

SAN ANTONIO MULTI-TECH VENTURE FUND FEASIBILITY ASSESSMENT REPORT

Presented to the Honorable Phil Hardberger, Mayor
And
The City of San Antonio

Sustainable Systems, Inc.
Strategic Development Solutions
Economic Innovation International, Inc.

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SUSTAINABLE SYSTEMS, INC

 STRATEGIC
DEVELOPMENT
SOLUTIONS



ECONOMIC
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1.0 EXECUTIVE SUMMARY

Project Summary

This report was commissioned by the San Antonio Mayor's Office to make an initial assessment of the viability of a Multi-Tech Double Bottom Line Venture Fund for investing in the biomedical, biotechnology, high technology, and green/clean technology industries in the San Antonio region.

Double Bottom Line (DBL) funds pursue a market rate of financial return (the First Bottom Line) and substantial economic, social, and environmental returns (the Second Bottom Line). However, it is important to be clear that there is no Second Bottom Line without consistent success in meeting the First Bottom Line.

This initial assessment of the feasibility of a Multi-Tech Venture Fund in the San Antonio region is part of a larger sustainability initiative that the City of San Antonio is launching.

Project Team

The City of San Antonio contracted with Sustainable Systems, Economic Innovation International, Inc. and Strategic Development Solutions (the "Project Team") to conduct this assessment and to make recommendations. Together, these three firms have over 80 years of economic development experience and have created numerous innovative financial vehicles—including more than 30 venture capital funds—across the U.S. and around the globe. Most particularly, the Project Team has led in the development of a national Double Bottom Line private equity industry that today has approximately \$20 billion of capital under management. Many repeat large institutional investors in this industry are continuing to seek attractive investment opportunities that meet both First and Second Bottom Line objectives.

Methodology

The Project Team conducted extensive primary and secondary research for this report. In addition to evaluating quantitative data, the Project Team traveled to San Antonio to conduct interviews with a significant number of leaders in the City's biomedical, biotechnology, high technology, and green/clean technology industries, as well as with government officials and community leaders. The Project Team conducted five days of interviews with investors, entrepreneurs, and stakeholders in these industries. Findings from all data sources are detailed in this report.

Study Findings

The Project Team found the following:

- Venture capital activity in Texas overall is relatively strong. In San Antonio, the rate of venture capital funding is growing.
- Though venture capital activity in San Antonio is growing, currently, the venture capital environment in the city is weak.
- The biomedical and high technology industries in San Antonio are relatively small but growing, while the green/clean technology industry is in a very early stage, currently.

- There are a number of entities within the state of Texas that are promoting biomedical, biotechnology, high technology, and green/clean technology growth.
- There is significant opportunity for technology transfer in San Antonio.
- San Antonio has a nascent but growing entrepreneurship infrastructure.
- There is anecdotal evidence that there is capital in the San Antonio market for investment but that entrepreneurs in San Antonio have difficulty accessing the funds they need to grow.
- There is great belief among San Antonio residents that venture capital financing could be successfully employed by area entrepreneurs and that the region would benefit from such investments.
- A venture fund in San Antonio that is willing to partner with other venture firms in Texas and on the East/West Coasts will attract more venture capital to San Antonio.

Recommendations

Based upon the data research and interview findings, the Project Team recommends the following:

- 1) San Antonio should pursue a Multi-Tech Venture Fund.
- 2) The Fund should be structured to allow for biomedical, biotechnology, high technology, and green/clean technology investments.
- 3) The Fund should be structured to provide early-, mid- or late-stage venture funds and, possibly, seed capital as well.
- 4) The Fund should have a footprint larger than San Antonio.
- 5) The size of this regional fund should be \$100 million.
- 6) The Fund should hire a nationally regarded professional manager with strong venture capital ties to the East and West coasts, as well as extensive experience in funding biomedical, biotechnology, high technology, and green and clean technology.
- 7) The Fund Manager should be Brooke Private Equity Advisors and the Fund should have a local office in San Antonio. (Brooke Private Equity Advisors and its principals are described in Appendix A.)
- 8) A significant initial portion of the Fund capitalization should come from San Antonio and Texas institutional, pension fund and high net worth individual investors. This local investor support is essential to attract national investors, especially given the current economic and financial climate.

Fund Building Work Plan

The Project Team recommends a Fund Building Work Plan that details fund building activities involved in building a San Antonio Multi-Tech Venture Fund. The Work Plan includes three phases: (1) Market Assessment, (2) Fund Capitalization, and (3) Ongoing Fund Operations. All phases require work from a Fund Building Team and a Fund Manager, in association with a Regional Advisory Committee. The Project Team has used this fund building process to develop and launch multiple venture and private equity real estate funds around the country.

It is proposed that Strategic Development Solutions, Sustainable Systems, and Economic Innovation International, Inc. be the Fund Building Team.

It is also proposed that Brooke Private Equity Advisors be the Fund Manager. Brooke Private Equity Advisors and its principals are recognized pioneers and global leaders in emerging market, conventional and Double Bottom Line venture capital and private equity funds in this country and overseas. They have extensive experience in financing biotechnology, bio-medical devices and other life science technology, as well as a range of information and computer technologies and both clean tech and green tech. (Information about Brooke Private Equity Advisors can be found in Appendix A.)

Together, the Fund Building Team and Fund Manager will be responsible for building and capitalizing the Fund. The cost for the completing the Market Assessment for a San Antonio Multi-Tech Venture Fund is \$75,000. The Fund Building Team and the Fund Manager will bear the additional fund building costs and recover them at the closing of the Fund.

It is also proposed that a Regional Advisory Committee be constituted and that the Fund Building Team and the Fund Manager collaborate with the Regional Advisory Committee to assess the strengths of the San Antonio market in each technology area, the potential deals for a deal pipeline, and local investor interest in the Fund. Once the Fund is operational, the Fund Manager will handle all day-to-day operations in partnership with the Fund Building Team.

Double Bottom Line Fund Building Models

Double Bottom Line Funds are funds that pursue one or more special Second Bottom Line objectives (such as economic development, job creation, tax revenue generation, community revitalization, etc.) in addition to market rate financial returns (the First Bottom Line). In the case of a San Antonio Multi-Tech Fund, the most important Second Bottom Line objective is economic development. A Multi-Tech Fund would achieve this Second Bottom Line objective by stimulating the growth of the bio-tech, high-tech, and clean/green tech industries in the San Antonio region.

St. Louis Vectis Funds I and II and Bay Area Equity Fund are three established Double Bottom Line venture capital funds that can serve as partial models for a San Antonio Multi-Tech Venture Fund. The St. Louis Vectis Fund of Funds I and II, managed by Brooke Private Equity Advisors, is of particular note because they were designed to build a life science industry deeply rooted in the St. Louis region by investing in both St. Louis and in East Coast and West Coast funds that would then invest in St. Louis life sciences firms, as well as by undertaking direct investment. Brooke Private Equity and its principals have built and managed similar Double Bottom Line Funds investing in a range of technologies in partnership with members of the Fund Management team in this country and overseas.

Conceptual Framework

The Appendix presents the conceptual framework for Double Bottom Line venture funds, such as the proposed San Antonio Multi-Tech Venture Fund discussed in this report.

2.0 PROJECT STATEMENT

This report was commissioned by the San Antonio Mayor's Office to make an initial assessment as to whether a Multi-Tech Double Bottom Line (DBL) Venture Fund might be feasible for investing in biomedical, biotechnology, high technology, and green/clean technology industries in the San Antonio region. This study is part of a larger initiative that the City of San Antonio is embarking on to develop a comprehensive strategy for economic development and community revitalization oriented around the core concept of sustainability.

The Mayor's Office contracted Sustainable Systems, Economic Innovation International, Inc., and Strategic Development Solutions (the "Project Team") to assess whether the current state of the biomedical, biotechnology, high technology, and green/clean technology industries in San Antonio can support a venture capital fund that will support and, in turn, grow these sectors in the region.

Specifically, the Project Team sought answers to the following questions:

- What is the level of biomedical, biotechnology, high technology, and green/clean technology activity in San Antonio?
- What level of infrastructure (research institutions, entrepreneurship organizations, incubators, financial institutions, etc.) is currently available for each of these industries?
- Are companies in these fields able to access the capital they need to grow?
- How do companies in San Antonio obtain growth capital currently?
- What resources could help San Antonio achieve its goal of cultivating these industries?
- If venture capital is needed, how much capital is needed to support the current level of deal flow?

Based on the findings for each of the aforementioned questions, the Project Team makes recommendations about whether and how to proceed with a San Antonio Multi-Tech Venture Fund. In this report, the Project Team also presents a process for venture capital fund creation, including a recommendation for Fund Manager, with timeline and costs for the City of San Antonio to consider. Finally, in the first Appendix, the Project Team provides a description of the recommended Fund Manager, and in the second Appendix, the Project Team presents a conceptual framework for understanding the process of building DBL venture capital funds.

3.0 THE PROJECT TEAM

The Mayor's Office contracted with Sustainable Systems, Economic Innovation International, Inc. and Strategic Development Solutions (the "Project Team") to conduct this initial assessment. Together, these three firms have over 80 years of economic development experience and have created numerous innovative financial vehicles—including more than 30 venture capital funds—across the U.S. and the globe.

The three firms specialize in the organization and operation of Double Bottom Line investment funds. DBL funds, business ventures, and developments pursue a market rate of financial return (the First Bottom Line) and substantial economic, social, and environmental returns (the Second Bottom Line). The three firms co-authored *The Double Bottom Line Handbook: A Practitioner's Guide to Double Bottom Line Investment Initiatives and Funds*, which the Ford Foundation supported as the first comprehensive discussion of the growing \$20 billion national DBL industry. *The Double Bottom Line Handbook* can be accessed at www.sdsgroup.com.



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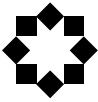
Sustainable Systems was co-founded by Joseph Gross, President and CEO, and James Nixon, Chair and CFO, in 1993. Sustainable Systems is a business and economic development corporation, located in Oakland, California,

that provides market-based strategies for the achievement of sustainable development and smart growth. Sustainable Systems manages the Communications Technology Cluster, a Business Acceleration Center in downtown Oakland.

Sustainable Systems is also Lead Consultant to the Bay Area Council for the Bay Area Family of Funds, a \$250 million Double Bottom Line Initiative, including four funds, a fund in formation, and a set of regional economic innovations. Sustainable Systems served as the acting Managing Director for the Strategic Action Council of the Northwest Louisiana, which is undertaking a suite of economic and social innovations, including Northwest Louisiana Community Development Fund I. Now Sustainable Systems is a Development Consultant for different Double Bottom Line developments in Northwest Louisiana.

Sustainable Systems has co-coordinated three international *Building the Sustainable Economy* conferences and authored *Building the Sustainable Economy, an Opportunity for Oakland*, which was adopted unanimously by the Oakland City Council and led to Oakland's Sustainable Development Initiative.

Mr. Gross is a specialist in business and real estate development using private sector capital to accomplish Double Bottom Line objectives and a former President of the Berkeley California School Board. Mr. Nixon has an extensive background in Socially Responsible Investment and is a securities professional with Series 7 and Series 24 securities registrations.



ECONOMIC INNOVATION INTERNATIONAL, INC

Belden Hull Daniels is the founder and CEO of Economic Innovation International, Inc., a firm internationally recognized for building more than \$100 billion of privately capitalized funds designed to accomplish civic and public purposes in 37 states and 21 nations of North America, Europe, and Asia since its founding in 1970. In building new development finance industries over the last 38 years, Economic Innovation has undertaken hundreds of market assessments that identify capital market failures and then implemented instruments targeted to remove those barriers.

Since 1997, Economic Innovation has been a leader, in partnership with Strategic Development Solutions and in association with Sustainable Systems, in creating the Double Bottom Line private equity industry, in which large institutional investors join with community stakeholders to invest nearly \$20 billion of private capital in market-rate funds managed by world-class fund managers to rebuild poor neighborhoods. These Double Bottom Line initiatives and private-equity funds invest in low-income neighborhoods to produce superior market returns for large institutional investors—major banks, insurance companies, pension funds, university endowments, corporations, and high-net-worth individuals—while simultaneously producing jobs, wealth, and community revitalization for low-income residents.

Funds that Economic Innovation has helped to build include the Genesis LA Funds with SDS and the Bay Area Family of Funds with Sustainable Systems. Other DBL funds are found from Boston, Massachusetts to San Diego, California and Puget Sound, Washington to Miami, Florida, as well as in such difficult overseas environments as Northern Ireland, Central Europe, Puerto Rico, and Palestine. Over the past three decades, Economic Innovation International has built more than 30 technology commercialization funds, seed and early stage venture capital funds, as well as later stage venture and mezzanine capital funds in 19 states and four countries overseas. Belden Hull Daniels is an attorney and former international banker in Asia who taught development finance for many years at Harvard and MIT.



STRATEGIC DEVELOPMENT SOLUTIONS

Deborah La Franchi is the founder and CEO of Strategic Development Solutions (SDS). SDS has been involved with the development of more than 13 different investment funds across the country and internationally. This work has included the development of the Genesis Family of Double Bottom Line funds: six funds with more than \$450 million of committed capital under management leveraged to more than \$1.2 billion in development projects.

