

Waste Reduction and Recycling Loan Fund Program

Administering Agency: Finance Authority of Maine
Statutory Authority: 10 MRSA §1023-G

Program Description: Provides financing for businesses undertaking projects designed to reduce and recycle waste. Maximum loan amount is $100,000.

Goals: Provides direct loans to finance all or part of any project to substantially reduce or eliminate the production in a trade or business of solid waste or hazardous waste or a business which is devoted to resource recovery or the reuse of post consumer materials.

Control Mechanisms: Applicants must demonstrate project is eligible and that there is a reasonable likelihood the applicant will be able to repay the loan; a determination must be made that the project will not result in a net increase of solid or hazardous waste to be disposed of within the State; the project must contribute to achieving the goals identified in the State Waste Management Recycling Plan.

C) LOW-RISK CAPITAL PROGRAMS (Traditional Debt):

Municipal Securities Approval Program

Administering Agency: Finance Authority of Maine
Statutory Authority: 10 MRSA §1061 et seq.

Program Description: Allows the Finance Authority of Maine to authorize a municipality to issue tax-exempt bonds for the benefit of manufacturing or solid waste disposal projects permitted under the Federal Internal Revenue Code.

Goals: To assist municipalities in issuing revenue obligation securities for financing eligible projects. This program lowers financing costs to eligible borrower as an incentive to expand their activity.

Operating Parameters: Criteria for issuance of certificates of approval include the following:

1) The project makes a contribution to the economic growth of, the control of pollution in, the betterment of the health, welfare and safety of the inhabitants of, the State, that;
2) the project will not result in substantial detriment to existing businesses in the State;
3) adequate provision is being made to meet increased demand on public facilities;
4) in cases where it is proposed to relocate an industrial, commercial or recreational facility existing in the State, there is a clear economic justification for such relocation;
5) in the case of recycling and waste reduction projects, the proposed facility is consistent with the State Waste Management Plan and will reduce the amount of solid or hazardous waste requiring disposal;
6) in the case of pollution control facilities, the users will make a contribution to the economy of the state, a public benefit will result from the project, and it is unlikely that public facilities will be available in the foreseeable future;
7) in the case of public water supply system projects, the project will result in substantial public benefits, has been approved by the Public Utilities Commission and all licenses, permits and approvals have been granted;
8) in the case of an energy generating system, the Public Utilities Commission has certified that all required licenses have been issued and the Director of the State Planning Office has reviewed and commented on the project.

Borrowers must also meet applicable Internal Revenue Code criteria.

Revenue Obligation Securities Program

Administering Agency: Finance Authority of Maine
Statutory Authority: 10 MRSA §1041 et seq.

Program Description: Allows the Finance Authority of Maine to issue tax-exempt bonds for projects permitted under the sections of the Federal Tax Code, and taxable bonds to other eligible projects. In addition, in the case of issuance of bonds under the SMART, SMART-E, and Major Business Expansion Programs the Authority provides loan insurance of up to 90% of the financing.

Goals: To provide financing assistance through the issuance of revenue obligation securities for eligible projects in order to encourage economic activity and create and retain jobs, 10 MRSA §962 (2).

Operating Parameters: Limited to eligible projects. The Authority must find that:

1) the project makes a contribution to the economic growth of, the control of pollution in, the betterment of the health, welfare and safety of the inhabitants of the State, that;
2) the project will not result in substantial detriment to existing businesses in the State;
3) adequate provision is being made to meet increased demand on public facilities;
4) in cases where it is proposed to relocate an industrial, commercial or recreational facility existing in the State, there is a clear economic justification for such relocation;
5) in the case of recycling and waste reduction projects, the proposed facility is consistent with the State Waste Management Plan and will reduce the amount of solid or hazardous waste requiring disposal;
6) in the case of pollution control facilities, the users will make a contribution to the economy of the state, a public benefit will result from the project, and it is unlikely that public facilities will be available in the foreseeable future;
7) the project proponent will be cooperative with representatives of the Maine Departments of Labor and Human Services;
8) in the case of major business expansion projects, the applicant is creditworthy and there is a strong likelihood that the revenue obligations securities will be repaid through revenues of the project and any other sources of revenue and collateral pledged to the repayment of those securities;
9) projects under the Major Business Expansion Program must demonstrate the creation or retention of at least 100 jobs.