The different funds designed and built by SDS range from private-equity venture/growth funds to real estate funds targeting specific areas such as commercial, industrial, retail, and workforce housing.

Before forming SDS in 2002, Ms. La Franchi served as the founding President and CEO of Genesis LA. Before her work at Genesis LA, she served as Assistant Deputy Mayor for Economic Development under Mayor Richard Riordan. In this capacity she managed a number of economic policy initiatives, including: tax reform, business incentives, business attraction policies, and development reform.

4.0 METHODOLOGY

The Project Team conducted extensive primary and secondary research in putting together this report.

First, the Project Team surveyed existing data to determine the current state of venture capital, biomedical, biotechnology, high technology and green/clean technology in Texas and across the United States. The Project Team gathered information from the following sources:

- Federal Reserve Bank of Dallas
- Texas State Energy Conservation Office
- Texas State Office of the Governor
- Ernst and Young – “Clean Technology Global Trends and Insights Report 2007”
- Various industry websites – CleanTech Forum, Biotechnology Industry Organization, AeA
- Various local business journals from San Antonio, Dallas, San Francisco, etc.
- National Newspapers - New York Times, USA Today

Following the collection of secondary data, the Project Team traveled to San Antonio, Texas in late August of 2008 in order to conduct interviews with various leaders in the city’s biomedical, biotechnology, high technology, and green/clean technology industries, as well as public officials and community leaders. The Project Team conducted five days of interviews with investors, entrepreneurs, and stakeholders in these industries. Information collected from the primary and secondary sources is provided in Section 5 of this report.

Upon completion of the data research and interviews, the Project Team developed its recommendations and proposed work plan, including recommendation of a Fund Manager, as detailed in Sections 6 and 7 of this report.

It should be noted that since the Project Team visited San Antonio in August 2008, much has changed in the U.S. capital markets. The recommendations made in this report are provided with a consideration for those changes.

5.0 RESEARCH

In this section the Project Team presents its secondary (data) and primary (interview) research findings.

5.1 Data Research

Overview

Nationally, the biomedical, biotechnology, high technology, and green/clean technology industries have grown over the last decade. This trend is expected to continue into the future and to accelerate rapidly with regard to green and clean tech, providing new engines of economic growth across the U.S. The expansion of these industries is occurring in Texas where they are playing an important and increasing role in economic development in the state.

In this section, the Project Team shares information about the biomedical, biotechnology, high technology, and green/clean technology industries with regard to:

- 1) Industry size and growth projections
- 2) Existing venture capital funds of note serving the individual sectors
- 3) Existing conferences and networks intended to support and grow these industries nationally and in Texas

Definition of Industries

Before beginning a discussion of overall findings, it is important to define the industries discussed in this report.

- 1) Biomedical: The biomedical field encompasses a diverse group of industries and activities that span different markets including manufacturing, services, and research. This sector includes the following sub sectors: Agricultural Feedstock and Chemicals, Drugs and Pharmaceuticals, Medical Devices and Equipment, and Research, Testing, and Medical Laboratories.
- 2) Biotechnology: Biotechnology refers to the use of living organisms or their products to modify human health and the human environment. Often biomedical and biotechnology are used interchangeably by the public.
- 3) High Technology: High technology is technology that is at the cutting edge—the most advanced technology currently available. The industry includes high technology manufacturing, communications services, digital media, and software and computer-related services.
- 4) Green Technology: Green technology (or environmental technology) is the use of technology to conserve and protect the environment.
- 5) Clean Technology: Officially, “clean tech” is defined as “any product, service, or process that delivers value using limited or zero non-renewable resources and/or



creates significantly less waste than conventional offerings.” Often green tech and clean tech are used interchangeably by the public.

Overall Venture Capital Investment in Texas and San Antonio

The statistics in this section provide an overview of venture capital activity in Texas and San Antonio.

Texas

The information below is from the Federal Reserve Bank of Dallas.¹

- In 2000, Texas venture capital spending was booming at almost \$6 billion a year—up more than five times from 1998. The high technology bust led to a precipitous decline in 2001 and 2002, and venture capital showed little or no growth for the next several years. Venture capital investment began to rebound in late 2005, and it grew 28 percent in 2006, outstripping the nation’s 12 percent growth. Even so, last year’s \$1.4 billion represented slightly less than 6 percent of the U.S. total.
- Venture capital investment fosters job creation, both nationwide and in the state. In 2003, for example, venture-backed companies accounted for nearly 12 percent of Texas private employment and generated about \$188 billion in annual sales, according to a 2004 study by the National Venture Capital Association and Global Insight.
- High technology still dominates Texas venture capital.
- More than two-thirds of Texas venture capital investment takes place in the four largest metropolitan areas. Austin leads the pack by a large margin, increasing its share of Texas venture capital from 33 percent to over 43 percent since 2000. All told, the capital city commands more venture capital than Dallas–Fort Worth, Houston, and San Antonio combined.
- Although venture capital spending isn’t likely to regain the lofty heights of 2000 any time soon, the most recent data suggest that Texas investment may have broken out of its slump. This bodes well for the confidence and optimism of Texas firms—and it should help boost job creation and output.

San Antonio

- In venture capital, San Antonio is one of fastest growing regions in terms of percentage growth of total investment dollars during the past 10 years. Its total venture capital investment dollars grew from \$10.55 million to \$22.5 million from 1997 to 2007. However, compared to other large regions across the U.S., San Antonio’s total investment dollars are significantly lower. San Antonio attracted \$22.5 million in total venture capital investments in 2007, whereas other regions in the U.S. attracted hundreds of millions to a billion in total venture capital investment.² According to the *San Antonio Business Journal*, San Antonio had only

¹ Federal Reserve Bank of Dallas, “Texas Venture Capital Revived Spending Ends Prolonged Lull,” Issue 1 (January/February 2007), <http://www.dallasfed.org/research/swe/2007/swe0701d.cfm>

² http://www.usatoday.com/money/smallbusiness/2008-03-10-venture-capital_N.htm#chart



two companies receive venture capital investment in each of the first two quarters of 2007.³

- Despite Austin's dominance, San Antonio is the only major metro area posting gains in venture funding in this decade. The city's share of the Texas market increased fivefold—from 0.9 percent in 2000 to an average of 4.7 percent from 2003 to 2006. Fueling San Antonio's upsurge are investments in the life sciences and high technology sectors.⁴
- Jay Campion, co-founder and managing director of Austin-based investment firm Access Ventures, says venture capital increases in a city as the number of good, quality companies increases. "And San Antonio is a good example," Campion says, "...I think San Antonio is having a good variety in the sense of investment opportunities. Some are medical, some are software." Still, Jim Poage, president and CEO of SATAI (San Antonio Technology Accelerator Initiative), says "San Antonio is an underserved market in terms of venture capital."⁵
- While the level of overall venture capital is small but growing in San Antonio, the venture capital environment seems to be healthier in other markets across the state. The other three major Texas cities as a whole attracted about \$361.3 million in venture capital funding for roughly 37 deals in the first quarter of 2008.⁶

Overview of the Biomedical and Biotechnology Industries

Information about the biomedical and biotechnology industries nationally, in Texas, and in San Antonio is provided below.

Industry Size, Venture Capital Activity in the Industry and Growth Projections

The statistics that follow provide an overview of the current and projected state of the biomedical and biotechnology industries.

- As of 2007, the biotechnology industry was valued at \$33.6 billion nationally. It has quadrupled in size since 1992.⁷
- Growing at the rate of 13.95% from the year 2005, the U.S. biotechnology industry is expected to reach \$131.8 billion by the end of 2010.⁸
- From 2002 to 2007, venture capital investments in biomedical companies nationally showed a steady increase, reaching \$11.6 billion in 2007.⁹ Venture funding in the

³ Phinisee, Tamarind. "Venture Capital Picture in San Antonio Shrinking, Survey Shows." San Antonio Business Journal. June 13, 2008. <http://austin.bizjournals.com/sanantonio/stories/2007/05/07/story4.html> and Phinisee, Tamarind. "City's Venture Capital Report Once Again Lacks Luster." San Antonio Business Journal. Dec 14, 2007. <http://www.bizjournals.com/sanantonio/stories/2007/12/17/story2.html?page=2>.

⁴ Federal Reserve Bank of Dallas, "Texas Venture Capital Revived Spending Ends Prolonged Lull," Issue 1 (January/February 2007), <http://www.dallasfed.org/research/swe/2007/swe0701d.cfm>

⁵ Tamarind Phinisee, "S.A. Firms Gain \$10 Million in Venture Capital," San Antonio Business Journal (November 3, 2006), <http://sanantonio.bizjournals.com/sanantonio/stories/2006/11/06/story8.html>

⁶ Tamarind Phinisee, "Venture Capital Picture in San Antonio Shrinking, Survey Shows," San Antonio Business Journal (June 13, 2008), <http://sanantonio.bizjournals.com/sanantonio/stories/2008/06/16/story4.html?page=2>

⁷ Donna Clapp, "Biotechnology: The Economic Growth Engine of the 21st Century," Business Facilities (March 2007), www.businessfacilities.com/bf_07_03_special1.php.

⁸ RNCOS, "US Biotech Market Analysis Report," (March 2007)

⁹ "Technology, Talent and Capital: State Bioscience Initiatives 2008," (June 2008), Prepared for BIO-Biotechnology Industry Organization for Battelle Technology Partnership Practice, www.bio.org/local/battelle2008/State_Bioscience_Initiatives_2008.pdf.



biotechnology industry nationally was \$6.2 billion in 2007, comprising approximately 25% of total biotechnology industry financing.¹⁰

- From 2001-2006, the number of establishments and level of employment within the biomedical industry in Texas grew by 8.6% and 5.8% respectively. The growth in employment in this sector in Texas (5.8%) has outpaced the national rate (3.1%).¹¹
- In 2002-2007, Texas ranked 9th in biomedical venture capital investments. Texas drew \$1.3 billion in investments of the nation's \$51.3 billion.¹²
- Texas is nationally ranked in the top 10 for the number of life and physical scientists employed and the number of traditional biotechnology companies located in-state.¹³

San Antonio

While San Antonio is not a large national biotechnology center, it does attract some level of venture capital funds and industry attention. However, more local funding may be needed to support further growth in this industry.

- According to the Federal Reserve Bank of Dallas, "San Antonio's share of biotech employment is second in Texas, slightly behind Austin's. By several measures, San Antonio has a significant amount of biotech research and development. After adjusting for size, San Antonio leads the Texas biotech metros in biotech patents classified by inventor residence. Measures of venture capital and NIH funding going into biotech in San Antonio are relatively strong."¹⁴
- In the biotechnology industry San Antonio is considered a median metropolitan area, according to the Brookings report. "San Antonio's share was small, but it was larger than that of other Texas metros and significant given the area's size. At 0.9 percent, San Antonio's share of U.S. biotech venture capital was larger than Houston's (0.7 percent), Austin-San Marcos' (0.6 percent) and Dallas-Fort Worth's (0 percent). San Antonio received \$90.4 million; Houston, \$72.6 million; and Austin-San Marcos, \$58.4 million."¹⁵

Venture Capital Funds Targeting Biomedical and Biotechnology

The Project Team found that there are many venture capital funds targeting biomedical and biotechnology companies nationally. Below is a list of venture capital funds active in Texas. It appears that these funds have very limited, if any, activity in San Antonio. While the Project Team found limited venture capital activity in San Antonio, the Team did find private equity firms focusing on biotechnology.

Emergent Technologies Fund IV, L.P. – In May 2007, Emergent Technologies, Inc. (ETI) announced that it raised a \$27.1 million venture capital fund to create biotechnology startups in Texas. The fund will be used to commercialize technology developed in the University of Texas System (UT). Funding was raised from institutional investors and business executives,

¹⁰ "Biotechnology Industry Facts 2008," Biotechnology Industry Organization, www.bio.org/speeches/pubs/er/statistics.asp

¹¹ "Bioscience 08," Biotechnology Industry Organization, http://www.bio.org/local/battelle2008/TX_BIO_08.pdf

¹² "Bioscience 08," Biotechnology Industry Organization, http://www.bio.org/local/battelle2008/TX_BIO_08.pdf

¹³ Office of the Governor, Economic Development & Tourism, "Texas Biotechnology Industry Report," (May 2008), http://www.texasone.us/site/DocServer/Texas_Biotech_Industry_Report.pdf?docID=2781

¹⁴ "Biotech and the San Antonio Economy," Federal Reserve Bank of Dallas, San Antonio Branch (Spring 2003), <http://www.dallasfed.org/research/vista/vista0301.pdf>

¹⁵ Ibid.



including Austin attorney Pike Powers, retired Microsoft Corp. executive Mike Maples Sr., former Dell Inc. executive Tom Meredith, and San Antonio billionaire Red McCombs.

ETI already has invested in two projects at UT-Austin: Mimetic Solutions LLC, which develops drugs with “smart chemistry” that can recognize a specific biologic marker, and Beacon Sciences LLC, whose biochemistry research is being applied to medical diagnostics, environmental testing and biodefense.¹⁶

Cogene Ventures Fund – The \$157 million Cogene Ventures II Fund was raised to focus solely on life science and health care investments. The game plan called for expansion-stage investments in targeted companies nationwide, with a particular emphasis on Texas and the Southeastern U.S. The stated goal included investments in approximately 25 companies over five years, with initial capital ranging from \$2 million to \$5 million per company.¹⁷

Santé Health Ventures (www.santeventures.com/) – This \$130 million fund, with offices in Austin, Texas and Nashville, TN, invests exclusively in new ventures operating within the \$2 trillion U.S. healthcare industry, including medical technologies, healthcare services and health IT. Santé’s founding partners previously ran Health. The Santé team has collectively invested over \$100 million in almost two dozen healthcare ventures over the last decade, generating a track record of portfolio success.

Early-stage venture investors, Santé typically invests in the first or second round of institutional capital (Series A or B). It occasionally invests in the seed round of a particularly promising technology, and generally prefers to invest at the growth stage in healthcare service companies once a profitable unit economic model has been demonstrated. Santé generally invests \$2-6 million per round and targets \$4-12 million in total capital invested over the life of a company, but is flexible based on the needs of the company.

PTV Sciences (www.ptvsciences.com) – Founded in 2003, PTV Sciences is a healthcare venture capital and growth equity firm with offices in Austin and Houston, Texas. PTV has a team of investment professionals and 15 venture partners representing leading clinicians, scientists, academic institutions and entrepreneurs. PTV focuses on enabling industry leading companies and investing in extraordinary people in the healthcare and life sciences sector, including medical devices, biotechnology, pharmaceuticals and diagnostics. It invests in companies across the U.S., leveraging world-renowned resources in Texas to create disruptive technology, compelling investment opportunities and life-saving change.

Essex Woodlands (<http://www.essexwoodlands.com/>) – Essex Woodlands was founded in 1985 with the establishment of Essex Venture Fund I, LP. Since 1985, the Partnership has raised seven additional funds with nearly \$2.5 billion under management, making Essex Woodlands one of the world’s largest and most established healthcare venture capital firms. The team is comprised of 23 professionals with principal offices in Palo Alto, Houston, New York and London. This team brings over 300 years of collective healthcare experience.

For over 20 years, the firm has maintained its dedicated focus to diversified healthcare investing—primarily serving as lead investor in the founding or the critical financings of over 100 healthcare companies in pharmaceutical, biotechnology, medical device, services and

¹⁶ <http://www.otc.utexas.edu/News/New27MillionFund.jsp>

¹⁷ <http://houston.bizjournals.com/houston/stories/2006/01/16/story1.html?page=2>



information technology sectors. In addition to its long-standing commitment to early stage companies, the firm has over a decade of experience as a leading late-stage healthcare investor, which includes mature venture, growth equity and PIPE investment opportunities.

Texas Intrepid Ventures Fund I, L.P. (www.txintrepid.com) – Texas Intrepid Ventures (TIV) was recently launched to leverage opportunities arising from San Antonio’s military medicine and commercial trauma sectors. TIV’s stated goal is to accelerate the Department of Defense’s mission by using investment dollars to improve the lives of trauma victims and provide returns for investors. San Antonio technology entrepreneur David Spencer is the Managing General Partner. Spencer served as the first chairman of Texas’ Emerging Technology Fund.

Funds under Development

Texas Research and Technology Foundation Venture Fund

In 2005, the Texas Research and Technology Foundation (TRTF) was looking to establish an early-stage venture fund for the bioscience industry. SATAI was said to be working in tandem with local angel investors and TRTF to create that seed fund.

Targeted Technology Fund I

Targeted Technology Ventures LLC, a local biotechnology and medical device company, planned to launch a new venture capital fund in 2008 that promises to expand the financing options for local start-up companies in the health care market. The fund would primarily concentrate on investments in San Antonio, as well as in Birmingham and Denver. The fund would seek out investment opportunities in the medical device, diagnostic, biotechnology and pharmaceutical markets.

The fund is targeted at \$50 million and will focus on medical device, diagnostics, biotechnology, pharmacology, and drug delivery firms. Initial investments in companies will be in the \$500,000 to \$1.5 million range as part of a first round of institutional investment. Typically, this first round of investment follows seed investments made by company founders, their friends and family, or angel investors. The fund would be managed by California-based Incyte Venture Partners LLC.¹⁸

A member of the Project Team met with a member of Targeted Technology Fund I in October 2008.

Industry Networks

The Project Team found that there are several national and statewide networks and conferences that support development and growth of the biomedical and biotechnology industries nationally and in Texas.

- Networks include: Biotechnology Industry Organization, TexasLifeScience.com, Texas Healthcare and Bioscience Institute, and BioHouston.
- Biotechnology Industry Organization (BIO) is the world’s largest biotechnology organization, providing advocacy, business development and communications services for more than 1,150 members worldwide. BIO is active in Texas.

¹⁸

http://www.bizjournals.com/sanantonio/stories/2008/04/07/story1.html?ana=from_rss



- There are several networks that are based in San Antonio, including SATAI, the Texas Research and Technology Foundation, San Antonio-Austin Life Sciences Association (SALSA), and BioMed SA. San Antonio also has an active and growing local chapter of the Healthcare Businesswomen’s Association. These organizations support the growth of biomedical and technology-based industry sectors.

Overview of the High Technology Industry

The information that follows provides an overview of the high technology industry nationally, in Texas, and in San Antonio.

Industry Size, Venture Capital Activity to Industry and Growth Projections

- U.S. high technology venture capital totaled \$12.7 billion in 2006. Venture capital investments in technology increased by 6 percent in 2007, adding \$945 million for a total spending of \$16.9 billion, accounting for 58 percent of all venture investments. R&D investments also increased, up 6 percent based on 2005 figures, most recent data available, reaching \$74.9 billion and taking 37 percent of the U.S. total.¹⁹
- The U.S. high technology sector added jobs for the third year in a row (2005, 2006, 2007), although this growth slowed in 2007.
- Texas remains the second-largest “cyber state” by technology employment, behind California and ahead of New York.²⁰
- In 2007, Texas ranked third in high technology venture capital investments for a total of \$1.42 billion. This represented a slight decrease, down two percent from 1.45 billion in 2006. Texas ranked fifth nationwide in research and development expenditures of \$14.4 billion in 2004.²¹

San Antonio

- San Antonio’s technology industry is having difficulty finding venture capitalists to invest in their ideas and initiatives. Of the \$30 billion in venture capital funds that will be committed nationwide, San Antonio will see about \$40 million of those funds.

Venture Capital Funds Targeting High Technology

The Project Team found that there are many venture capital funds targeting high technology nationally. Below is a list of venture capital funds active in Texas. It appears that these funds have very limited, if any, activity in San Antonio.

Aegis Texas Venture Fund

¹⁹ “U.S. High-Tech Industry ‘Good, Not Great’; N.C. Jobs Increase,” Localtechwire.com (April 2, 2008), www.localtechwire.com/business/local_tech_wire/news/story/2665377/.

²⁰ Clare Freeman, “Texas’ Tech Job Market Experiences Substantial Growth,” AeA (April 2, 2008), http://www.aeanet.org/pressroom/prjj_cs2008_texas.asp

²¹ “Cyberstates 2008: A Complete State-by-State Overview of the High-Technology Industry,” AeA, http://www.aeanet.org/pressroom/prjj_cs2008_texas.asp



The Aegis Texas Venture Fund is focused on early-stage investing within the Texas marketplace. The Fund's purpose is to encourage and assist in the creation, development, and expansion of Texas qualified businesses, emphasizing viable small business enterprises which traditionally have had difficulty in attracting institutional venture capital, and to expand employment opportunities in Texas, thereby promoting the growth of the state's economy. The Fund seeks to invest \$500,000 to \$5,000,000 through mezzanine loans and equity participation in early stage businesses.

Austin Ventures Fund

As of September 2008, Austin Ventures, which has been the dominant source of money for central Texas startups, is in the process of closing on the new funds. The main fund is expected to be about \$600 million, according to a person familiar with the deal. It also has raised a separate fund of about \$300 million that will be invested along with the main fund. The closing is expected to be completed by the fall of 2008.

Over its 24 years, Austin Ventures has invested nearly \$1.3 billion in central Texas companies and helped establish Austin as a high technology center. The main fund will be the 10th raised by Austin Ventures since 1984. It has \$3 billion under management overall, making it the largest venture firm in Texas.

STARTech Funds

STARTech Fund I (\$4 million) and Fund II (\$32 million) have focused essentially on investments in the southwest, primarily Texas. STARTech creates or invests in seed and early-stage technology-based companies primarily in information technology and communications, smart energy systems, technology-enabled health care, and nanotechnology processes and materials.

Hunt Ventures Fund I LP

Dallas-based venture capital firm Hunt Ventures has raised an initial venture fund worth some \$140 million. The fund includes a significant contribution from an unaffiliated institutional investor. A portion of the \$140 million has been earmarked for existing portfolio companies. The remaining capital is available for new and follow-on investments. Hunt Ventures focuses on early stage technology companies in the wireless, digital media, software and services sectors.

Funds under Development

SATAI Venture Fund

Executives with the San Antonio Technology Accelerator Initiative (SATAI) are working to launch a venture capital fund for new high technology companies on the fast track. The proposed fund, says Jim Poage, President and CEO of SATAI, would not only boost the high technology community in San Antonio but also help to secure the organization's financial future, which has to date relied primarily on the City of San Antonio for its funding.

Industry Networks

A number of high technology networks exist across the U.S. and in Texas, in order to promote high technology.



- Networks include: AeA (national), Information Technology Association of America (ITAA – national), AeA Texas Council, STARTech, and SATAI (Texas) [add others].
- These networks provide research, data, information, and reports on the industry. In Texas, AeA is the voice of the high technology industries and is looked to by policymakers for guidance as they craft legislation to help advance the Texas economy.

Overview of Green/Clean Technology Industries

Below is information on the green/clean technology industries across the U.S., in Texas, and in San Antonio.

Industry Size, Venture Capital Activity to Industry and Growth Projections

- The emergence of markets for clean technology over the past 10 years has been driven by a confluence of economic trends, technological advancements, and resource constraints that position clean technologies for sustained growth.
- In 2006, clean technology became the third largest North American venture capital investment category (11% of all investments) behind software and biotechnology.²²
- The North American clean technology industry is estimated to grow at a 25% annual rate over the next four years.²³
- As recently as 2004, the clean technology sector accounted for less than 2 percent of all venture investments. By 2007, that had grown to 7.4 percent.²⁴
- Total North American venture capital invested in clean technology companies reached \$2.9 billion in 2006, an increase of 78% over the \$1.6 billion invested in 2005.²⁵
- For every \$100 million in venture investments, on average 2,700 new jobs are generated. Between 2007 and 2010, 400,000 to 500,000 new jobs will be created in this field.²⁶
- Texas produces and consumes more electricity than any other state.²⁷
- Texas has been the nation's top installer of wind power technology for three consecutive years and is ranked second for potential in wind power manufacturing.²⁸ While wind power capacity grew by 43 percent in the United States last year, it surged by 57 percent in Texas.²⁹
- A 2005 study titled "Solar PV Development: Location of Economic Activity" estimated that Texas could gain about 13 percent of the country's new jobs and

²² "CleanTech Venture Capital: How Public Policy Has Stimulated Private Investment"

²³ "CleanTech Venture Capital: How Public Policy Has Stimulated Private Investment"

²⁴ Robert Celaschi, "Clean Tech Sector Sees Big Boost in Venture Capital Funding," Sacramento Business Journal (May 16, 2008), <http://sanfrancisco.bizjournals.com/sacramento/stories/2008/05/19/focus2.html>

²⁵ Ibid

²⁶ Ibid

²⁷ Lisa Haidostian, "Green Power Rides the 'Business-Friendly' Range," Earth News (June 2008),

<http://www.earthportal.org/news/?p=1214>

²⁸ Ibid

²⁹ Ibid



investment related to solar photovoltaic technology by 2015, mostly in manufacturing.³⁰

San Antonio

- CPS Energy generates more energy from wind than any other utility and has established a goal of reducing energy consumption by 771 megawatts through energy conservation and energy efficiency.
- There is not much information on venture capital in the green/clean technology industry in San Antonio, though there is evidence of and growing activity and interest in green/clean technology companies in the region.

Venture Capital Funds Targeting Green/Clean Technology

The Project Team found that there are a small but growing number of venture capital funds targeting green/clean technology nationally. However, the Project Team could not find funds targeting green/clean ventures in Texas.

Industry Networks

- There are several national green/clean technology networks, including the Cleantech Network, Clean Edge, and Clean Technology and Sustainable Industries Organization (CTSI). These groups hold large annual conferences, as well as sponsor smaller events around the country and world.
- Within Texas, the CleanTX Forum promotes entrepreneurship in clean technology and renewable energy in Texas.
- Two of the largest annual conferences are the Cleantech Forum (Cleantech Network) and Clean Tech Investor Summit (Clean Edge).
- The annual Energy and Clean Technology Venture Forum provides an opportunity for emerging green/clean technology companies to showcase their new ventures to investors, venture capitalists, and other business leaders.
- Various media, news sites, and websites report on clean technology, including Greentech Media, cleantechPRwire, CNET Green Tech, and Matter Network.
- In San Antonio, the Clean Tech Forum is a recently formed network to promote clean tech in San Antonio.