APPENDIX B

PUBLIC LAWS OF MAINE
Second Special Session of the 118th

CHAPTER 784
H.P. 1585 - L.D. 2216

An Act to Implement the Recommendations of the Commission to Study the Restructuring of the State's Fiscal Policies to Promote the Development of High-Technology Industry in Maine

Be it enacted by the People of the State of Maine as follows:

Sec. 1. Establishment of Ph.D. programs. The Chancellor of the University of Maine System shall identify, within the University of Maine System, the high-technology disciplines that would be the most productive for the establishment of programs, including Ph.D. programs, to provide educational and professional opportunities for Maine students and economic opportunities through the establishment of significant academic high-technology resources. The chancellor shall consider especially the establishment of Ph.D. programs in computer science and electrical engineering as well as other areas where Ph.D. programs do not currently exist within the target areas identified by the Maine Science and Technology Foundation: biotechnology, environmental technology, composite technology, information technology and marine science technology. The chancellor shall present a report on the need for any additional high-technology degree programs, including any necessary implementing legislation, to the joint select committee of the Legislature having jurisdiction over research and development matters, the joint standing committee of the Legislature having jurisdiction over education and cultural affairs and the 119th Legislature by January 1, 1999 for the establishment of Ph.D. programs in a timely manner.

Sec. 2. Financial aid programs. The Finance Authority of Maine shall review existing student financial aid programs for supporting students pursuing high-technology courses of study and make recommendations to the 119th Legislature by January 1, 1999, including any necessary implementing legislation, to provide additional resources to support such students.

Sec. 3. Availability of capital. The Finance Authority of Maine shall analyze the availability of capital for business start-up and development to determine if sufficient capital is available for all levels of high-technology business needs and to identify what barriers may exist to accessing capital. The Finance Authority of Maine shall develop strategies for increasing capital, if necessary, and for assisting fledgling businesses in locating and obtaining capital and for removing barriers to access. The authority shall submit a report to the 119th Legislature by January 1, 1999 describing the results of its analysis and containing its recommendations along with any necessary implementing legislation.

Sec. 4. Analysis and review of effectiveness of tax incentives.

1. Analysis of tax incentives. The Bureau of Revenue Services shall gather and analyze, to the maximum extent possible while preserving any taxpayer confidentiality as provided in the Maine Revised Statutes, data regarding businesses taking advantage of the following incentives:

A. The Maine Employment Tax Increment Financing Program;
B. The seed capital investment tax credit;
C. The research expense tax credit;
D. The supercredit for substantially increased research and development;
E. The high-technology investment tax credit;
F. The sales tax exclusion for custom computer software;
G. The sales tax exemption for nonprofit medical research corporations and biology and ecology labs;
H. The sales tax exemption for sales of research and development equipment; and
I. The sales tax exemption for organizations conducting research for the Maine Science and Technology Foundation.

All other agencies involved in the administration of a tax incentive subject to analysis shall provide any information requested by the Bureau of Revenue Services to complete the analysis required by this section.

2. Effectiveness of tax incentives. The Department of Economic and Community Development shall examine the information provided by the Bureau of Revenue Services and determine whether each tax provision is an effective means of providing incentives for the growth of high-technology businesses in the State and make recommendations for any necessary changes.

3. Report. The Bureau of Revenue Services and the Department of Economic and Community Development jointly shall submit the results of the examination required by this section, including any necessary implementing legislation, to the 119th Legislature by January 1, 1999.

Sec. 5. High-technology marketing. The Maine Science and Technology Foundation and the Department of Economic and Community Development jointly shall, pursuant to the State science and technology plan, identify action steps for attracting and developing new companies, including a plan for marketing the State as a high-technology location. The foundation and the department shall present the plan, including any necessary implementing legislation, to the 119th Legislature by September 1, 1999 for aggressively marketing the State's potential as a location for high-technology businesses.

Sec. 6. Clearinghouse. The Maine Science and Technology Foundation, working with the Maine Development Foundation, the Finance Authority of Maine, the Department of Economic and Community Development, the State Planning Office, the Department of Labor, the University of Maine System, the Technical College System and the high-technology industry, shall establish a statewide clearinghouse for information and assistance to persons

seeking to conduct research and development and to develop high-technology businesses in the State. The clearinghouse may include, but is not limited to, the following information and assistance: a complete inventory of existing high-technology resources; sources of federal and private financial support for research and development and assistance in grant writing; and development of technology business plans, accessing capital, obtaining legal and other professional assistance, managing business growth and marketing, the science and technology report card and information on the availability of a skilled workforce. The foundation shall submit a progress report by September 1, 1999 to the joint standing committee of the Legislature having jurisdiction over business and economic development matters on the establishment of the clearinghouse. The report may include recommendations on legislation required for full implementation of the statewide clearinghouse.

Sec. 7. PL 1997, c. 557, Pt. C, §11 is amended to read:

C-11. Report. The commission shall present its findings and any recommended legislation to the Second Regular Session of the 118th Legislature by ~~January 1~~ February 3, 1998.

Sec. 8. Retroactivity. That section of this Act that amends Public Law 1997, chapter 557, Part C, section 11 is retroactive to January 1, 1998.

Effective July 9, 1998, unless otherwise indicated.

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