Texas Incentives for Biomedical, Biotechnology, High Technology, Green/Clean Technology Industries

There are a number of entities within the state of Texas (state agencies, universities, nonprofit organizations) that are promoting biomedical, biotechnology, high technology, and green/clean technology through research, advocacy, policies, technical assistance, and incentives. Leading agencies and programs include:

- 1) The Texas State Energy Conservation Office (SECO): SECO administers a variety of energy efficiency and renewable energy programs to reduce energy cost and consumption in the institutional, industrial, transportation, and residential sectors

³⁰ Ibid

- throughout the state. Among its programs is the Texas Energy Partnership with Energy Star which implements new energy efficiency requirements in 38 counties.
- 2) The Texas Commission on Environmental Quality (TCEQ): TCEQ is the state's environmental agency. It manages several programs that regulate air quality and support renewable energy solutions.
 - 3) Texas Emerging Technology Fund (ETF): ETF is a \$200 million initiative created by the Texas legislature that provides funding for the development and commercialization of new technology. This fund surfaced frequently in our research and was noted as a highly used source of funding by entrepreneurs in Texas and San Antonio.
 - 4) Texas Enterprise Fund (TEF): This fund provides the state with the ability to respond quickly to opportunities to bring jobs and employers to Texas. This program has been cited as "the most powerful tool in the state's arsenal for attracting and retaining key projects."³¹
 - 5) Texas Biotechnology and Life Science Cluster: This government working group is part of an intensive effort to bolster the state's competitive advantage in six key technology areas, including biotechnology and life sciences, which have been identified as critical to the future economic growth of Texas.
 - 6) Texas Ignition Fund (TIF): In December 2007, the University of Texas System Board of Regents approved and funded a \$2M grant program intended to provide early stage funding for inventions discovered at UT institutions. It is designed to stimulate commercialization of research discoveries at the 15 UT institutions by providing early stage grants for the development and maturation of those discoveries into marketable intellectual property. UT faculty may request, through their institution's technology transfer office, up to \$50k to accelerate the commercial development of a UT invention. TIF proposals are solicited semi-annually; typically in the spring and fall (<http://research.uthscsa.edu/sttm/tif.shtml>).
 - 7) For Faculty at UT San Antonio, UT Health Science Center at San Antonio and 2 other UT System campuses in South Texas: South Texas Technology Management (STTM) has an early stage grant program similar to the UT System's TIF program. It is called "POCsparc", and acronym for 'proof of concept short proposals to accelerate research commercialization'. POCsparc supports short-term, objective-driven projects intended to enhance the commercial potential of UT inventions. POCsparc will award \$10k or \$25k for high-impact, tightly focused projects that can bridge the gap between promising very early stage invention and market-ready innovation. These are typically awarded at an earlier stage than TIF grants and mirror the timing of TIF grants (<http://research.uthscsa.edu/sttm/sparc.shtml>).
 - 8) On the local level, Austin is widely regarded as the center of green/clean technology in Texas, with a clean technology business incubator operating in the city and several efforts focused on clean technology through the University of Texas-Austin.

³¹ Tom Stringer, "Biotech Incentives Help Create Winning Locations," Area Development (April/May 2007), <http://www.areadevelopment.com/specialPub/apr07/biotechIncentives.shtml>

5.2 Primary Research

The Project Team traveled to San Antonio, Texas in late August of 2008 to conduct five days of interviews with leaders in the biotechnology, biomedical, high technology, and green/clean technology industries as well as government leaders. The interviews were organized by the Mayor's Office and were intended to expose the Project Team to leaders in the various sectors in the San Antonio market.

Interviewees

The Project Team held meetings (by telephone and in-person) with the following individuals:

Biomedical/Biotechnology (8 people interviewed)

- Henry Cisneros, founding Chair of BioMed SA, former Secretary of the US Department of Housing and Urban Development and former Mayor of San Antonio
- Seven biomedical and biotechnology entrepreneurs, investors, and tech transfer experts – Ann Stevens, President of BioMed SA; Sean Thompson and Christine Burke, Senior Technology Licensing Associates with South Texas Technology Management (the combined technology transfer office of The University of Texas Health Science Center at San Antonio, The University of Texas at San Antonio, and two other UT System universities in South Texas); York Duncan, President of Texas Research and Technology Foundation; Michael Dwyer, President and CEO of Azaya Therapeutics (and serial entrepreneur in the biotechnology space industry); Fred Dinger III, President and CEO of ENTrigue Surgical (and serial entrepreneur in the medical device industry); and John Kerr, former President, Southwest Foundation for Biomedical Research (and an investor in several San Antonio biomedical startup companies).

High Technology (7 people interviewed)

- James Poage, President and CEO of San Antonio Technology Accelerator Initiative (SATAI), an entrepreneurial training center offered at the University of Texas, San Antonio
- Robert McKinley, Associate Vice President of the Institute for Economic Development at the University of Texas, San Antonio
- Clean Tech Forum (Meeting included members who are tied to high technology) – Michael Burke, founder of Clean Tech Forum and President of MDB Capital Ventures; George Karutz, Jr., Principal of Karutz Flavin Wells Investment Bankers and Managing Partner of Sendero Advisers; Wayne Alexander, Chair of Port of San Antonio and Chair of Southwest Research Institute; Bill Whiting, Investor; G.P. Singh, Investor

Green/Clean Technology (13 people interviewed)

- CPS Energy – Aurora Geis, Chairwoman; Milton B. Lee, General Manager and CEO; Steve Bartley, Deputy General Manager; Bruce Evans, Director Customer Solutions & Delivery



- Clean Tech Forum (San Antonio citizens and potential investors looking to grow the industry in San Antonio) – Michael Burke, founder of Clean Tech Forum and President of MDB Capital Ventures; Raul Rodriguez, Chairman of RMI and former head of North America Development Bank; Michael Bacon, Principal of Bacon Lee & Associates; Carroll Jackson, First Vice President of Merrill Lynch; Shawn P. Daly, Dean, School of Business and Administration, University of the Incarnate Word
- Solar San Antonio – Bill Sinkin, Founder; Bill Barker, Executive Director
- Metropolitan Partnership for Energy – Anita Ledbetter, Executive Director; Stephen Colley, Green Building Coordinator

Government (8 people interviewed)

- City of San Antonio – Phil Hardberger, San Antonio Mayor; Diane Cibrian, City Councilwoman District 8; Larry Zinn, Chief of Staff to the Mayor; A.J. Rodriguez, Deputy City Manager; Richard J. H. Varn, Chief Information Officer; and W. Laurence Doxsey, Environmental Policy Director; Marisol V. Robles, Special Assistant to the Mayor
- Bexar County – Nelson Wolff, County Judge; and David Marquez, Economic Development Director

Chamber (2 people interviewed)

- Greater San Antonio Chamber of Commerce – Richard H. Perez, President/CEO; Liza Gonzalez, Vice President Public Affairs

Real Estate Council (5 people interviewed)

- Real Estate Council of San Antonio – Martha Magnum, Executive Director; Steven Hanan Development Company; Silvia Gangel, SIBA International Commercial Real Estate; Glen (Sam) Mitts, USAA Real Estate Company; Michael Schoenbrun, Cencor Realty Services

Interviews were conducted in order to understand the following:

- 1) The current state of biomedical, biotechnology, high technology, green/clean technology industries in San Antonio
- 2) If there is sufficient biomedical, biotechnology, high technology, green/clean technology activity in San Antonio to warrant the creation of a venture capital fund
- 3) If companies in these industries in San Antonio are getting the capital they need to grow
- 4) How companies in San Antonio obtain growth capital
- 5) What resources can help San Antonio grow these industries
- 6) If venture capital is needed and how much is needed to support the current deal flow

Interview Findings

The Project Team had the following findings after conducting all interviews.

The biomedical and high technology industries in San Antonio are relatively small but growing, while the green/clean technology industry is just getting launched currently.

1) *The biomedical and biotechnology industries in San Antonio are small but growing.*

Various players in the biomedical and biotechnology industries noted that San Antonio has an established biomedical industry that is relatively small but growing in size and prominence.

- Those interviewed estimated that there are approximately 12-15 serial biomedical entrepreneurs in San Antonio. These are individuals who have successfully sold their companies or taken them public and are now running new companies in hopes of replicating their past success. The presence of serial entrepreneurs bodes well for the future of the biomedical and biotechnical industries in San Antonio as their proven track records in developing successful businesses can help to attract additional investors to the area.
- Interviewees commented that these serial entrepreneurs have a strong desire to stay in the area.
- Representatives from the biomedical industry also commented that the San Antonio region has the workforce infrastructure to support future growth. Several noted that many people in San Antonio have strong research and technical capabilities that can support entrepreneurial efforts. Additionally, San Antonio companies have been increasingly successful at attracting individuals to San Antonio with the skills necessary to develop and commercialize medical devices and pharmaceuticals. Once in San Antonio, these individuals who are highly skilled in disciplines such as regulatory processes, new product development, biomedical engineering, licensing, patent law, human resources, finance, etc., like the serial entrepreneurs, desire to stay in the area. The region could benefit from more entrepreneurial activity which would harness these technical skills and encourage these valuable human resources to stay in San Antonio.
- According to interviewees, in San Antonio, two biotechnology specialty areas are experiencing tremendous growth – military medicine and trauma research. The city is home to the San Antonio Military Medical Center (SAMMC), which is slated to become the nation’s leading medical center for military personnel by 2011. A related facility will serve as the hub for training enlisted medical technicians of all services, as well as research. San Antonio is also becoming recognized as one of the nation’s major centers for trauma research and treatment. The National Trauma Institute is being organized in San Antonio by leaders and partners of the city’s three Level I trauma centers, which provide the highest level of care to trauma patients in the region.
- Those interviewed felt that strength in these biotechnology sub sectors provides San Antonio with a competitive advantage and that they will be a generator of entrepreneurial activity and growth in the region.



2) *The high technology sector in San Antonio is small but growing.*

San Antonio's high technology sector is growing.

- The Project Team repeatedly heard that San Antonio is a leader in cyber security technology.
- The high technology representatives that were interviewed stated that there are approximately 10 start-ups in San Antonio in security-related businesses and five serial entrepreneurs in high technology generally and in the security specialty field.
- Given the growing need for cyber security, interviewees feel that this specialty provides San Antonio with a unique market niche.

3) *San Antonio has little green/clean technology activity.*

There was unanimous agreement across the various industry groups interviewed that San Antonio does not have significant green/clean technology deal flow at this time, however there is substantial potential in this sector.

- One high technology investor noted that "there's not a whole lot" in green/clean in the city.
- Another high technology interviewee said that San Antonio "has a lot of catching up to do" in terms of green/clean technology.
- SATAI, a local business incubator, concurred that there are not enough deals in this industry to necessitate a green/clean technology-only venture capital fund in San Antonio.
- CPS Energy is a national leader in wind energy and has established a target of reducing 771 megawatts of energy usage through energy conservation and energy efficiency. CPS Energy also indicated a strong interest in supported distributed solar generation.
- All interviewees saw the opportunity in this sector and hoped to see it grow in San Antonio. In fact a number of people interviewed are working to bring green/clean technology to San Antonio. If they are successful, a Multi-Tech Fund would be a great value to them.

4) *There is significant opportunity for/from technology transfer in San Antonio.*

One of San Antonio's biggest strengths is its strong research institutions which generate technology transfer, including the UT Health Science Center at San Antonio and the University of Texas at San Antonio. Several biomedical businesses noted that there is a new focus among academic institutions, particularly from the University of Texas System, to spin out technology for commercial purposes.

For example, San Antonio's two UT System universities have combined efforts to develop intellectual property through a single technology transfer office, known as South Texas Technology Management (STTM). This unique consortium, which manages the technology transfer activities for UT Pan American and UT Brownsville in the Texas Rio Grande Valley in addition to the two San Antonio institutions, is expected to maximize opportunities for bundling discoveries arising from multiple research labs.

STTM's mission is to provide comprehensive and integrated technology management and development services, using the most effective protection and commercialization strategies to stimulate and capitalize on the intellectual property portfolio at the four UT institutions it serves (www.utsttm.org). A number of San Antonio companies have been founded based on technologies transferred from San Antonio UT institutions including CardioSpectra (recently purchased by Volcano), Osteobiologics (recently purchased by Smith & Nephew), VidaCare (2008 winner of The Wall Street Journal's Annual Innovation Award Competition), Numira Biosciences, Xenotope, Inc., and Xilas Medical, Inc. Although not founded with UT technology, San Antonio based Azaya Therapeutics, Inc. recently closed a deal with STTM for a novel cancer therapeutic discovered at the UT Health Science Center at San Antonio.

In addition to its two UT System universities, San Antonio has multiple resources for tech transfer including the military, Southwest Research Institute, Southwest Foundation for Biomedical Research, Cancer Therapy and Research Center. This focus on transferring technology out of the lab and into the commercial sector is expected to have a tremendous impact on biotechnology, as well as the other emerging industries in San Antonio.

San Antonio has a nascent but growing entrepreneurship infrastructure.

1) The State of Texas has valuable financial resources for companies in emerging industries.

Entrepreneurs noted that the state has valuable resources for small businesses and entrepreneurs in emerging industries. The state's Emerging Technology Fund was noted as a highly utilized resource by entrepreneurs in San Antonio. Interviewees also mentioned that the newly approved Proposition 15, which will fund \$3 billion in cancer research and prevention in Texas over the next decade, stands to benefit San Antonio, which has a core competency in cancer research.

2) Entrepreneurial networks in San Antonio could be strengthened.

There does not appear to be a strong network for entrepreneurs in San Antonio. According to one interviewee, many San Antonio entrepreneurs travel to Austin to network with other entrepreneurs and financiers. SATAI also noted that "there is not a lot of bench strength in small entrepreneurs in San Antonio, but the area does have people with strong technical capabilities" to work in entrepreneurial, emerging technology companies. Many interviewees noted that while entrepreneurial activity in San Antonio has been relatively low historically, it has grown in recent years.

3) Entrepreneur-focused training services exist and could be augmented.

Interviewees commented that business incubators in San Antonio are helpful to entrepreneurs.

- Several cited SATAI as a resource for emerging businesses. One biomedical entrepreneur stated that "there's nothing around like it" and went on to say that it is good, though not perfect.
- Several interviewees also mentioned that efforts are currently underway to create a medical incubator in the South Texas Medical Center to support the growth of

biomedical companies in the region. This suggests that there is may be a need for additional business incubators to support emerging industries in San Antonio.

There is anecdotal evidence that there is money in the San Antonio market for investment but that entrepreneurs in San Antonio have difficulty accessing the funds they need to grow.

1) *One-off investments from individuals appear to be common in San Antonio; however, institutional capital is scarce in the region.*

The general sentiment among interviewees across industries was that there is a lack of systematic risk capital in the region and that this makes it difficult for entrepreneurial firms to grow in San Antonio.

- The high technology group stated that there are local investors in the region who make one-off investments. Though local investors may support one start-up, this does not lead to ongoing investments in similar companies, as decisions are based on personal connections rather than a long-term view of industry growth and performance.
- Interviewees added that part of the reluctance of local investors to invest in emerging industries is their lack of comfort and familiarity with the type of work produced by biotechnology firms, high technology, and green/clean technology firms.
- One entrepreneur indicated that regular investor education led by industry leaders in emerging industries could result in increased angel/venture investment in the region.
- Representatives from the biomedical industry noted that many local investors and high-net-worth individuals have experience with businesses that have tangible resources, such as oil and real estate, rather than those in emerging industries.

2) *Angel investors in San Antonio are active to a limited extent.*

According to SATAI, there is a modest angel investor network in San Antonio. SATAI works with an angel network and presents an average of four deals per quarter to prospective investors. On an ongoing basis, SATAI directs angel- and venture-ready companies to investors, but many of those investors are in Austin. A number of serial biomedical entrepreneurs stated that their core financing need is to get through the “Valley of Death,” the period between laboratory discovery and Phase I clinical trials.

3) *Venture capital is largely non-existent in San Antonio.*

There was unanimous agreement among leaders across industries that venture capital is largely non-existent in San Antonio.

- A leader in the biomedical industry noted that there are three biotechnology venture capital firms in other parts of Texas and that more angel, pre-seed, and seed capital is needed in the San Antonio market.
- Another biomedical interviewee commented that San Antonio would benefit from pooled resources, rather than one-off investments.
- The high technology and biotechnology groups noted that serial entrepreneurs often go outside of San Antonio for their financing needs, which then leads to the

companies relocating outside of San Antonio. They believe that locating venture capital in San Antonio will help the city keep the emerging sector firms it grows.

- One investor felt that the missing ingredient for bringing venture capital to San Antonio is a professional venture capital manager located in the region.

4) *There is great interest in building venture capital funds in San Antonio.*

As previously mentioned, one-off investments by high-net-worth individuals appear to be common, but there is a lack of institutional capital firms making investments in San Antonio.

- Interviewees cited the lack of ongoing investments as an issue because deals are made based on personal connections and without a systematic pooling of resources.
- Interviewees indicated unanimously that there is great interest in developing a fund for the area. Interviewees were realistic about the deal flow in the area and believe that a fund could help the region grow.
- It appears that local investors are eager for a venture capital fund. When the Project Team mentioned that local investors would be needed to finance a portion of any regional venture capital fund, a number of high-net-worth individuals indicated that they could raise up to 20% of the capitalization needed for a Multi-Tech Venture Fund, suggesting that area investors see deal flow potential in the region.

It has been suggested that current market conditions may impact this figure of 20%. However, the Fund Building Team believes that local investors must be deeply invested in the Fund if it is to succeed. One of the key issues to be determined in the proposed Phase I Market Assessment is the true nature of local support from both pension funds and institutional investors, and high net worth individuals.

5) *An appropriate size for a Multi-Tech Fund may be \$100 million and will require significant local and regional participation. Determining the level of local and regional investor support will be a major task of the Phase I Market Assessment.*

In order to determine an appropriate size for a Multi-Tech DBL Fund, the Project Team asked representatives from the high technology and biomedical industries to provide estimates of the current deal flow and size of fund needed in the San Antonio region. The Project Team also spoke with Brooke Private Equity Advisors, the proposed Fund Manager for the Fund, in order to understand what level of capitalization is needed in order for such a fund to be successful.

- A member of the high technology group stated that he receives 2-3 deals per month with requests ranging from \$2–6 million. He went on to say that the size of the fund needed is \$50 million (\$25 million for high technology, \$25 million for biomedical).
- An investor in the biomedical industry estimated San Antonio's biomedical and biotechnology need at \$40-50 million. In order to build a \$75 million fund, the investor suggested that the fund include Austin and Houston, along with San Antonio. Over time, he expected San Antonio demand to grow to \$75 million.
- A technology transfer professional estimated the number of south Texas UT institution-sourced technologies suitable for development into San Antonio area start-up companies at 2 per year with the potential to grow to about 6 per year.

- According to Brooke Private Equity Advisors, which manages a Double Bottom Line biotechnology venture capital fund of funds for St. Louis (see Section 8), the target size for a regional Multi-Tech Venture Capital Fund should be \$100 million. At that level of capitalization, the Fund would be able to support local staff and create more of the first and second bottom line impacts desired by the City and region. Given the current deal volume in San Antonio, Brooke Private Equity Advisors would anticipate a regional and statewide footprint in order to justify the \$100 million target, with the concurrent ability to invest in East and West Coast venture firms to attract them to San Antonio and Texas, with the specific goal of building technology capacity in all multi-tech sectors in San Antonio and its surrounding region. This is precisely the model that has worked so successfully in St. Louis.

A venture fund located in San Antonio that is willing to partner with venture firms in Texas and on the East/West Coasts will attract more venture capital to San Antonio.

Though interviewees saw the need to create a multi-city venture fund, they were concerned about San Antonio companies being overshadowed by firms in other markets. The group agreed that locating the fund manager in San Antonio would address this concern if a multi-city fund is developed. National experience shows that a Multi-Tech Fund headquartered in San Antonio and managed by a venture capitalist with a strong track record can partner with venture capitalists in other Texas cities and on the coasts in ways that attract a net positive flow of capital to the San Antonio area. (See Section 8, the Vectis Funds I and II.) The Fund structure proposed in Section 7 of this report uses this national/local model of management.

Based upon the data and interview findings presented, the Project Team developed Multi-Tech Fund recommendations that are provided in Section 6.



6.0 RECOMMENDATIONS

Based upon the data research and interview findings in Section 5, the Project Team is proposing the following recommendations.

- 1) **San Antonio should pursue a Multi-Tech Venture Fund.** The findings indicate that there is a market for a Multi-Tech Venture Fund in San Antonio. Before a fund can be launched, a Market Assessment (including potential deal flow, fund structuring, and investor identification) should be conducted to ensure the Fund's viability.
- 2) **The Fund should be structured to allow for biomedical, biotechnology, high technology, and green/clean technology investments.** This flexibility will help make sure that the capital raised can be deployed and that a variety of emerging industries will be able to grow (and adapt) in the area.
- 3) **The Fund should be structured to provide early-, mid- or late-stage venture funds and, possibly, seed capital as well.** A Market Assessment will determine capital needs in the area. The Fund can be adapted to fit the needs that are identified. Additionally, depending upon findings from the Market Assessment, the Fund may be structured as a direct investment fund, a fund of funds, or a mixture of both. If the Fund is structured as a mixture of direct and fund of fund investments, the appropriate allocations to each area will be determined in the Market Assessment.
- 4) **The Fund should have a footprint larger than San Antonio.** By expanding the Fund's footprint beyond San Antonio to include Austin, Houston, and other areas within Texas, deal flow and investor confidence is likely to be stronger and more venture capital will be attracted to San Antonio through the partnership with venture capitalists in other regions. The result will be a larger pool of venture capital for San Antonio and greater risk spreading.
- 5) **The size of this regional fund should be \$100 million.** Based on an initial assessment of the current deal flow in the targeted industries as well as conversations with fund managers of similar funds, an appropriate size for a regional multi-city, multi-tech fund would be \$100 million.
- 6) **The Fund should hire a professional fund manager with venture capital ties to the East and West coasts.** Venture capital funds have traditionally been concentrated in the East and West coasts. Therefore, hiring a professional fund manager with venture capital ties to the coasts will draw much-needed additional venture capital to the area. It will also put San Antonio on the national "venture capital map," thereby drawing attention and resources to the area.
- 7) **The Fund Manager should be Brooke Private Equity Advisors and the Fund should have a local office in San Antonio.** Brooke Private Equity has a strong track record in all the multi-technology areas to be addressed by a San Antonio Multi-Tech Fund. (Brooke Private Equity Advisors and its principals are described in Appendix A.) During the Market Assessment, the Fund Building Team, with the



support of the Fund Manager, will determine the requirements for a local office in San Antonio and its staffing.

- 8) **A minimum of 20% of the Fund should come from local investors.** Securing local investor support will anchor the Fund in San Antonio and encourage confidence among investors outside San Antonio. The demonstration of strong local investor support will be essential to attracting national investors given the current national economic climate and the need to raise \$100 million.



7.0 FUND BUILDING WORK PLAN

This section describes the key parties involved in building a San Antonio Multi-Tech Venture Fund, the Fund Building Work Plan, and the cost of developing such a fund.

7.1 Key Parties Involved in a Venture Fund

In building a Multi-Tech Venture Fund, there are four key parties involved:

- 1) **The Fund Builder/DBL Manager** – The Fund Builder completes a Market Assessment for the Fund, takes the lead in capitalizing the Fund, and, in conjunction with the Fund Manager, implements Fund operations. The Fund Builder receives funding to complete the Market Assessment for the Fund, and leads the Market Assessment effort with the support of the Fund Manager.

Once the Fund is capitalized, the Fund Builder becomes the DBL Manager and plays an on-going role in the Fund. The DBL Manager assists the Fund Manager in the Fund's operations, helping source deals, assisting in the Fund's economic, social, and environmental performance, and providing feedback to investors on the Fund's economic, social and/or environmental impacts. The DBL Manager receives a portion of the management fee and carried interest of the Fund in exchange for its services once the Fund is in operation.

It is proposed that Strategic Development Solutions, Sustainable Systems, and Economic Innovation International, Inc. be the Fund Building Team (i.e. the Fund Builder/DBL Manager) responsible for building and capitalizing the Fund. As discussed in Section 3, the three firms have over 80 years combined experience in special purpose Fund Building and have played a central role in the emergence of the \$20 billion Double Bottom Line fund industry during the last 10 years. They have built more than 30 venture funds in 19 states and four countries overseas in the last 30 years.

- 2) **The Fund Manager** – The Fund Manager is the professional organization that will work with the Fund Builder to design and build the Fund, manage the Fund, assist with capitalization, and, once the Fund is capitalized, make all of the final investment decisions. The Fund Manager also advises the companies in which the Fund invests in order to enhance company performance. The Fund Manager reports financial returns to investors. The Fund Manager receives the bulk of the management fee and a portion of the carried interest of the Fund in exchange for these services.

It is proposed that Brooke Private Equity Advisors be the Fund Manager for the Fund. Brooke Private Equity Advisors is a private equity management firm that provides investment and advisory services to institutions and high net worth families regarding all aspects of participating in the complex world of private equity and venture capital investing. Brooke Private Equity Advisors is led by Peter and John Brooke. Peter Brooke is nationally recognized as one of the pioneer leaders in the growth and development of the venture capital industry in this country. He is also



recognized as the founder of the global venture capital industry. John Brooke continues the family history of innovative venture fund development in this country and overseas. Peter and John Brooke created Brooke Private Equity Advisors to continue their long history of playing a strategic role in the development of emerging markets for venture capital in industries, sectors and sections of the nation and world that present new opportunities for venture investing.

Brooke Private Equity meets the ideal of a Fund Manager for the San Antonio Multi-Tech Fund because of its strong track record in all the technology areas to be included in the San Antonio Multi-Tech Fund—biotechnology, all areas of the life sciences and medical devices, as well as information and computer technology and, very importantly, green tech and clean tech.

Brooke Private Equity and its founding principals are internationally known for their global and domestic leadership in venture capital and emerging market development, and are well known among their peers on the East and West Coasts. (Detailed information on Brooke Private Equity Advisors and the firm’s venture capital leadership can be found in Appendix A.

- 3) **Investors** – Investors in the Fund will include institutional investors (banks, insurance companies, pension funds, foundations, university endowments, and corporations) as well as individual high-net-worth investors. Because of the role of the Fund Building Team in building the national Double Bottom Line private equity venture capital and real estate investment industry over the last decade, the Fund Building Team brings an established base of institutional investors who have become comfortable with the success both First and Second Bottom Lines in Double Bottom Line funds. Thus, both the Fund Builder and the Fund Manager will have relationships with investors that they will access in order to capitalize the Fund.

At least 20% of the Fund should be capitalized by San Antonio regional investors to demonstrate regional support for the Fund and anchor the Fund in San Antonio.

- 4) **Regional Advisory Committee** – A Regional Advisory Committee should be established to advise and assist the Fund Builder and Fund Manager as they structure the Fund, raise the capital, and source the deals. The Regional Advisory Committee will continue to play this advisory role once the Fund is operational. The Regional Advisory Committee should consist of people with industry and community knowledge, substantial financial acumen, and/or interest in investing in the Fund.

7.2 Work Plan

Based on previous experience in building venture capital funds, the Project Team has divided the Fund Building Process into three basic phases of work, the general features of which are outlined below.



Phase 1: Market Assessment

Undertaking a Market Assessment is the first step in the fund building process. During this process, the Fund Builder, with the support and engagement of the Fund Manager, and in association with the Regional Advisory Committee, will:

- Define the parameters of the Fund.
- Identify a pipeline of potential deals.
- Assess potential investors and establish, where possible, "soft circle" investor commitments to the Fund, especially from a strong local investor base.
- Develop the business model for the Fund.
- Produce an initial Term Sheet for the Fund.
- Put together a Report that summarizes the results of the Market Assessment, making recommendations as to the feasibility of proceeding with the Fund, especially in light of current market realities and local and national investor interest.

The Conceptual Framework found in the Appendix B, will be used to guide completion of the various aspects of the Market Assessment. The nine topics of the Market Assessment are detailed below:

- 1) *Demand Assessment.* The Fund Builder, with the support of the Fund Manager, will examine the San Antonio market to assess the level of venture capital demand, as well as the institutions (such as universities, incubators, etc.) that could feed entrepreneurial growth in the market. The Fund Builder and Fund Manager, will also talk with national and Texas venture capitalists, serial entrepreneurs, professional networks, local investor networks, incubator program officers, lawyers involved in venture capital/entrepreneurial finance activity, and other players in this space in order to assess the level of demand for venture capital dollars. The Fund Builder, with the input of the Fund Manager, will also produce a less detailed Demand Assessment for Austin, Houston, and other areas of Texas.
- 2) *Supply Assessment.* The Fund Builder, with the support of the Fund Manager, will assess the available supply of angel and seed capital as well as early and later stage venture capital in order to understand both the availability of each of these essential sources in the venture capital food chain, but also to understand the capital market imperfections affecting innovative entrepreneurship in the region and the barriers to each of these sources in San Antonio and Texas. This supply assessment will employ Figure 1 in the Conceptual Framework found in the Appendix B, to graph and evaluate the available sources of seed and venture capital supply in San Antonio.
- 3) *Entrepreneur Barrier Assessment.* This assessment will provide an understanding of the specific challenges entrepreneurs in San Antonio, Austin, Houston, and other areas of Texas are facing. This way, the Fund Builder, which will lead the assessment with the support of the Fund Manager, and the Fund Manager will understand if the needs are purely capital based or if other tools are needed to serve entrepreneurs in the market.
- 4) *Initial Deal Identification.* In order to raise a venture capital fund, the Fund Builder, with the support of the Fund Manager, must identify a number of venture fundable projects



- in the Fund's footprint. Investors will need to see a certain level of entrepreneurial activity and deal potential before they will consider the Fund and eventually commit capital. If the Fund Builder and Fund Manager can find a sufficient level of deal flow, it is very likely that it will be possible to capitalize the Fund.
- 5) *Parameters of the Fund.* The structure and investment parameters of the Fund are critical elements that can lead directly to its success or failure. The Fund Builder and Fund Manager, in association with the Regional Advisory Committee, will define and formulate the key characteristics of the Fund (focus of the fund; size of the fund; footprint of fund; fund business model including direct investment or fund of funds, and if a combination—the percentages of direct investment, investment in funds in Texas, and investment in national funds committed to investing in ventures that increase the growth of technology industries in San Antonio and its region; type of investments including early, mid, and later stage venture capital and, perhaps, seed and other forms; risk underwriting criteria; investment returns; social impact criteria; etc.). Using this information, the Fund Builder will develop an initial Term Sheet for the Fund.
 - 6) *Nature of a Local Office and Local Staffing for the Fund.* The proposed Fund Manager and its proposed Fund Building Partner are committed to the presence of a local office with local staffing. The Phase I Feasibility Study will determine the exact requirements of this office, and the process for meeting those requirements.
 - 7) *Identification of Investors.* The universe of potential investors for the Fund will be identified by the Fund Builder, with the support of the Fund Manager. Preliminary conversations with investors will be held to identify capital fundraising potential and to "soft circle" lead investors. In the course of these conversations, the parameters of the Fund may evolve and the investors, many of whom are well known to the Fund Builder and Fund Manager, will be able to participate in deciding the nature and structure of the Fund. This way, when the Fund goes to market for capitalization, there are no fundamental flaws that will deter investment.

The identification of investors includes a review of local investors. The goal is to build a Fund of \$100 million. As many other funds built by both the proposed Fund Builder and the Fund Manager have proven, the key to attracting national investors is to have an initial strong local investor base. One of the key tasks of the Phase I Market Assessment will be to determine whether that strong local investor base exists from institutional investors such as local pension funds, and high net worth individuals.

- 8) *Business Model for the Fund.* It is critical to develop a Business Model, which is a mini-business plan, for the Fund. The Business Model will focus on building the Fund, supporting all the related post-capitalization Fund activities, and initiating future funds. This Business Model will detail the mission, governance, operations, and budget for the Fund. The Fund Builder will prepare the business model, with the support and input of the Fund Manager.
- 9) *Market Assessment Report.* The Fund Builder will prepare the Market Assessment Report, which will include the results of items one through eight immediately above. The Market Assessment Report will provide recommendations for how the Fund should be structured, built, and operated in a way that is successful financially, socially and environmentally. Laying the groundwork early is important because a successful Fund I



will lead to Fund II. The Market Assessment Report will conclude with a recommendation as to the viability of the Fund, given current market conditions.

Assuming that the Fund is found to be viable, activity on Phase 2 will commence.

Phase 2: Fund Capitalization

Phase 2 focuses on developing and implementing the Fund capitalization strategy. Prior to going to market, the Fund Builder and Fund Manager will collaborate to develop Fund marketing material (such as a Fund pitch book) and legal documents. Targeted investors will be approached by the Fund Builder and Fund Manager, who will present the investment opportunity and get commitments.

Phase 3: Fund Operations

Phase 3 consists of day-to-day, on-going Fund operations once the Fund has been capitalized. During this phase, the Fund Manager assesses investment opportunities, deploys capital to firms, and provides on-going management of Fund investments.

The DBL Manager (formerly the Fund Builder) will continue to play an active role in the Fund by performing the following activities:

- Assisting with on-going deal-flow pipeline.
- Assessing the economic, social, and/or environmental impacts of potential Fund investments.
- Suggesting ways to improve the economic, social and/or environmental impacts of Fund investments.
- Reporting to investors on economic, social and/or environmental impacts of Fund investments.
- Making recommendations for continuous improvement in terms of both First and Second Bottom Line outcomes of the Fund.

7.3 Timing and Costs for the Development of a Multi-Tech Venture Fund

The timing associated with the three phases in the development of a Multi-Tech Venture Fund is projected to be as follows:

- Phase 1: Market Assessment and Fund Business Model – Months 1-4
- Phase 2: Fund Capitalization – Months 5-8 Legal Document and Marketing Preparation (pre-capitalization activities); Months 9-18 Fundraising to a First Close (Timing Depends on Market Conditions)
- Phase 3: Operations of the Fund – On-Going for the 10 Year Life of the Fund



Costs for development of a Multi-Tech Venture Fund are:

- Phase 1: Total fee of \$75,000, paid over 4 months.
- Phases 2 & 3: Compensation through the management fee and a share of carried interest of the Fund. Fund Building Team and Fund Manager costs for building the fund, up to \$600,000, may be reimbursed by investors at the Fund's first close.



8.0 DOUBLE BOTTOM LINE FUND BUILDING MODELS

Double Bottom Line Funds are funds that pursue one or more special Second Bottom Line objectives in addition to market rate financial returns (the First Bottom Line). These special Second Bottom Line objectives can take many forms, including:

- Stimulating economic development in one or more industry sectors and/or in low- and moderate-income neighborhoods.
- Generating Community Reinvestment Act (CRA) credit for bank investors.
- Producing quality jobs for regional and/or low- and moderate-income residents.
- Building businesses with very positive environmental performance.
- Encouraging businesses with strong community engagement programs.

In the case of a San Antonio Multi-Tech Fund, the most important special Second Bottom Line objective is economic development. Such a fund would focus on stimulating the growth of the bio-tech, high-tech, and clean/green tech industries in the San Antonio region. If bank investors are sought as investors in a San Antonio Multi-Tech Fund, then CRA credit may also need to be included a Second Bottom Line criterion. Other Second Bottom Line objectives for the Fund may include job creation as well as environmental and community performance.

The special Second Bottom Line objectives of a San Antonio Multi-Tech Fund will be determined by agreement of the Fund Builder, the Fund Manager, the Investors, and the Regional Advisory Committee.

According to the theory of Double Bottom Line funds, the two Bottom Lines do not detract from each other, but rather they enhance each other. Experience has demonstrated that this is the case.

Information is provided below about St. Louis Vectis Funds I and II and Bay Area Equity Fund, three established Double Bottom Line venture capital funds that serve as partial models for a San Antonio Multi-Tech Venture Fund. The Project Team is associated with the building and on-going operations of each of these funds, which were created as market rate venture capital funds that also have the social purpose of providing capital to entrepreneurs in a particular geography. Additionally, a complete list of the 28 other seed and early stage venture capital funds, later stage and mezzanine funds, and technology commercialization funds built by members of the Fund Building Team is provided at the end of Section 8.0.

8.1 St. Louis Vectis Funds I and II

In 2002, Economic Innovation International, Inc. was contacted by Washington University of St. Louis, the Danforth Foundation and the McDonnell Foundation which were concerned that the powerful biomedical research and biotechnology emerging from St. Louis institutions in both the human and plant genomes was not translating into successful, large, resident biomedical and biotech companies that could create long term economic vitality in the region.

The City of St. Louis has many top rate research institutions, led by Washington University (generally ranked with Harvard and Johns Hopkins as one of the three top medical research centers in the United States) and Monsanto. Fueled by spin-offs out of these two major centers and a number of other universities and research institutions, the region was seeding the early stage growth of venture fundable companies.

However, St. Louis lacked sufficient venture capital institutions of national reach and scope capable of investing later stage capital to grow locally the emerging companies it was initially seeding. As a result, many of the firms that were created in St. Louis were forced to relocate to the East and West coasts in order to obtain their second, third and subsequent rounds of venture funding.

Wishing to end this trend and keep the positive economic impact of the City's emerging businesses for itself, the City of St. Louis commissioned a study that then led to the St. Louis Vectis Fund. The three institutions that underwrote the study became key lead investors to seed the first \$45 million of what became \$81 million Vectis Fund I. Brooke Private Equity Advisors, led by Peter and John Brooke, long known to Economic Innovation International, Inc., agreed to manage the Fund. Peter Brooke is nationally recognized as one of the pioneer leaders in the growth and development of the venture capital industry, in this country and the founder of the global venture capital industry. John Brooke continues the family history of innovative venture fund development in this country and overseas.

The Vectis Fund I:

- *Launch Date:* 2004
- *Target Investments:* Dedicated strategic life science companies born in St. Louis from biomedical and biotechnology originating in St. Louis.
- *Fund Location:* St. Louis, Missouri and Boston to draw national venture capital to St. Louis
- *Fund Manager:* Brooke Private Equity Advisors
- *Fund Size:* \$81 million
- *Fund Structure:* The St. Louis Vectis Fund I is a Fund of Funds. This means that the Fund invests with local venture capital funds to grow those funds in their capacity to serve local market early and later stage venture capital needs. To do this, the Fund seeks to partner strategically with well known East and West Coast venture firms specializing in biomedical and biotechnology in order to attract those investors to the St. Louis market.
- *Term of Fund:* 10 years
- *Target Returns:* Top quartile, industry and sector returns
- *Investments Made:* A range of biomedical, medical instrumentation and biotechnology firms in both human and plant genomes.
- *Associated Impacts on Community:* Job and wealth creation in the St. Louis medical research corridor; anchoring of potential major new employers in the St. Louis



region who would otherwise have been forced to move to either the Boston area, the Bay Area, or San Diego.

- *Financial Returns:* Top quartile for the Fund's vintage year.
- *Additional Information:* The success of Vectis I has now led to the creation of Vectis II.

The Vectis Fund II:

- *Launch Date:* First \$65 million close in 2008, total target of \$100 million
- *Target Investments:* Dedicated later stage strategic life science companies born in St. Louis from biomedical and biotechnology originating in St. Louis.
- *Fund Location:* St. Louis, Missouri
- *Fund Manager:* Brooke Private Equity Advisors in partnership with a new local partner, Stiefel Nicholas.
- *Fund Size:* \$100 million, of which a first close of \$65 million has already taken place.
- *Fund Structure:* The St. Louis Vectis Fund II is a Fund of Funds again designed to invest with local venture capital funds to grow their capacity and to partner strategically with well known East and West Coast venture firms specializing in biomedical and biotechnology in order to attract those investors to the St. Louis market.
- *Term of Fund:* 10 years
- *Target Returns:* Top quartile, industry and sector returns
- *Investments Made:* Just beginning to invest. This Fund will move to later stages of the venture capital food chain because of the impact on the St. Louis market of Fund I.
- *Associated Impacts on Community:* Additional job and wealth creation in the St. Louis medical research corridor; continued growing and anchoring of new employers in the St. Louis region who would otherwise have been forced to move to the East or West Coast.
- *Additional Information:* Vectis Fund II illustrates the history of funds supported by the Fund Building Team. The success of the first Fund leads to a larger and more powerful second Fund.

8.2 Bay Area Equity Fund

The Bay Area Equity Fund is a Double Bottom Line venture fund whose goals are to achieve top tier venture capital financial returns and to assist portfolio companies to deliver economic, social, and environmental returns to the greater San Francisco Bay Area region.

The Bay Area Equity Fund is one of the funds in the Bay Area Family of Funds, a Double Bottom Line Initiative sponsored by the Bay Area Council, the premier Bay Area business civic



organization. Sustainable Systems has served as lead consultant to the Bay Area Council for the Bay Area Family of Funds since the beginning of the Initiative in 1998.

At inception, the Bay Area Equity Fund was managed by JPMorgan H&Q, but the investment manager was subsequently spun out. The investment manager is now known as DBL Investors. The Bay Area Equity Fund initially was focused in the areas of health care/bio tech, high tech/IT/digital media, and specialty consumer. The Fund's Double Bottom Line orientation led it to become an early investor in the clean tech space, which has proved very successful for the Fund. The Fund can be seen as a "multi-tech" fund given its broad technology reach.

Bay Area Equity Fund I:

- *Launch Date:* 2004
- *Target Investments:* Multi-Tech Investments – Green/Clean Technology, Health Care/Biotechnology/Biomedical Devices, High Technology/IT/Digital Media
- *Fund Location:* San Francisco, California, with a regional focus
- *Fund Manager:* Initially JPMorgan H&Q, a highly experienced fund manager, and an affiliate of JPMorgan Chase Bank, subsequently spun off as DBL Investors.
- *Fund Size:* \$75 million
- *Fund Structure:* The Fund is a Limited Partnership structured in two-tiers. The first tier, Emerging Growth, invests in later stage private companies that typically need from \$3 million to \$5 million in equity investments. The second tier, Strategic Equity, invests in smaller, earlier stage private companies that need up to \$1 million in equity investments.
- *Term of Fund:* 10 years
- *Financial Returns:* Top quartile returns for the Fund's vintage year
- *Examples of Investments Made:* Clean Tech – PowerLight (since acquired by SunPower), Tesla Motors, BrightSource Energy, and SolarCity; Bio-Tech – XDx, FivePrime, and Labcyte; High-Tech/Digital Media – Pandora, and BenteK; Consumer Products – Revolution Foods, Elephant Pharmacy, and inSpa
- *Associated Impacts on Community:* Companies financed by the Fund are located in or near low- and moderate-income neighborhoods in the Greater San Francisco Bay Area, generating economic activity, jobs, revenue, and taxes for low- and moderate-income areas of the region.
- *Second Bottom Line Programs Address:* Job creation and job quality; regulatory and government relations; environmental stewardship; community engagement; and women in leadership.
- *Follow-On Fund:* The success of the Bay Area Equity Fund has led to a follow-on fund, DBL Equity Fund BAEF II, which is now being capitalized at \$150 million.



8.3 Other Venture Funds Built by the Fund Building Team

In addition to the venture funds discussed above, Economic Innovation International, Inc. has built the following 28 seed and early stage venture capital funds, later stage and mezzanine funds, and technology commercialization funds in 17 states and four countries overseas over the last three decades:

The Polaris Fund of Alaska (1981), Arkansas Capital Corporation (1985), the Arkansas Science & Technology Authority (1985), Connecticut Innovations, Inc. (1988), Enterprise Florida Innovation Partnership (1994), Enterprise Florida Cypress Equity Fund (1994), Indiana Community Business Credit Corporation (1985), Kansas Technology Enterprise Corporation (1986), Kansas Venture Capital, Inc. (1986), Kentucky Science & Technology Council (1987), Louisiana Seed Capital Corporation (1984), Maine Science & Technology Council (1996), Massachusetts Technology Development Corporation (1977), Massachusetts Capital Resource Company (1977), Massachusetts Business Development Corporation (1977), Windpoint Partners LP III of Michigan (1996), Nebraska Heartland Capital Partners (1987), Nevada Development Capital Fund (1996), North Carolina Enterprise Corporation (1989), Oklahoma Center for the Advancement of Science & Technology (1987), Oklahoma Capital Investment Board (1993), Oregon Resource & Technology Development Fund (1984), the Palestine Information and Communications Technology Incubator (2004), Plock Technology Development Center (1993), Puerto Rico Grupo Guayacán Family of Funds (1995), Scottish Enterprise (1996); Virginia Center for Innovative Technology (1996); and the Virginia Economic Development Corporation (1990).

9.0 CONCLUSION

In this Report, the Project Team has detailed its research and findings on the viability of establishing a Multi-Tech Venture Fund focused on investing in biomedical, biotechnology, high technology, and green/clean technology industries in the San Antonio region.

The Project Team found that the greater San Antonio region may be able to support a \$100 million Multi-Tech Venture Fund, given the region’s growing biomedical and biotechnology industries, as well as its cyber security high technology businesses. Though San Antonio’s current economy has relatively little venture fundable green/clean technology activity, a flexible venture capital fund could stimulate and accommodate that sector as it grows in the region. In order to support a \$100 million fund at this time, the Fund footprint will likely include other Texas regions, including Austin and Houston.

The Project Team was successful in identifying a world class Fund Manager, Brooke Private Equity Advisors, interested in serving as the Fund Manager of a San Antonio Multi-Tech Fund.

The Project Team’s proposed Fund Building Work Plan provides a roadmap for the activities to be undertaken in order to complete a Market Assessment, design the Fund, and, eventually, capitalize and run the Fund. If the decision is made to proceed with launching a San Antonio Multi-Tech Fund, then the Strategic Development Solutions, Sustainable Systems, and Economic Innovation International would be honored to transition into the Fund Building Team to guide the launch process, in partnership with Brooke Private Equity Advisors.

The experience of the three examples of Double Bottom Line Venture Funds provided in Section 8 of this report suggests that a Double Bottom Line Venture Fund in San Antonio could (1) attract capital to emerging technology industries in the center of the country and (2) be structured to serve emerging bio-tech, high-tech, and clean/green tech businesses.

If successful, a San Antonio Multi-Tech Fund could contribute to long-term, sustainable, economic growth in San Antonio, while also putting San Antonio on the “venture capital map” of the U.S.

10.0 APPENDICES

APPENDIX A: BROOKE PRIVATE EQUITY ADVISORS

Firm Overview

Brooke Private Equity Advisors (BPEA) is a private equity management firm that provides investment and advisory services to institutions and high net worth families regarding all aspects of participating in the complex world of private equity and venture capital investing.

Founded by industry veteran Mr. Peter A. Brooke and his son Mr. John Brooke, BPEA resides and operates at the very heart of the private equity and venture capital industries. Mr. Peter Brooke is well known as an industry pioneer, having founded both TA Associates and Advent International, along with numerous other firms on a global basis. Mr. Peter Brooke is the founder and chairman of Advent International. Mr. John Brooke has spent the last 20 years involved in all aspects of venture capital and private equity management and investing with Advent International, Park Street Capital and BPEA. Mr. Peter Brooke and Mr. John Brooke are complemented by a seasoned management team who bring strong analytical and execution skills to the partnership.

Advent International

Founded in 1984, Advent International is one of the world's leading global buyout firms, with offices in 15 countries on four continents. The firm focuses on cross-border, strategic restructuring and growth opportunities in five core sectors (Business Services & Financial Services, Retail & Consumer, Technology/Media/Telecoms, Healthcare & Life Sciences, and Industrial), employing a highly active ownership approach to drive earnings improvements in portfolio companies. Since inception, Advent has raised \$24 billion in private equity capital and through its buyout programs has completed more than 250 transactions valued at over \$40 billion in 40 countries.

For more information, visit www.adventinternational.com.

Brooke Private Equity Advisors (BPEA)

BPEA was founded in 2004 by Mr. John Brooke and Mr. Peter A. Brooke.

In addition to its venture capital and private equity services and investment programs for high net worth individuals and families, BPEA directly invests in growth capital financings, minority and majority recapitalizations and select venture capital opportunities. Typically, BPEA participates in a company's first institutional round of investment regardless of the stage of the company's development. BPEA focuses on the following sectors: Business & Financial Services, Retail/Consumer, Healthcare, Technology/Media/Telecom, and Industrial.

BPEA also acts as the fund manager for fund of funds in these industries. In fact, BPEA is the fund manager for the St. Louis Vectis I and II Funds detailed in Section 8 of this report.



BPEA has invested in hundreds of transactions and has extensive relationships with leading private equity and venture capital firms, management teams, entrepreneurs, corporations and financial institutions.

Management Bios

The Principals at BPEA bring a unique blend of industry investment and management experience that allows them to provide their clients with a stable and steady hand in an industry of continuously changing paradigms.

Peter A. Brooke, Chairman and Founder of Brooke Private Equity Advisors and Founder, Boston-based Advent International Corporation and TA Associate

Mr. Peter A. Brooke was educated at Phillips Exeter Academy, Harvard College and Harvard Graduate School of Business Administration. After a brief time in the U.S. Army, he joined the First National Bank of Boston as a loan officer in 1956. While at the bank, he helped form the High Technology Lending Group and began his pioneering work in venture capital investing.

Mr. Peter Brooke left the First National Bank of Boston and became the head of Venture Capital and Special Situation Investing at Bessemer Securities Corporation in 1961. In 1963, he left Bessemer to form a venture capital management company with the partners of Tucker, Anthony & RL Day, a New York Stock Exchange member firm. Three years later, Mr. Peter Brooke became the partner in charge of Tucker Anthony's corporate finance and venture capital departments. In 1968, he formed TA Associates, which has since become one of the largest private equity firms in the United States.

While managing the operations of TA Associates, Mr. Peter Brooke began fostering his interest in the application of venture capital in international markets. In 1973, he co-founded Sofinnova S.A. in Paris, with the French Ministry of Industry and Crédit National. Sofinnova is the European continent's oldest venture capital firm. Following this success, Mr. Peter Brooke played an integral role in the formation of many other leading venture capital firms in Europe, Asia and Latin America.

Mr. Peter Brooke's interest in international venture capital led to the formation of Advent International Corporation in 1984. Advent International is the successor to the international operations of TA Associates, and Mr. Peter Brooke became Advent International's Chairman and Chief Executive Officer upon leaving TA Associates in 1984. Advent International has since become one of the world's most extensive global private equity investment organizations, with 16 offices in North America, Europe, Latin America and Asia, and affiliates in 30 countries worldwide. In 1996, Mr. Peter Brooke retired as Chief Executive Officer of Advent International but remains as its active Chairman.

Mr. Peter Brooke is a former Chairman of the Board of Trustees of the Boston Symphony Orchestra. He was an Overseer of Harvard University and former Trustee of Colgate University, the Eisenhower Exchange Fellowship, the WGBH Educational Foundation and the Middlesex School and is currently a Fellow of the American Academy of Arts and Sciences. Mr. Peter Brooke is a member of the Private Equity Hall of Fame and recipient of



the National Venture Capital Association's Lifetime Achievement in Venture Capital Award and Harvard Business School's Alumni Achievement Award. The Boston Business Journal named Mr. Peter Brooke one of Greater Boston's 100 most influential business people of the 20th century.

Mr. Peter Brooke is a founder of BPEA and the Chairman of the Fund Manager.

John Brooke, Managing Director, Brooke Private Equity Advisors

Mr. John Brooke was educated at Harvard College and Harvard Graduate School of Business Administration.

Mr. John Brooke began his career at Advent International in 1985. He was one of the first employees and its first analyst. While at Advent International, he was responsible for the establishment and development of several operating programs including the analyst and the proactive deal-sourcing programs. Mr. John Brooke worked in all the investment areas of the firm including early stage technology, growth equity and leveraged buyouts, while covering every industry sector including healthcare, industrial, retail, consumer products and technology.

In 1996, Mr. John Brooke moved to Singapore to help integrate the acquisition of Advent International's affiliate in the region, South East Venture Investment Corporation, into Advent International and to reposition the group to execute larger, later-stage transactions. His experience at Advent International covered all aspects of investing, including management of both funds and investor relations.

Upon his return from Asia, Mr. John Brooke joined The Tucker Anthony Private Equity Group (Park Street Capital) and helped establish it as a leading private equity fund-of-funds management company with in excess of \$800 million under management. Park Street Capital manages a series of fund for institutions and families. Mr. John Brooke was responsible for fund access, fund raising, fund oversight and management.

Mr. John Brooke joined with his father, Mr. Peter Brooke to establish BPEA in 2003, and its predecessor fund, the Brooke Family Limited Partnership, in 1995.

Christopher Austen, Managing Director, Brooke Private Equity Advisors

Mr. Christopher Austen was educated at Duke University and Duke University's Fuqua School of Business.

Mr. Austen has a diverse background as an entrepreneur, marketing executive and venture capital investor. During his early career, he specialized in marketing and business development, working with Fortune 500 clients and major advertising firms including BBDO, and Foote, Cone & Belding (FCB) in New York. At these organizations, his work encompassed significant industry analysis and resulted in the strategic positioning, marketing, and launch strategies for numerous successful products.



After receiving his MBA, Mr. Austen joined Southeast Interactive Technology Funds an early-stage IT-focused venture fund based in Research Triangle Park, North Carolina. Active at Southeast from 1998-2003, he played a role in all aspects of venture investing and portfolio management including fundraising, deal sourcing, due diligence, management recruiting and development of exit opportunities. Mr. Austen also represented the Fund on numerous portfolio boards as a Director or Observer.

In 2003, he was recruited by investors to turn-around BuildLinks, Inc., a Web-based collaboration and communication company for the residential building industry. As Buildlinks CEO, Mr. Austen was responsible for day-to-day operations, long-term strategic vision and fundraising. He is credited with turning the company around and re-positioning the company as an industry leader. After successfully recruiting a new management team, Mr. Austen took the role of Chairman in October 2005.

Mr. Austen has supported community organizations and was a Board member of the North Carolina Council for Entrepreneurial Development, the North Carolina Technology Association and the Triangle Community Foundation's Entrepreneur's Partnership Venture Fund.



APPENDIX B: CONCEPTUAL FRAMEWORK

In this section, the Project Team provides a framework that it has employed for many decades to analyze the availability of capital in a market. The conceptual framework provides a way of understanding barriers confronting high growth potential enterprises in accessing venture capital financing. From this discussion, it is possible to evaluate venture capital financing activity in San Antonio and, more specifically, the need for venture capital in the San Antonio market.

Understanding Barriers to Efficient Capital Markets

As radical technological change rapidly removes barriers impeding a single 24/7/365 continuous global marketplace, all world markets are becoming increasingly more efficient by the moment.

- Human capital is the most important factor of production. Labor, on average, represents more than 10 times the cost of financial capital. Today, global firms can search global locations for the highest quality labor market at the lowest price, increasingly moving goods and services from one location to another electronically as well as physically.
- Land and infrastructure capital are equally available on a global basis.
- Financial capital is the most fluid capital of all, ceaselessly circling the globe on electrons and photons at the speed of light. Until recently, North American financial markets have been the most efficient in the world, constantly innovating new products and new services to remove imperfections in the marketplace. Just as the world is overtaking the efficiency of North American production in goods markets, global capital markets especially in Europe and Asia, and now the Gulf, are increasingly becoming more efficient than North American capital markets.

Despite great increases in the efficiency of all these global markets, all markets for land, labor, and financial capital are managed by people, and people are riddled with imperfect judgment. In spite of the fact that we are witnessing the most perfect goods and financial markets the world has ever seen, these markets continue to suffer from serious market imperfections, as we have seen most recently in melt-down in investment banking and some aspects of the whole financial services industry, caused largely by sub-prime mortgages and their securitization. As Pogo noted, “we have met the enemy, and it is us.” Different judgments of risk make horse races and financial markets.

The imperfections in land, labor, and consumer markets, and the accompanying imperfections in the flow of capital to support the development of these markets, can be systematically analyzed as a set of identifiable market imperfections:

- Insufficient risk pricing, pooling and spreading mechanisms
- High information and transaction costs
- Market prejudice
- Insufficient market competition



- Market-distorting government policies

These market imperfections create powerful deterrents to private sector investment in the real goods markets of under-appreciated labor, land and consumer markets, as well as in the flow of financial capital to firms.

Because this study is concerned with whether or not there is sufficient supply of venture capital in San Antonio, this analysis will focus on imperfections in the private equity financial markets.

We can state clearly what ideal financial markets are: financial markets operate at their best when capital flows from all available suppliers to all demanders at a cost and under terms that most completely reflect the relative risk of an investment. That is, there is a “risk-adjusted rate of return.” The most vivid way to graph an efficient market is by means of the following risk-return chart:

Figure 1 Different Sources of Capital on the Risk-Reward Frontier

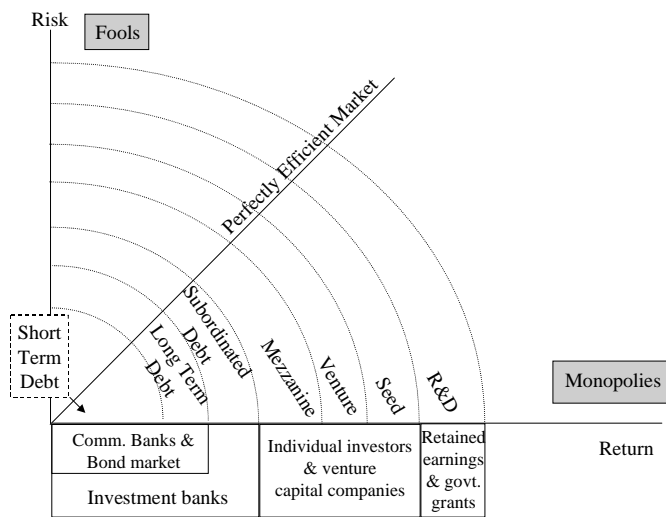


Figure 1 graphically presents a picture of risk and return.

- A perfectly efficient market splits the middle between *Risk* and *Return*.
- The earlier the stage of development, the higher the risk. *Research & Development (R&D)* is generally riskier than *Seed Capital*; *Seed Capital* is riskier than *Venture Capital*; *Venture Capital* is riskier than *Mezzanine (Expansion) Capital*; all forms of risk capital are generally riskier than all forms of debt, including *Subordinated Debt*.

The Market Assessment outlined in Section 7 above will specifically map currently available sources of angel and seed capital, as well as early and later stage venture capital, and then evaluate that capital in terms of where it falls on this risk-return axis. Obviously, sources of capital that split the middle of efficient capital are better than those sources that are either to risk-taking or too risk-averse on Figure 1.

In assessing the supply side of the Supply-Demand Equation, it is relatively easy to measure the available supply of capital because it is finite at any given moment in time. The supply of



capital is dependent upon the number of suppliers in the market, types of suppliers, and willingness to lend.

The demand side of the equation is a totally different matter altogether. *At any given moment, demand is infinite in the eyes of demanders.* However, there is a subtle yet fundamental distinction between the *demand* and the *desire* for capital. This reality absolutely affects the ability of any study to quantify the actual *need* for capital. As we assess the potential market demand for new capital mechanisms, our task is similar to looking into Plato's Cave. Instead of seeing actual demand, we have to content ourselves with seeing the "shadows on the wall" (the projected or professed need of demanders) that Plato saw within his cave. As we have undertaken market assessments over the past 38 years to determine the need for properly capitalized and properly managed funds to meet the requirements of particular markets, we have developed a number of surrogate techniques for recognizing the patterns within the "shadows on the wall."

Understanding the number and range of current suppliers and the actual (as opposed to apparent) needs of demanders and suppliers is essential before conceiving of and designing a new Multi-Tech Fund. Therefore, before a Multi-Tech Fund would be recommended and built, the Market Assessment will evaluate the demand for financing and the activity of current suppliers in the San Antonio market.

Before we propose intervening in financial markets to remove barriers, however, we need to understand the nature of those barriers, or financial market imperfections. The primary technique we use involves looking systematically at the five principal barriers to the flow of financial capital: (1) insufficient risk pricing, pooling and spreading mechanisms; (2) high information and transaction costs; (3) market prejudice; (4) insufficient market competition; and (5) market-distorting government policies.

An under-served market for financial capital may exist in San Antonio if any one of the following factors interferes with the flow of resources between firms and resource suppliers.

Market Imperfections

1) *Insufficient Risk Pricing, Risk Pooling and Risk Spreading Mechanisms*

The most serious barrier to appropriate capital access for otherwise viable high growth potential enterprises in any market is the absence of financial intermediaries between suppliers and demanders which are capable of both pricing to risk and pooling and spreading risk.

Factors impacting capital availability are:

- *Risk Management* – Risk management requires proper risk pricing and pooling and spreading. High risk requires high return.



- *Risk Pricing* – The risk of potential investments is evaluated. Based on this, a fund determines what return is necessary to fund the deal.
- *Risk Pooling* – Investments of varying degrees of risk are put together in a single portfolio to average out risk among investments.
- *Risk Spreading* – The risk associated with an investment or group of investments is spread among a number of individual investors to ensure that the risky investment(s) is only a small portion of each individual investor’s overall investment portfolios.

The supply of any form of financial capital can never make up for lack of markets, poor management, or the absence of other crucial supply factors such as adequate labor, land, and infrastructure.

As discussed in Section 5 of this report, angel and venture funding currently going on in San Antonio is done based upon personal relationships rather than systematic venture capital evaluations. This suggests that San Antonio currently lacks the systematic venture capital that would create risk pooling and risk spreading mechanisms.

2) High Information and Transaction Costs

High information and transaction costs are equally severe barriers to investment. These high information and transaction costs affect perceptions with regard to both real goods markets and financial markets.

Time and again, specialized managements, capable of looking at highly specialized kinds of companies, have been able to lower the individual information and transaction costs necessary to identify, evaluate, approve and track investments in targeted areas and industries. All specialized risk capitalists – such as those focusing on biomedical, biotechnology, high technology and green/clean technology – do this.

As discussed in Section 5 of this report, many investors in Texas are unfamiliar with emerging sector technologies and, therefore, appear to be uncomfortable investing in these sectors. Rather than turning away from these technologies altogether, many are asking for the information and exposure that will allow them to reduce information costs and invest in these sectors more comfortably.

3) Market Prejudice

Market prejudice is a definable market barrier, as well as a social reality. Market prejudice is a pre-judgment by resource suppliers about particular industries, geographic areas or other key features of firm demanders, based on a short-hand assessment of a few key factors.

Such market pre-judgments avoid the high information cost of making individual resource allocation decisions by arbitrarily ruling out whole classes of potential demanders.

Unlike Austin, San Antonio is not seen as a producer of venture fundable deals and as a center of venture capital activity. However, there appear to be a significant number of good deals in San Antonio. This is a clear example of prejudice against the San Antonio market and this market prejudice is self reinforcing, since lack of finance discourages entrepreneurs in San Antonio.



4) *Insufficient Competition*

Generally speaking, in market areas where there are limited current providers of venture capital, demander firms are forced to alter their enterprise plans, seek capital from outside the local market, and/or relocate or close down their business.

The Project Team has not yet conducted a full assessment of venture capital suppliers to the San Antonio market. However, interviewees indicated that the San Antonio market lacks venture capital institutions and that this has led to (1) a lack of venture capital investment in the city and (2) the removal of venture capital-ready firms from San Antonio to other areas of the country. This suggests that there is insufficient venture capital competition in the San Antonio market. The Detailed Market Assessment of venture capital demand and supply outlined in Section 7 above, as an aspect of the Market Assessment, will lead to a clearer picture of real needs in the market.

5) *Government Policies*

Government policies designed to accomplish essential public policy goals often indirectly and unintentionally increase market concentration, impose added information and transaction costs to investment decisions, or distort the negotiation of risk-adjusted rates of return between demanders and suppliers.

The Project Team did not find government policies to be a barrier to venture capital activity in San Antonio upon initial review.

Use of the Conceptual Framework

As has been the case with numerous fund building tasks in the past, the Fund Building Team will employ this Conceptual Framework in practical terms to graph the market need for capital from both a demand and supply standpoint, and, thereby, elucidate more clearly the need for a San Antonio Multi-Tech Venture Fund.

